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International Conference on Business, Accounting Finance and Economics 2021

Fostering economic recovery: Balancing between lives and livelihoods



E-Proceeding



International Conference on Business, Accounting, Finance and Economics 2021

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**Proceeding of International Conference on Business,
Accountancy, Finance, and Economics (BAFE 2021)**

**FOSTERING ECONOMIC RECOVERY: BALANCING
BETWEEN LIVES AND LIVELIHOODS**

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Message from UTAR President

Welcome to the International Conference on Business, Accounting, Finance and Economics (BAFE) 2021. Now into its 9th year, BAFE 2021 is also our second virtual conference to be held and it is truly an honour to welcome all esteemed speakers, presenters, and participants to this conference.

Special thanks to the conference's keynote speakers, Prof Dr Tang Heiwai from The University of Hong Kong, Hong Kong, and Prof Dr Chou Ying-Chyi from Tunghai University, Taiwan for the opportunity to learn from your research, knowledge, and experience sharing. Apart from that, the gathering of researchers to this conference also provides a platform for our participants to join in the discussions and contribute to new theoretical, methodological and empirical knowledge on all aspects of business management, accounting, finance and economics.

Themed, 'Fostering Economic Recovery: Balancing between Lives and Livelihoods', the BAFE conference continues to become an arena that promotes research development, linkages and knowledge mobilisation among disciplines and across institutions, sectors, and regions, as well as an intellectual platform for scholars and researchers to exchange ideas and information on critical research issues, since 2013. I am very pleased with the continuous success and effort by Faculty of Business and Finance (FBF); Centre for Accounting, Banking and Finance; Centre for Business and Management; and Centre for Economic Studies of Kampar Campus for organising this conference.

This year, the conference received more than 80 papers, consisting of local papers, and international papers from Indonesia, China, India, Australia, Brazil, Taiwan, Philippines, Nigeria, and Lithuania. Their input will certainly stimulate profound discussions to bring forward ideas for progress and improvements that will advance research in the various areas of business, accounting, finance and economics. I am also impressed to see the conference making progress over the years as it truly echoes UTAR's commitment to engage in research and practice at international standards which will enable the widest variety of people to develop their capabilities in shaping the future of the society and nation.

I hope everyone will have an engaging timesharing knowledge and immersing in interactive discussions. Lastly, I would like to thank the organisers, speakers, sponsors and participants for joining hands with us for making this year's BAFE another round of success.

Thank you.

Ir. Prof. Dr. Ewe Hong Tat



Message from Dean, Faculty of Business and Finance (FBF)

The Faculty of Business and Finance (FBF) would like to welcome you to The 9th International Conference on Business, Accounting, Finance and Economics (BAFE) 2021.

The world economy is experiencing more challenging times with market uncertainties especially in the COVID-19 pandemic. In environment front, the environment problems the human-kind facing is climate change. Technology wise, the fourth industry revolution is changing the business landscape and operations. Digital financial services industry is undergoing explosive development. The rise of finance technology (FinTech) and Central Bank Digital Currency is redefining the financial services.

These processes are clearly interrelated, for globalisation would make little sense if it did not involve consideration of global digital interchanges and environmental problems. These illustrate just three of the many significant challenges to the society in defining the things which should be studied. In the Conference, I hope the presenters and participants will learn how to manage uncertainties through sustainable development mindset.

I was told that the Conference received about one-third of submissions across regions from ASEAN, East Asian, South Asian, Oceania and European countries, which were reviewed and selected for presentation and publication. The Conference is a great platform to share ideas, views, findings and research outcomes and to assimilate the business, accounting, finance and economics studies. I hope you will find the Conference to be useful and that the Conference can provide an excellent platform for academic deliberation. Our field is enriched by the dialogue among scholars from around the world. I hope this will be a memorable, valuable, and enjoyable experience.

I would like to extend my appreciation to the Organising Chairman Dr. Choong Yuen Onn, Organising Committee members and reviewers for their great dedication in making this Conference a reality. Your high competence, enthusiasm, time and expertise knowledge, enabled us to prepare the high-quality programme. I believe that all presenters and participants will benefit from the proceedings and also find it stimulating in this process. I would like to wish you success in your technical presentations.

My special thanks to the Keynote Speakers, Professor Dr. Tang Hei Wai (University of Hong Kong), and Professor Dr. Chou Ying Chyi (Tunghai University) for your valuable sharing, and sponsors who have granted your support to the conference.

Once again, I hope all of you will have effective and fruitful discussions. Thank you.

Associate Professor Dr. Au Yong Hui Nee
Dean, Faculty of Business and Finance
Universiti Tunku Abdul Rahman



Message from the Conference Chairperson, International Conference on BAFE 2021

On behalf of the organizing committee, I am honored and delighted to welcome you to the 9th International Conference on Business, Accounting, Finance and Economics (BAFE) 2021. With the post of COVID-19 pandemic, this year is our second year of organizing BAFE Conference via online together with UTAR's Faculty of Business and Finance, Faculty's research centres namely: Centre for Accounting, Banking and Finance (CABF), Centre for Business Management (CBM), and Centre for Economic Studies (CES). This year, there are four partner universities: Manuel S. Enverga University Foundation (Philippines), Yichun University (China), Universitas Sebelas Maret (Indonesia) and Western Sydney University (Australia) and one UTAR's research centre: Centre for Learning and Teaching as co-organisers. We would like to thank our co-organisers who have offered their support to BAFE 2021.

The theme for this year is "Fostering economic recovery: Balancing between lives and livelihoods" as the COVID-19 pandemic has undoubtedly transformed many parts of life as we know it. This is especially true in the health, education, and economic contexts. COVID-19 has been with us close to two years since 2020. Its changes our living style and imposed many new challenges to all aspect of our life. Thus, this is the time for research to assist key stakeholders by finding the right balance between lives and livelihoods in fostering economic recovery. This conference aims to bring together researchers to present up-to-date works that contribute to new theoretical, methodological, and empirical knowledge which related to ALL aspects of business management, accounting, finance, and economics.

Apart from this, I wish to thank Prof Dr Chou Ying-Chyi and Prof Dr Tang Heiwei for being our keynote speakers. Last but not least, I would like to thank my team who have work tirelessly on the preparations for almost a year in many ways to make this Conference become a reality. Once again, I would like to thank all participants for your support. We look forward to meeting you virtually. Thank you.

Best regards and wishes,

Assistant Professor Dr. Choong Yuen Onn
Chairperson of BAFE 2021
Deputy Dean of Research & Development and Postgraduate Programme
Faculty of Business and Finance
Universiti Tunku Abdul Rahman

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BAFE001:
**WHAT DRIVES CONTINUANCE RESPONSE TO FACEBOOK
ADVERTISING? AN EXTENDED ECM PERSPECTIVE**

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Abstract

The growing smartphone penetration with popularity of social media has create a new window of advertising, namely Facebook advertising. Even though Facebook is one of the most popular social media platforms, however, there are relatively little research effort focuses on understanding continuance intention to response to Facebook advertising. As the success of Facebook advertising lies on continuance intention, hence, this conceptual paper aims to extend the Expectation Confirmation Model (ECM) with trust and irritation. The conceptual model enables mobile marketers and stakeholders to have better ideas to formulate strategy in driving the continuance response rate to mobile Facebook advertising at higher level.

Keywords: Facebook Advertising; Continuance Response; Expectation Confirmation Model (ECM); Trust (TR); Irritation (IR)

INTRODUCTION

Gone were the days, where the demand of advertising only relies on the traditional media. With the advancement of social media couple with affordable price of smart phones which have driven the swift of focus from traditional media advertising to Facebook advertising. In definition, "Facebook advertising are paid messages from businesses that are written in their voice and help reach the people who matter most to them" (Facebook.com, n.a.). With Facebook advertising, marketers in general can increase their conversions generate sales leads and ultimately help to achieve their specific marketing goals. As such, there is no surprisingly that Malaysia Facebook advertising spending is expected to see an annual growth rate (CAGR 2021-2025) of 10.19%, resulting in a projected market volume of US\$215 million by 2025 (Statista.com, 2020). Even so, the research gaps still remain exists. Firstly, with the rapid growth of social media such as Facebook, however, there are rarely no research conducted to understand how consumer's response to Facebook advertising. Secondly, the extant of IS literatures heavily focus on investigating pre-adoption behavior of mobile advertising (Wong et al., 2015; Khan and Alil, 2010; Yang, 2007), research on post-adoption behavior especially continuance intention is relatively limited. Lastly, even though Expectation Confirmation Model (ECM) is the renowned model to understand post-adoption behavior, however, literatures found that there are also other important constructs left out in the context of Facebook advertising such as trust and irritation. Hence, the paper aims to extend Expectation Confirmation Model with the inclusion of trust and irritation in understanding continuance response to Facebook advertising. The flow of the paper begins with the introduction of the study and followed by literature reviews. Based on the literature reviews, the research propositions are developed, Lastly, the paper ends with the research implications and conclusion.

LITERATURE REVIEW

Expectation Confirmation Model (ECM)

Unlike Expectation Confirmation Theory (ECT) study both pre-consumption and post-consumption constructs, ECM focuses only on post-adoption constructs, namely post perceived usefulness. The rationale is pre-adoption constructs are already captured in both confirmation and

satisfaction constructs. ECM hypothesized that IS continuance intention is determined by three constructs, namely, (1) users' satisfaction level with IS; (2) the degree of users' confirmation of expectations; (3) the post-expectations construct, perceived usefulness. As ECM is created to understand IS continuance intention, this is not surprisingly that numerous studies have adopted the model in predicting IS continuance intention.

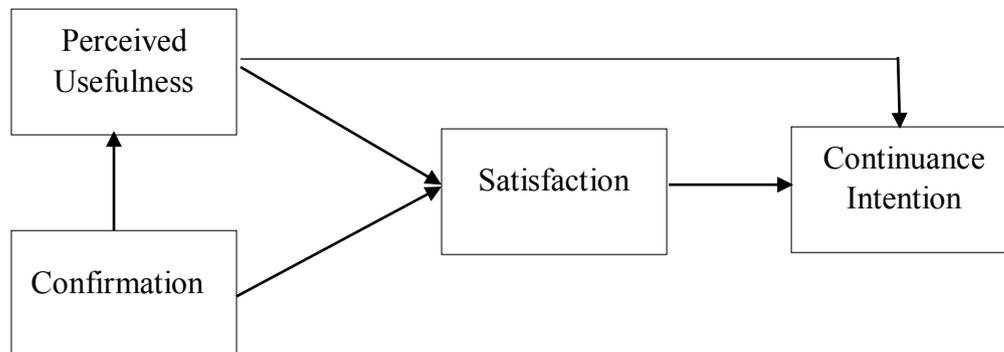


Figure 1: Expectation-Confirmation Model

Factors that Drive Continuance Intention to Response to Facebook Advertising

Perceived Usefulness (PU)

Based on the Expectation Confirmation Model (ECM), five hypotheses are proposed. Firstly, the ECM suggested that user satisfaction with usage is a vital element in formation of information system continuance intention. The association between satisfaction and continuance intention is well-supported in information system literatures such as mobile data service (Kim, 2010), electronic textbooks (Stone and Eveleth, 2013), and mobile commerce (Chong, 2013). Secondly, the ECM suggested that a users' level of satisfaction not only determined by the confirmation of expectations but also post-adoption belief (i.e., perceived usefulness). User's confirmation implies that users have received expected benefits through the usage experiences which in turn positively affect the user's satisfaction. Next, users' perceived usefulness also found to have positive association with IT continuance intention. (Thong et al., 2006). Another research by Lee and Kwon (2011) through the research on continuance intention on web-based services discovered that continuance intention is determined by perceived usefulness. Similarly, Oghuma et al. (2015) has asserted that PU has a positive influence on mobile instant messaging (MIM) continuance intention. Last of all, the model posited that users' confirmation of expectations is positively linked through perceived usefulness of information technology. In view of users' initial perceived usefulness is not concrete because of the uncertainty over users' expectations towards information technology usage, hence, perceived usefulness is adjusted by confirmation (Bhattacharjee, 2001). Considering ECM as the fundamental model, the following propositions are formulated:

P1: Users' satisfaction is positively linked through continuance intention to response to Facebook advertising.

P2: Users' confirmation is positively linked through with satisfaction of Facebook advertising.

P3: Users' perceived usefulness is positively linked through satisfaction of Facebook advertising.

P4: Users' perceived usefulness is positively linked through continuance intention to response to Facebook advertising.

P5: Users' confirmation of expectations is positively linked through perceived usefulness of Facebook advertising.

Trust (TR)

In the marketing communication, the formation of trust for mobile marketing is a major goal for all advertising companies (Bauer et al., 2005). This is particularly true when users are particular about receiving messages from someone who are unknown persons or organizations (Haghirian et al., 2005). Even though mobile users are usually choosing to response mobile advertising out of curiosity,

but Okazaki et al. (2007) found that users must then decide whether to further response to mobile campaign sites based on trust in the advertisement and in the advertised brand. Pertaining to the relationship between trust and satisfaction, Chen and Qi (2015) supported that their hypothesis that trust has positive significant relationship with members' satisfaction with sharing in academic virtual communities. On the other hand, Truong (2013) denoted that lack of trust in the advertiser is one of the largest barriers in consumer acceptance of mobile television advertising. Findings from Chong (2013) also found that trust is the most critical construct in predicting users' mobile commerce continuance usage. Pertaining to the relationship between confirmation and trust, Chong (2013) drawing from the findings from 410 experience m-commerce users in China confirmed that consumers' confirmation of expectations has positive association with trust. More importantly, the findings found that the confirmation level has the strongest significant effect on trust. The following propositions are postulated:

P9: Users' trust is positively linked through satisfaction of Facebook advertising.

P10: Users' trust is positively linked through users' continuance intention to response to Facebook advertising.

P11: Users' confirmation of expectations is positively linked through trust of Facebook advertising.

Irritation (IR)

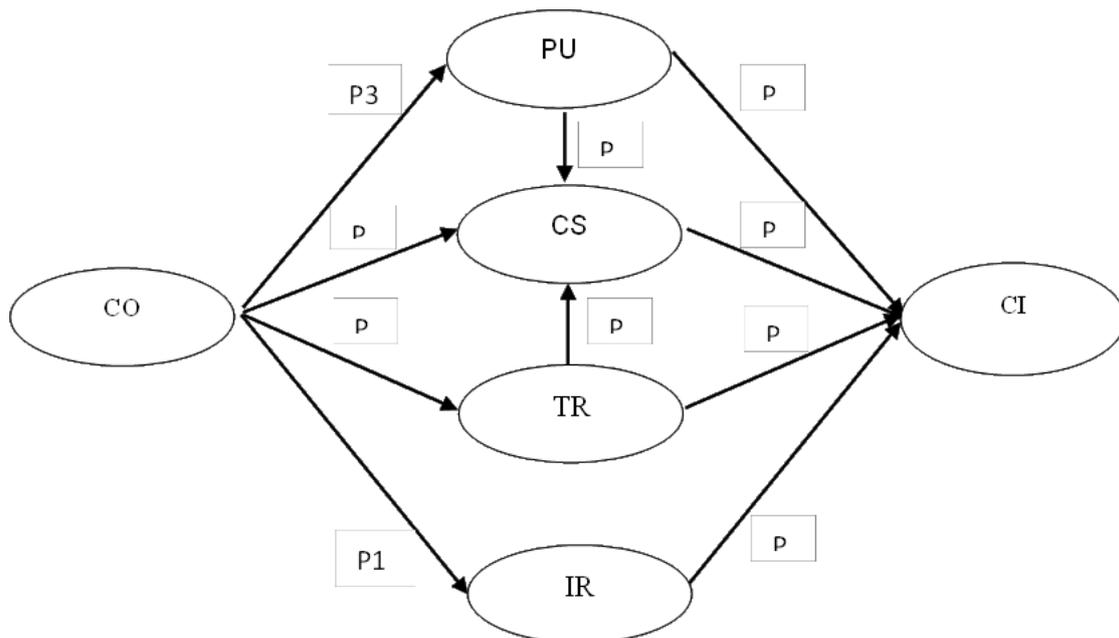
Drawing from the above proposition development, all the above constructs are posited to have positive influence on Facebook advertising. Only irritation construct serves as a negative indicator. In simple words, users are less likely to be convinced if advertising is perceived to be annoying, offensive, or manipulative (Brehm, 1966). Greyser (1973) found that content of advertising messages or the total amount of advertising clutter are the root cause of users' irritation towards advertising. Hakimi et al. (2019) in their study also confirmed that irritation has effects on consumers' attitude towards advertising as it disturbs the individual's privacy. This is particularly true when the mobile Facebook ads have dozens of unsolicited or irrelevant ads spread to individual's mobile devices. Hence, the following propositions are developed:

P12: Irritation is negatively linked with users' continuance intention to response to Facebook advertising.

P13: Users' confirmation of expectations is negatively linked with irritation.

CONCEPTUAL FRAMEWORK

Figure 2: Proposed Conceptual Framework



CONCLUSION AND DISCUSSION

The conceptual paper extended ECM inclusion of trust and irritation in understanding continuance intention to response to Facebook advertising. Theoretically, this conceptual paper provides a clearer picture on how user's continuance response to Facebook advertising. As dozens of studies focuses on pre-adoption behavior, this paper also important in contributing in the literatures. In fact, it can serve as the baseline model for future research especially in Facebook advertising. Practically, this paper also enables marketers to formulate their strategies in enhancing user's continuance response to Facebook advertising at higher level.

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BAFE003:
**FACTORS THAT IMPACT CONSUMER ACCEPTANCE OF SERVICE
ROBOTS IN RESTAURANTS**

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Abstract

In the modern era nowadays, the usage of service robots in restaurants is increasing day by day in foreign countries such as China and Japan. Service robots are created by human beings that are designed to be part of common people's lives and they help people with tedious duties. In this research, businesses able to gain insight and focus or enhance the factor so that they are able to attract and stimulate consumer's intention to use the service robots in their restaurant. This study aims to find out the correlations between all influencing factors and the consumer acceptance of service robots in restaurants in Malaysia. This study found that Perceived Usefulness, Perceived Ease of Use and Perceived Enjoyment are significant towards the consumer acceptance of service robots. This research implied that service robots are beneficial, and it helps to ease the tedious duties in restaurant. At the same time, customers find it enjoyable with service robots available in restaurant. While there is insignificant influence between perceived risk and the behavioral intention to use service robots in restaurant. This indicates that restaurant owners are still worry with the potential risks that service robots might bring such as maintenance cost. With the findings of this study, it is hope that to serve as an important reference for restaurant managers to adopt service robots as to improve the service provided to the consumers

Keywords: Service robot, consumer acceptance, restaurant

INTRODUCTION

The development of service robots is critical and increasingly relevant in the service sectors (Tobias Mettler, 2015). There are several reasons for the application of service robots. Labor costs are mainly minimized and efficiency and quality can be increased with the use of service robots. Despite practicality, the robots act as a branding identity to gain attractions. According to Stanislav Ivanov (2017), development costs, labor costs and customers' acceptance are critical to the service robots' adoption in industry. The human errors issues will be minimized with the use of service robots. The first key benefit is the availability of service robots. They can run 24/7 anywhere and anytime and solve the lack of employee issues. Human lives will become more advanced with the adoption of new technology robots. (Niels Garmann-Johnsen, 2014).

Service robots have different "perceived usefulness" and "perceived ease of use" to customers. Generally, robotics is developed to collect food order and provide service in restaurants (Lee, et al., 2018). These outcomes have displayed the usefulness of service robots to customers. During the interaction between humans and robots, it is stressed that anthropomorphism brings impact to customer use intention, perceived enjoyment and trust (Van Pinxteren et al., 2019). It is also pointed out that the features of service robots influence the enhancement and facilitation of customer experience (Benchmark and Venkatachari, 2016). Thus, users will form strong perceptions of ease of use and feelings with the good robot utility. Besides, Mende (2019) stated the humanoid service robots could cause uncomfortable and negative feelings to customers. Customers have negative responses towards it as they feel that their human identity has been threatened by the robots. They may be unsatisfied with the services robots which badly perform their job.

Besides, robotic technology also provides a negative sense of feeling to the users when they have difficulties to control or use them. Mostly, service robots are challenging the generation due to the lack of access to new technologies. Customers may not be familiar with the new launched service robot's system thus they face difficulties to use it. Therefore, the service industry needs to build trust with customers through robots with AI-enabled technologies (Dawar, 2019).

Robotic technology also provides a different sense of entertainment to the users when they use it. Customers of different ages obtain a different sense of excitement particularly when using the service robots. The consumers are not entertained as they are not familiar with the new launched service robots in restaurants. They are feeling not enjoyable, exciting and pleasing when using the service robots. Van der Heijden (2004) stated that the enjoyment of customers is a critical determinant for their use intention. In addition, Sun, Zhang (2006) emphasized the perceived enjoyment is critical on intention to use. Therefore, success of service robots is dependent on user satisfaction whether they enjoy it when using the technology (Bartneck et al., 2009). The robot characteristics are critical to be understood clearly to know whether it brings excitement to customers. It is because it will induce varied reactions in different service settings.

Service robots cause the consequences of perceived risk to happen. In the restaurants with the robotic technology, the customers perceived a high risk with the usage of the service robots. They had no previous experience of using the services and therefore some unexpected negative consequences resulted. They are concerned with the negative experience caused by the new services even though the services perceived the high usefulness and benefits (Im, Kim, Han, 2008). Therefore, perceived risk perceived by the customers is critical as it affects the adoption and acceptance of the technology services in the restaurant.

Hypotheses Development

Perceived Usefulness (PU)

Generally, users have positive and optimistic attitudes when using technology when the perceived usefulness is high. Thus, the user's behavioural intention increases. With the same effort, perceived usefulness provides the users the perceptions that more is being achieved (Venkatesh and Davis, 2000). In the service robot restaurant, customers have a positive feeling of usage when they agree with the usefulness of service robots. Based on TAM (Davis, 1989), PU is defined as the occurrence of positive outcome when the user believed in the information system he or she used. Thus, it increases the user's intention to use the system or technology. It is also reported that PU is valid when predicting the user's acceptance of the technology (Lee et al., 2011). Previous research showed that the behavioural intention of users to have engagement in the system was positively influenced by PU (Chin and Todd, 1995). As a consequence, customers are more likely to use the service robots when they have the perception of high usefulness in the service robot restaurant. There is substantial proof of the impact of PU on the intention of adaptation (Chen and Barnes, 2007). PU is proposed to be significant in assessing innovation adaptation (Tan and Teo, 2000). According to a university sample from De Graaf (2013), it studied that the PU is significant to influence the younger generations of their acceptance towards service robots. The adoption of the robot increases when an individual perceives the technology as useful, convenient and desirable (Saga & Zmud, 1993). Therefore, we found that perceived usefulness could be used to predict intention to use which confirms H1.

H1: There is a positive relationship between perceived usefulness and consumer intention to use service robots.

Perceived Ease of Use (PEOU)

Behavioral Intention (BI) is crucially affected by PEOU as well as the behaviour on technologies/systems. Especially in an actions research of users, Heerink (2009) represented that PEOU are one of the keys to determine users' behaviour regarding social service robots. In other words, lots of robot-related researches have positively supported the TAM. TAM specifically expanded to identify the determinants of computer usage. This model represented that PEOU affected attitude towards use and behavioural intentions as well as the actual usage. Due to the reasons of robots that have the potential to interact with users that are more socially complex than interactions with other

technologies, to comprehend and predict the robot acceptance is quite difficult. Nevertheless, most of this research is either focused on specific robots or particular age groups of users. According to the features of the robot, there will be variation of users' psychological beliefs towards service robots. Thus, when users have a desperate need to be attributable then they will feel that it is easier to use the service robot and they will think that this is more useful than users who do not require a strong attribution

H2: There is a positive relationship between perceived ease of use and consumer intention to use service robots.

Perceived Enjoyment (PE)

Perceived enjoyment is viewed as an inherent motivation to utilize technology (Venkatesh & Speier, 2000). The earlier studies have demonstrated that, via intrinsic interest, people are motivated to collaborate with robots (Arkin et al., 2003). Besides, many studies measured the degree of perceived enjoyment and found out that it also considered a source of intention to use (Heerink et al, n.d). Moreover, some researchers asserted that enjoyment is essential to humans' intrinsic motivation (Venkatesh and Speier, 2000). According to Van der Heijden, he expressed that in 'hedonic systems', the concept of enjoyment is a crucial determinant for the consumers' intention to use robotic systems. Because it emphasizes the usage process and reflects the pleasure and enjoyment associated using a system, perceived enjoyment is regarded as an intrinsic motivation (Praveena & Thomas, 2014). Serenko et al (2007) indicated that PE has a direct effect on the user's intention to use technology. In this study, we define PE as the extent to which people consider that the usage of service robots could be enjoyable and associated it with enjoyment. Therefore, we hypothesize that H3 was evaluated using perceived enjoyment as the IV and intention to use as the DV. We discovered that perceived enjoyment could be used to predict intention to use in both conditions, confirming H3.

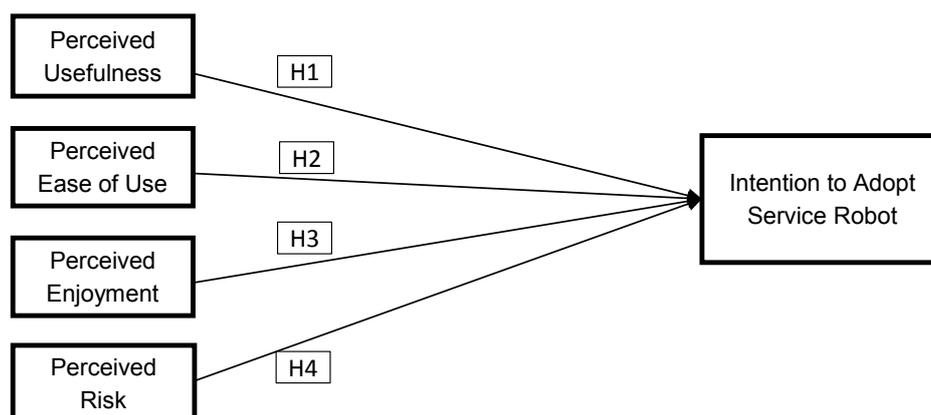
H3: There is a positive relationship between perceived enjoyment and consumer intention to use service robots.

Perceived Risk (PR)

From the technological standpoint, PR is considered as the opportunity of physical, social, time and financial loss caused by those technologies and the perception of risks able to influence the consumer intention to use service robots (Brell et al., 2018). Refer to Williams & Noyes (2007), the adoption of artificial intelligence technology influenced by PR, since perception of risk is directly linked to user behavioural intentions. The PR and uncertainty can impact the development of trust, a lack of trust often regarded as the main obstacle which prevents consumer willingness to utilize the service robot (Everett et al., 2017). Furthermore, Brell et al. (2018) claim that robots are perceived as mechanical, uncontrollable, weird and somehow unethical. According to the research of Rogers (2003), perceived risk is the main psychological barrier for consumers to adopt new technologies, hence reduced risk perception able to enhance consumers' intention to utilize the robots. Thus, in our research, the perceived risk was used as one of the TAM model's external variables to predict intention to use, which confirms H4.

H4: There is a negative relationship between perceived risk and consumer intention to use service robots.

CONCEPTUAL FRAMEWORK



RESEARCH METHODOLOGY

Sample and Data Collection

A self-administered questionnaire was developed and the questionnaires were distributed to respondents over a period of a month. Data was collected from 384 Malaysians. The questionnaire consisted of two sections; the first section required respondents to provide their demographic details. Demographic details are shown in Table 1. The second section contained statements ranging from 1 (strongly disagree) to 7 (strongly agree) based on their experience with service robot. All items in the questionnaire were adopted from reliable and validated scales of previous studies and modified into the context of service robot. Items were adapted from previous studies.

Demographic Variables	Category	Frequency	Percentage (%)
Gender	Male	172	44.8
	Female	212	55.2
Age	≤20	52	13.5
	21 – 30	190	49.7
	31 – 40	88	22.9
	41 – 50	40	10.4
	51 – 60	12	3.1
	>61	1	0.26
Job Position	Student	26	43.5
	Employed	63	43.2
	Others	66	1.31

Table 1. Demographic profile summary.

RESULTS AND DISCUSSION

The data were checked for reliability using Cronbach's alpha coefficient. BI = 0.822, PU = 0.812, PEOU = 0.785, PE = 0.795, and PR = 0.904. The results showed the results of this test, revealing that each of the scales used to measure the independent variables and the dependent variables presented acceptable levels of reliability – above the minimum level of 0.70, as suggested by Nunnally and Bernstein (1994).

Next, multiple regression analysis evolved to determine the strength of all variables towards service robot adoption decision. The regression analysis results showed that all the four variables – PU, PEOU, accounted for 63 percent of the variance in the prediction of user's adoption, $F = 157.69$, $p < .001$. The results revealed that PU had a significant effect with user's decision to adopt service ($r = 0.00$, $p < .01$). Thus, H1 is supported. PEOU also had a significant impact with the dependent variable ($r = 0.00$, $p < .01$), thus supporting H2. PE also had significant correlation with intention to adopt ($r = 0.00$, $p < .01$). Therefore, H3 is supported. H4 is not supported with ($r = 0.59$, $p > .01$).

Table 2. Correlations coefficients for establishing variables' association.

Variables	PU	PEOU	PE	PR
BI	0.732**	0.728**	0.701**	-0.304**
Sig. (2 tailed)	0.000	0.000	0.000	0.000
Cronbach's α	0.812	0.785	0.795	0.904

Note. Correlations are based on N = 384: *p < .05, **p < .01

Table 3. ANOVA and model summary statistics.

	R Square	Adjusted R Square	Mean Square	F	Sig.
Regression	0.625	0.621	31.079	157.691	0.000
Residual			0.197		
Total					

	B	SE	β	t	Sig.
(Constant)	-0.010	0.220	0	-0.043	0.965
PE	0.374	0.059	0.336	6.329	0.000
PEOU	0.333	0.059	0.303	5.606	0.000
PE	0.273	0.060	0.234	4.530	0.000
PR	0.013	0.025	0.018	0.530	0.596

CONCLUSION AND IMPLICATIONS

PU is the significant variable in this study, the outcome is persistent with the previous research of Hye Jin Sung and Hyeon Mo Jeon (2020) that implies perceived usefulness had the highest impact on service robot acceptance intention. According to Gregor (2016), robots capable of providing consistent services to customers rarely make mistakes such as delivering wrong food and beverage, taking wrong orders etc. In addition, service robots are also able to enhance the efficiency of the ordering process, helping to avoid waiting in long lines (So Young Song, 2017). As customers perceive a higher level of usefulness to a service robot, increase the value of the user, they are more likely to show positive attitudes toward communication with the robots and improve the acceptance of restaurant service robots (Seol et al., 2016). The Korean coffee consumers indicate that the entire service offered by a service robot is better than that provided by a human staff and this can be a pleasant and memorable dining experience for them. Due to these reasons, PR will induce consumers to use service robots in restaurants.

According to the findings, H2 is not rejected. Song and Zinkhan (2008) stated that PEOU positively influences people's intention and attitude toward service robots. The existing features of the robots allow consumers to think this is user-friendly, the process of using robots is understandable, clear and straightforward, the interaction with the robots will be relatively free of burden. They do not require to spend significant time and effort when using the service robots (Raafat& Bouchaib, 2004). When the consumers feel those service robots are easy to use, uncomplicated and can use it without any help, they are more likely to use service robots in restaurants (Heerink et al., 2010). Thus, these reasons lead to increment in usage intention towards restaurant service robots.

PE's p-value is lower than 0.05 which is 0.000. This indicated that PE is positively impacting customer acceptance towards using service robots and H3 is not rejected. The previous research has proved that PE is a major factor influencing behavioural intention of use service robots (Marcel Heerink et al., 2008) . Venkatesh (2000) indicated that when individuals enjoy the process itself, this effectively helps them underestimate the complexity involved with using the technology, they do not think it is arduous. Since enjoyment reduces the cognitive burden, the individual is able to have fun from interacting with robots, people are willing to spend more effort on it and enhance the acceptance of service robots (Agarwal and Karahanna, 2000). When consumers are entertained using the service robots, any difficulties that arise will be considered less complicated, so they can alleviate their fear and reluctance to use new technologies (Sun & Zhang, 2006). Moreover, due to service robots are visually attractive, it allows consumers to perceive enjoyment and this might

encourage them to use it (Tractinsky et al., 2000).

Despite this, the independent variable---PR is insignificant to the consumer acceptance of service robots in restaurants as its p-value is higher than 0.05 ($p=0.596$). Therefore, H4 is not supported. This may be because the potential losses in this scenario (risk of waiting for a long time and difficulty interacting smoothly with robots) are too low, the outcomes ranged from a good dinner to a bad dinner. Most of the participants thought using service robots in restaurants was in fact low risk and there would be a small impact on their lives (Per Nordahl, 2019). Thus, PR has lower strengths than other variables in this research. According to Slovic and Peters, people not only judge risk by their own thoughts but also judge by their feelings. If they feel good about an activity, they tend to judge it as low risks and willing to take the risks. Furthermore, the study conducted by Hye Jin Sung and Hyeon Mo Jeon has shown that PR will have no impact on an individual's intention to use service robots, if there is no risk of significant loss involved, there is no need to worry about relying on the robots. Based on the stated reason, PR is unable to impact consumer intention to use service robots in restaurants.

Conclusion

The objective of the study provides a brief insight of consumer acceptance of service robots in Malaysia. We found out that PU, PEOU and PE have a positive relationship to consumer intention to use service robots in restaurants in this study. These results of the study give a basic knowledge for the future researcher which they are allowed to take a reference of our study and add on or develop more ideas for their future research in order to obtain a more comprehensive outcome towards consumer acceptance of service robots.

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BAFE006:
**DIGITAL LITERACY AND INDIVIDUAL RESILIENCE: LESSON
FROM COVID19 PANDEMIC**

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Abstract

The worldwide lockdown and the fear of COVID19 infection have kept people apart. During this adverse situation, digital technology became the means to bridge the distance between family members, employees and employers, teachers and students, and friends. Additionally, misuse and knowledge inadequacy of digital technology may breed fear, anger, and sadness. Hence, digital literacy has become critical to address the difficult situation during the pandemic by developing an individual's resilience. Having considered the importance of digital literacy and individual's resilience during the pandemic, the current study proposes a framework with the aim to link between the two areas. The principal idea relies on two main aspects of digital literacy namely digital device literacy and digital application literacy. Digital application literacy is further categorised into digital literacy on communication, information and services. Previous literature and actual scenarios are discussed to support the development of the proposed framework. The framework is expected to contribute to future research on literacy and resilience.

Keywords: Digital device literacy, Digital information literacy, Digital communication literacy, Digital service literacy, Individual's resilience

INTRODUCTION

As a significant public health disaster, the COVID19 pandemic has been to date the most widespread influence on mankind in over a century (Torner, 2020). As of July 2021, there are approximately 182 million cases of infections with 3.95 million deaths reported. To curb the phenomenon, various countries have implemented lockdowns. In the case of Malaysia, the first lockdown was implemented under the Movement Control Order (MCO) from 18 March 2020 to 3 May 2020. Since then, the MCO has been to some extent relaxed. However, due to a sudden surge in the number of infections and deaths, and coupled with the low vaccination rates, the government has re-imposed a full country lockdown in June 2021. The restriction of movement has continued for 15 months and may continue for a considerably longer period. During this period, individuals are required to stay at home and are only allowed to go out to purchase food and necessities. In public places, individuals are required to wear masks and maintain social distancing. Most shops are to remain closed except for those selling essential products and services, which are also required to follow strict standard operating procedures within the limited operating hours. The prolonged lockdown has resulted in mental, financial and social implications for individuals (Pan, Cui, & Qian, 2020).

Evidently, the pandemic has changed people's way of life. People are unable to socialise with friends and colleagues, visit parents, siblings and relatives, and travel, and are thus, forced to adapt to a new way of life. Like it or not, our life is suddenly surrounded by digital technology that is used for work, meetings, classes, entertainment, shopping and visitations. The usage of mobile phones, computers, drones, artificial intelligence and other digital devices has become essential for

people to communicate, exchange information, provide services and perform online transactions. In other words, digital technology has become a needed tool for the society to accomplish work tasks and routines, and maintain social relationships on a daily basis, with some people embarking into online businesses to generate income. While digital technology offers benefits which many have enjoyed as they adapt to the new way of living, there are some who are unable to cope and thus may not thrive. For example, the stress of working from home has caused distress and anxiety (Kumar, Kumar, Aggarwal, & Yeap, 2021), the overuse of digital technology among children and adolescents has led to fear, anger and sadness (Montag & Elhai, 2020), and the addiction to digital technology has resulted in mental and emotional health disorders (Arora, Chakraborty, & Bhatia, 2021). Additionally, due to digital technology, there is an increasing number of false news being spread, and other adverse effects such as hacking, cyber bullying and online scams. In this regard, digital technology should be adopted in a proficient manner by developing digital literacy. With digital literacy, people develop skills and resilience in using digital devices and are able to evaluate relevant information therefrom in an effective manner. Individual resilience is thus important in adverse situations such as a pandemic, as it indicates the individual's ability to adapt and to sustain in difficult situations.

Despite the importance of digital literacy and individual's resilience, little is known of their association as previous studies have been limited. Most of the current researches on digital technology and resilience focus on specific fields such as education (Iivari, Sharma, & Ventä-Olkkonen, 2020), food supply chain (Michel-Villarreal, Vilalta-Perdomo, Canavari, & Hingley, 2021), healthcare (Tortorella, et al., 2021), micro and small enterprises (Bai, Quayson, & Sarkis, 2021) and the economy (Pierri & Timmer, 2020). As such, it is worth investigating the perspective on individual resilience as the worldwide lockdown has kept people apart and it is apt to examine how individuals cope under such situations. To bridge the gap between digital literacy and individual resilience, this study proposes that digital literacy will lead to individual resilience.

The remainder part of this paper outlines the Resilience Theory, the pillar for this study in Section 2, elements of digital literacy in Section 3, and the relationship between resilience and digital literacy illustrating the literacy - resilience framework in Section 4. The conclusion is presented in Section 5.

LITERATURE REVIEW

Resilience Theory

The word 'resilience' originates from the field of physics, which describes the changeability of an item under the premise of maintaining its vital characteristics. It is a response of an element to external forces. The earlier research which applied the concept of resilience was on ecology by Holling, 1973 (Peng, Yuan, Gu, Peng, & Ming, 2017). Since then, the resilience concept has been used for various fields of research. The most notable use is in the field of psychology, which defines resilience as "the process of adapting well in the face of adversity, trauma, tragedy, threats or even significant sources of stress" (American Psychological Association, 2014, para 4). Since resilience is used in various fields of studies, its definition also varies. Social sciences regard resilience as the ability to recuperate from adverse life experiences and improve while surmounting them (Henderson & Milstein, 1996), the capability to recover from adversity, annoyance and misfortunes (Janas, 2002), and the ability to endure or successfully manage adversity (Werner & Smith, 2001).

With the lockdown, consumers' choice of places to shop is limited, resulting in location constraints and scarcity. Individuals have to contend with mobility shifts and scarcity. Working, schooling and shopping are taking place at home (Sheth, 2020). According to Hamilton, Mittal, Shah, Thompson, and Griskevicius (2018), when there are environmentally imposed constraints, individuals will behave in such a way in order to "react to, cope with, and adapt to" the situation. Many organisations are forced to quickly resort to remote working practices without adequate time to plan and evaluate other options, and to arrange for online distance work for their employees (Agerfalk, Conboy, & Myers, 2020). Due to the confinement measures, consumers had to switch to online purchasing, home deliveries or cashless payment, which hitherto they have not experienced before (Pantano, Pizzi, Scarpi, & Dennis, 2020). Students struggle to focus on their studies while confined at home, and lecturers struggle to devise new teaching methods and courses to ensure engagement from students (Richter, 2020).

Kirk and Rifkin (2020) posited that, once consumers recognise the potential of a crisis, they react by endeavoring to defend against perceived threats to regain control. Gradually, they cope by exercising control in other domains and adopt new behaviours. Over time, consumers adapt by becoming less reactive and more resilient. The lockdown not only changed conventional thinking, but it has also changed business and social norms, with a surge in digital proficiency over a short period of time (Richter, 2020). Due to fear of infections, the COVID19 pandemic has changed consumer purchasing behaviour (Laato, Islam, Farooq, & Dhir, 2020; Prentice, Chen, & Stantic, 2020) with an increasing shift to online purchases (Tran, 2021).

A phenomenon from the lockdown is that most people are accessing the internet and internet-based services to connect, interact, and perform their work duties from home. There has been a rise in the use of information systems and networks, with enormous changes in usage trends and behaviour (De', Pandey, & Pal, 2020). Many users have come to depend heavily on digital resources, some for the first time (Yu, 2020). Internet service usage has seen an increase from the pre-lockdown levels of 40% to 100% with a tenfold increase in the use of video-conferencing services such as Zoom and a 30% growth in the usage of content delivery services like Akamai (Branscombe, 2020).

Information Technology has assumed a central role in many if not all aspects of the COVID19 pandemic, including "behavioural, temporal, societal, and organizational" aspects (Agerfalk et al., 2020). Many office workers have embraced technology in innovative ways that allows them to carry out all their work remotely (Davidson, 2020). Others adjust to the new "normal" by having meetings online while working from home (De' et al., 2020). New social norms are also getting more prevalent in the individuals' daily lives (Carroll & Conboy, 2020). In line with the changes, individuals need to have digital literacy.

Digital Literacy

Digital literacy refers to the ability to understand and to use information from digital sources (Gilster, 1997). Digital literacy does not only denote the individual's capability to discover, analyze and evaluate the information that they receive, share and disseminate but also the individual's capability to use and operate the digital platform proficiently. Digital literacy also requires cognitive skills so that the individual does not become victims of online scams, misinterpret data and images, and spend excessive time with digital applications. Digital literacy has become a topic for research during the pandemic in various areas of e-learning (Zulkarnain, Heleni, & Thahir, 2020) and academic meetings (Nash, 2020).

Hague and Payton (2010) outline digital literacy as eight components which comprises creativity, critical thinking and evaluation, cultural and social understanding, collaboration, find and select information, effective communication, e-safety, and functional skills. Covello and Lei (2010) explain digital literacy in the context of six sub-disciplines namely computer literacy, technology literacy, information literacy, media literacy, visual literacy, and communication literacy. The adoption of digital technology has grown immensely over the years from computer hardware and currently to drones, machine learning and robotics. Parallel to that the elements of digital literacy have increased. Based on the sub-disciplines of digital literacy by Covello and Lei (2010), the current study proposes two main aspects of digital literacy namely 'digital device literacy' and 'digital applications literacy'. The current study further categorises digital applications into digital information literacy, digital communication literacy and digital service literacy. Below is an explanation of the aspect of digital literacy.

Digital Devices Literacy

The concept of digital devices literacy is based on the sub-disciplines of computer and technology literacy highlighted by Covello and Lei (2010). Digital devices literacy refers to the understanding, skill and ability to operate digital devices. Examples of digital devices include computers, mobile phones, tablets, smart appliances and drones.

Digital Applications Literacy

Digital applications literacy refers to the understanding, skill and ability to use a software application proficiently to achieve an individual's needs. Examples of digital applications include gaming applications such as Mobile Legend and Roblox, social network applications such as Instagram and Whatsapp, meeting applications such as Zoom and Microsoft Team, and other service applications such as online banking, online shopping, and e-government.

This study further categories digital applications literacy into information, communication and service. The segregation of the groups is based on the study by Covello and Lei (2010).

Digital Information Literacy

Digital information literacy refers to the individual's ability to discover the information that he requires and the ability to evaluate the information proficiently. An individual should consider the reliability and relevance of the information especially on news related to COVID19, as false information may lead to adverse psychological impacts such as anger and fear.

Digital Communication Literacy

Digital communication literacy refers to the individual's ability to communicate effectively and efficiently. Digital communication encompasses communications through video calls, webinars, online videos, digital news media (Reddy & Gupta, 2020), voice calls, text messaging, social media and online games (Nguyen et al., 2020).

Digital Services Literacy

Digital service literacy refers to the individual's ability to handle online services with due care and competence especially when dealing with online banking services and purchase services. On the other hand, individuals offering digital services or businesses also need to be knowledgeable in handling their businesses to enable them to sustain their operations.

Having considered the above digital literacy aspect, the current study suggests that digital literacy will lead to individual resilience.

Relationship Between Digital Literacy and Individual Resilience

The relationship between literacy and resilience has been empirically proven from studies on various areas, such as physical literacy and resilience (Jefferies, Ungar, Aubertin, & Kriellaars, 2019), health literacy and resilience (Yoo & Lee, 2018), financial literacy and resilience (Klapper & Lusardi, 2020) and vaccine literacy and resilience (Vanderpool, Gaysynsky, & Chou, 2020). Nevertheless, empirical evidence on the relationship between digital literacy and individual resilience is limited. From the perspective of digital literacy and resilience, research has been conducted on the effects on children in the online environment.

From a practical perspective, the Singapore government has identified seven digital foundations that have a high possibility to allow the country to recover from COVID19 pandemic. One of them is by improving the digital literacy among the citizens and civil servants. In Malaysia, the Malaysia Digital Economy Corporation (MDEC) has initiated #SayaDigital to speed up the development of a digitally literate society.

Based on past literature and the current practice on the relationship between literacy and resilience, the current study proposes the framework presented in Figure 1.

CONCEPTUAL FRAMEWORK

Figure 1: Digital Literacy and Individual Resilience

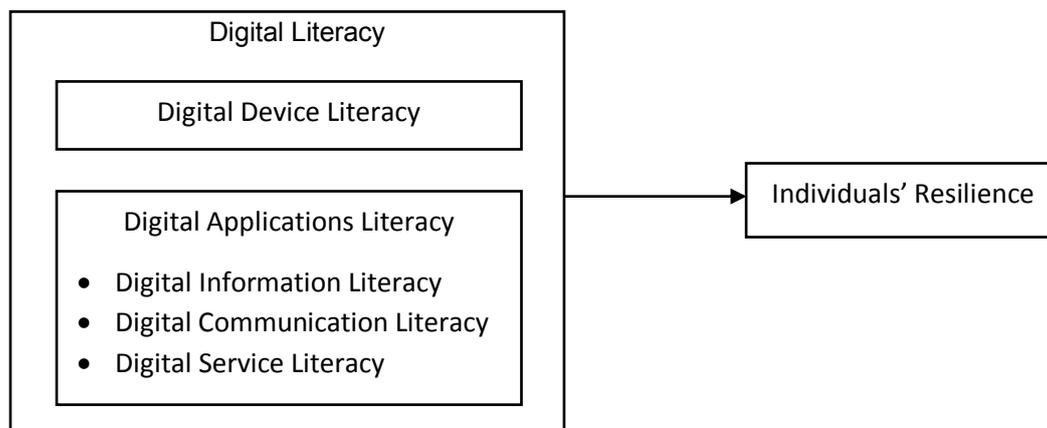


Figure 1 depicts that the digital literacy from the aspects of digital device and digital applications literacy will contribute to individual resilience. Digital information literacy, digital communication literacy and digital service literacy have been categorised under digital applications literacy.

Digital Device Literacy and Individual Resilience

The current study supersedes the computer and technology literacy proposed by Covello and Lei (2010) to reflect the wider scope of the digital device to include mobile phones and smart appliances used in this decade. Carlin, Olafsson, and Pagel (2019) suggested that for individuals to effectively participate in the digital economy, they need to have both knowledge and skills to perform digital financial transactions and to operate digital devices such as mobile phones, smartphones, and tablets (Vogels, Rainie, & Anderson, 2020; Carlin et al., 2019). Handling digital devices by synchronizing one device to another will be helpful during the pandemic as the devices can be used alternatively. Lyons, Kass-Hanna, Liu, Greenlee, and Zeng (2020) found that integrating computers and other digital devices like smartphones is one of the digital literacy strategies to build resilience.

Digital Applications Literacy and Individual Resilience

A study by Nelson, Courier, and Joseph, (2011) found that applications skill is the most relevant digital literacy aspect in adopting digital teaching and learning. They further suggested that applications skill is important for an individual to cope with the challenges of digital learning. Possessing operative skills in using digital applications will develop an individual's resilience during the pandemic. Research conducted by Milenkova and Lendzhova (2021) proved that pensioners used Skype or Viber to communicate with their relatives and to access information during the pandemic. Such applications allowed the users to avoid loneliness and gave them access to the latest information. Likewise, individuals with digital applications literacy will be able to manage their tasks when working from home.

Digital Communication Literacy and Resilience

As the COVID19 condition persistently worsens in Malaysia, various forms of movement control orders (MCO) were implemented by the Malaysian government. The MCO measurements vary between strict and lenient, depending on the severity of the COVID19 situation at the time. However, most of the time, citizens and employees were highly encouraged to stay indoors and work from home as much as possible. Thus, there was a much heavier reliance on digital communication.

Communication is effective when the content is truthful and communicated properly with suitable language, signs and symbols (Reddy & Gupta, 2020). Institutions with a greater ability to adapt to digital communication have greater survival and sustainability during the COVID19 crisis (Ayman, Kaya, & Kuruç, 2020). Likewise, individuals who possess the ability to embrace digital

communication will be able to stay connected and not be left out, especially during a crisis where communication could be critical (Nguyen et al., 2020). Communication is needed in the form of conducting education, socialization, marketing and many more. Effective communication, especially during the COVID19 pandemic is critical. In India, the government changed the usual telephone caller tune from “tring-tring” to “cough-cough” and short 30 seconds messages to create mass awareness of COVID19 among its citizens (Reddy & Gupta, 2020).

A study was conducted by Nguyen et al., (2020) in the United States on the frequency of digital communication between family and friends outside of the household on non-work related matters during the COVID19 pandemic. The study indicates that younger respondents are more likely to have an increase in the frequency of digital communication, in comparison to older respondents. Nevertheless, the increased frequency of digital communication among younger respondents is not due to better internet skills (Nguyen et al., 2020). However, the lack of internet skills has somehow affected the older respondents to communicate less frequently. As a result, these less tech-savvy elderlies were unable to replace the typical face-to-face communications with new digital communication methods for socializing.

Digital Information and Resilience

Digital information has become vital to almost every aspect of life especially during the pandemic as people look forward to receiving regular updates on COVID19. It enables people to access news and various articles on the pandemic and COVID19 related information and share their experiences and concerns. A report by Ernst and Young entitled “Embracing Digital: Is COVID-19 the Catalyst for Lasting Change?” highlighted that governments are using digital information portals such as Artificial Intelligent chatbots, mobile applications and social media channels to ensure that the public is well informed about the virus. Notwithstanding, digital health tools such as mHealth and eHealth provide valuable information such as health services and contact tracing (Wang, Su, Zhang, & Li, 2021). Digital technology may therefore boost psychological resilience through the dissemination of accurate and timely information (Liu & Tong, 2020).

In contrast, false information may lead to adverse psychological impacts such as anger and fear. Inaccurate information led to panic buying in various countries and caused psychological anxiety (Ahmad & Murad, 2020). Likewise, information overload will also induce adverse psychological effects such as anxiety, panic-based hoarding, and other unhealthy behaviour (Skulmowski & Standl, 2021). In addition, research also shows that online information on COVID19 contains a large amount of misleading information (Li, Bailey, Huynd, & Chan, 2020), and public health agencies should aim to control the spread of misinformation concerning the virus to more efficiently manage the pandemic. In certain circumstances, the proliferation of misinformation in digital platforms is faster than the spread of COVID19 disease which is not a good sign (Barua, Barua, Aktar, Kabir, & Li, 2020). Therefore, digital information literacy is important to avoid any emotional distress and to develop individual resilience during the pandemic.

Digital Service Literacy and Resilience

Digital service includes online purchases, online games, e-books and others. The digital service environment has an increasing effect on the consumers' minds and buying behaviour. A customer's buying behaviour may not be solely influenced by the brand, but also by other information obtained through the internet such as search engines and online reviews. This is due to the prevalence of consumers using their digital devices to gather information (Kannan & Li, 2017). People access online comments and reviews on products through social media. With social media, past issues and solutions are posted where sellers can also place their comments for reference by the customers (Vafaei & Maria, 2017).

In a digital service environment, risk and trust can influence buying behaviour. Customer perceived risk that can significantly influence online purchasing behaviour includes the inability of examining a product before buying it, concerns of after-sales services, and the lack of understanding of the language used in an online shop (Pappas, 2016). Such perceived risk may drive away customers from buying a product while customer trust, on the other hand, can drive their behaviour towards online shopping. Additionally, a product's design or functionality is not the only aspect that influences customer expectations. According to Kawaf and Tagg (2017), the customer's purchase

intention is based on rational expectations which influence emotional trust. Furthermore, customer expectations are influenced by information and reviews from other buyers.

In response to the coronavirus, Yuen, Wang, Ma, and Li (2020) determined the factors that would cause consumers to panic buy. These factors are perception, fear, coping behaviour and social psychology. Consumers undertake panic buying to minimize what they perceive to be risks. Loxton et al., (2020) analysed consumer buying behaviour and found that uncertainty and fear are indicated in erratic spending patterns resulting in panic buying and herd mentality as shown in past crises. Examining the online retail industry in Germany, Dannenberg, Fuchs, Riedler, and Wiedemann (2020) found that the COVID19 pandemic has led to a substantial increase in online trade, especially for online grocery sales. Nevertheless, the sudden onset of the pandemic had limited the expansion of online food trading due to the uncertain time frame of lockdowns.

CONCLUSION

The COVID19 pandemic not only resulted in death due to the disease but also has kept people apart to live in loneliness, fear, anger and sadness. People had to adapt to the new way of living by using digital technology to communicate, work, study, shop and conduct other activities online. Digital literacy is important for everybody to remain sustainable and be resilient in facing adverse situations. The current study proposes a framework that connects digital literacy and individual resilience. To summarise, the current study segmented digital literacy into two main aspects of digital device literacy and digital applications literacy. It further divides digital applications literacy into digital literacy on communication, information and services. The framework will benefit future researchers who are interested in the area of digital literacy and individual resilience.

This study explores the constructs of digital literacy and individual's resilience. Future researchers may adopt the proposed framework and test it empirically.

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BAFE012: THE DEVELOPMENT PATH OF KUNMING SMART TOURISM IN THE BIG DATA ENVIRONMENT

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Abstract

Smart tourism is a profound extension of smart earth and smart city and is an inevitable trend of transforming traditional tourism to modern tourism. Based on this theory, this article takes Kunming as an example, analyzing the relationship between big data and smart tourism, conducting a SWOT analysis on Kunming smart tourism in big data technology, and finally elaborates the development path of Kunming smart tourism in the big data environment to promote and develop Kunming Smart Tourism faster and better.

Keywords: Big Data; Kunming; Smart Tourism

INTRODUCTION

With the advancement of information technology, people are applying big data and cloud computing technologies to developed and changing the regulatory model of government tourism authorities, the management model of tourism enterprises, and the way tourists travel. The transformation of tourism informatization and intelligentization has become an inevitable development trend of the tourism industry. The application of big data technology to the tourism industry will help improve the quality and level of tourism services and enhance industrial integration and promote regional economic development.^[1]

BIG DATA AND SMART TOURISM

In 2011, McKinsey & Company of the United States put forward the concept of big data for the first time. It made the following definition: Big data is data whose size exceeds the capabilities of capturing, storing, managing, and analyzing traditional database software tools. At present, we know that the considerable role of big data in various industries. In the tourism industry, big data also plays a significant role.

Smart tourism is a further extension of the concept of smart earth and smart city proposed by Sam Palmisano, President of IBM. It is to use the Internet of things, cloud computing, and other technologies to perceive tourism resources, tourism activities, tourists, tourism economy, and other information in the Internet environment, and release relevant information so that people can understand travel information in time and better arrange tourism plans, realize the intelligent perception and utilization of tourism information.

As far as the relationship between big data and smart tourism is concerned, the mainstream view in the industry believes that smart tourism needs the support of big data, which mainly manifested in the following aspects:

One is that big data makes the experience of smart tourism more intelligent. In the big data environment, the acquisition of tourism information is more convenient and free. In the past, people obtain tourism information channels relatively blocked, mainly by tourism management departments and companies or through word of mouth from relatives and friends. In the era of big data, information transmission is more convenient, including travel arrangements, safety guarantees, travel experience, and other links. Tourists can arrange all their itineraries in a time-saving and labor-saving manner, from formulating travel plans to smooth return journeys with only one smart terminal, eliminating the various worries of tourists, and ensuring the realization of high-quality tourism.

Big data mining technology and information collection technology can provide tourism companies with various types of data samples. At the same time, it can collect massive data on tourists, tourism management, tourism resources, et al. for aggregation and analysis to provide tourism companies with tourism market forecasting activities. Data enables companies to accurately grasp the future development direction of the market and design tourism products that meet the personalized experience needs of tourists^[2]. Big data technology can provide tourism companies with more accurate data, making the data needed for market positioning more targeted and making the marketing of tourism companies more precise. Secondly, big data can realize information sharing between tourism companies and save tourism companies' operating costs. Third, big data technology to build an emergency guarantee mechanism can quickly respond to emergencies, avoid the spread of negative information, minimize the negative impact, and enable tourism companies to improve the quality of services further and provide tourists with a better travel experience.

Third, big data makes smart tourism management more scientific. The data collected by big data technology, such as audio and video data, picture data, text data, GPS data, et al., provide a reliable basis for local tourism management departments to carry out tourism market supervision work, which is conducive to the healthy and orderly development of the tourism market.

SWOT ANALYSIS OF KUNMING SMART TOURISM IN THE BIG DATA ENVIRONMENT

1. Development status of Kunming's tourism industry

Kunming is a tourist city. According to incomplete statistics, there are currently more than 50 tourist attractions in Kunming, nine scenic spots above A-level, more than 4500 hotels and other accommodation facilities, 183 domestic travel agencies, 29 international travel agencies, and tourist product production. There are more than 100 manufacturers and about 140,000 employees in the city's tourism industry.

At the same time, in terms of tourism informationization, Kunming also started early. Kunming took the lead in building a tourism portal as early as 1998. In 2010, Kunming Tourism Bureau and China Telecom Kunming Branch signed a "digital tourism" project cooperation agreement to build A "digital tourism" management platform. In recent years, Kunming has also used electronic maps and other methods through the Internet, manual, and telephone to understand Kunming attractions' information easily. The development of smart tourism has achieved initial results, as shown in Table 1:

Table 1 Kunming City's Smart Tourism Construction Achievements

Year	Leading Department	Construction Achievement
2012	Kunming City Government	Used smart phones and mobile Internet in individual tourist tourism to create a Kunming smart tourism information query system
2014	Kunming Tourism Bureau	Launched the construction of smart Kunming
2014	Kunming hotels and inns	Used WeChat to scan for quick room booking and check-out, and purchase tickets for scenic spots at the front desk of the hotel
2018	Kunming City Government	Used WeChat to scan and APP client to realize fast query of tourism information, realize self-guided tour, and easily travel in Kunming

In addition, many problems need to be solved urgently in the development of Kunming's tourism industry. The following research is now carried out utilizing SWOT analysis:

2. SWOT Analysis of Kunming Smart Tourism in Big Data Environment

2.1. Advantages

The construction of smart tourism and the construction of smart cities are inseparable, and the two promote and complement each other. In July 2016, Kunming commissioned the Yunnan Provincial Post and Telecommunications Planning and Design Institute to compile and complete the "*Kunming Smart City Top-Level Design (2016-2020)*", proposing a blueprint for the development of a smart city. In October of the same year, the two municipal offices issued the "*Implementation Opinions on Accelerating the Construction of Smart Cities (2016-2018)*". They established a leading group with the secretary of the municipal party committee and the mayor personally serving as the head and deputy team leaders to coordinate and lead the construction of smart cities at a high level. With the development of the big data industry, authorities establish three institutions related to smart cities at the same time: Kunming Big Data Administration, Kunming Information Center, Kunming Smart City Investment Company, and organize the PPP project of the Ministry of Finance have and implemented.^[3] In July 2017, authorities formulated and passed the "*Kunming Smart City (Phase I) PPP Project Feasibility Study Plan.*" At present, the construction of Kunming's smart city has achieved remarkable results. People could see the service facilities everywhere, urban governance has been more precise and refined and constructed a safe and reliable operating system for tourists, and realizing the data connection of the city. Authorities have greatly improved the public service capacity of Kunming and appropriately solved the problems.^[4] At the same time, Kunming smart tourism construction has also made many attempts, launched the "A mobile phone tour of Yunnan" project, and comprehensive upgrade electronic ticketing system, online tour guide, scenic spot information monitoring, complaint handling system, smart toilet, and smart parking lot realizing intelligent management of tourism infrastructure and strives to bring tourists a better tourism experience.

2.2. Disadvantages

First, the establishment of tourism institutions is unscientific. The handling of all issues in the tourism industry requires the coordination of various departments. The Kunming Tourism Bureau is only a subordinate unit of the Kunming government, and there are many difficulties in comprehensive coordination. At the same time, Kunming has not yet formulated a development plan for smart tourism, which the local planning authority should formulate, lacks professional tourism talents, which further increases the difficulty of coordinating various agencies. Second, the authority has not fully utilized advanced technologies such as big data and cloud computing. Each link of tourism activities will produce a large amount of tourism information, and Kunming has not yet established a cloud computing center to store and analyze tourism information, resulting in a large amount of tourism information waste in time. The utilization rate of information needs to be improved. Third, there is a shortage of talents for smart tourism construction. Although Kunming's hardware facilities for smart tourism development are complete, there is a shortage of relevant professionals. The talents required for smart tourism must have a wide range of knowledge, a solid knowledge of traditional tourism product marketing and management, and computer knowledge such as the Internet, big data, and cloud computing, which is what Kunming lacks.

2.3. Opportunity

First, as mentioned in the previous article, Kunming formulated the "*Kunming Smart City Top-Level Design (2016-2020)*" as early as 2016 and continuously improving the relevant government regulations and supporting facilities, which has laid a good foundation for Kunming's smart tourism development. Second, Kunming has pleasant scenery, and the number of tourists it receives continues to increase each year. The tourism industry has more room for development. As long as the citizens are open and tolerant, they will inevitably welcome more Chinese and foreign tourists. Third, in the past few years, the growth rate of the tourism market has gradually slowed down, and the entire tourism market has become saturated. In addition, due to the impact of the epidemic, tourism data in 2020 will drop sharply. With the improvement of the epidemic prevention and control situation, the tourism market will continue in 2021. For the better, this is a big development opportunity for Kunming, a tourist city.

2.4. Challenge

At present, smart tourism has become a new development trend in the tourism industry. First, the competition between cities has become more intense. Various cities in Yunnan Province have successively issued smart tourism development plans, and the competition between cities has become more intense. Second, the construction of smart cities lacks mature experience and models to learn. At present, as a new thing, the development of smart cities in our country is still in its infancy, and the pilot cities selected by smart cities are mostly first-tier cities such as municipalities directly under the central government and developed coastal cities. Although Kunming has a large number of tourist attractions, they are not selected in the first batch of 18 smart national tourism pilot cities. These cities are not the same as Kunming, so the development experience of other cities has no practical reference for the construction of smart tourism in Kunming.

2.5. Summary

By analyzing the advantages, disadvantages, opportunities, and challenges of Kunming's smart tourism construction, we can see that Kunming has great potential in constructing smart cities. The Kunming government must seize the opportunities, reasonably use the advantages and conditions, and effectively avoid the disadvantages. We believe that in time, Kunming's smart tourism construction will surely achieve good results. On the one hand, it is necessary to use national policies to apply for financial subsidy funds and actively apply for smart tourism city pilots and innovative smart tourism projects. On the other hand, it is necessary to integrate the relevant agencies of the Cultural Bureau, the Tourism Bureau, and the Radio, Film and Television Bureau, realize information sharing through the coordination of relevant government departments, avoid the phenomenon of information islands, and establish a rapid tourism response mechanism to develop smart tourism through joint efforts of multiple departments actively.

THE DEVELOPMENT PATH OF KUNMING SMART TOURISM IN THE BIG DATA ENVIRONMENT

1. Optimize the top-level design

Suppose Kunming wants to increase the importance of smart tourism construction. In that case, it needs to actively learn the advanced experience of other domestic smart tourism cities, further improve the top-level design of Kunming smart tourism based on the actual situation of local smart city construction, and clarify the standards for smart tourism construction. Introduce relevant policies and regulations to enable smart tourism construction to have laws and shreds of evidence to follow, and promote the faster and better development of Kunming smart tourism.^[5]

On the one hand, it is necessary to build a smart tourism public management system, move the traditional tourism business from offline to online, and transfer smart tourism from online to offline to realize the interconnection and interconnection of online and offline. On the other hand, it is necessary to build a government-business-service management system, use the strength of the government, the flexibility of services, and the flexibility of commerce to achieve tripartite protection, improve the management of the tourism industry, and further enhance the convenience and comfort of tourists. See picture 1:

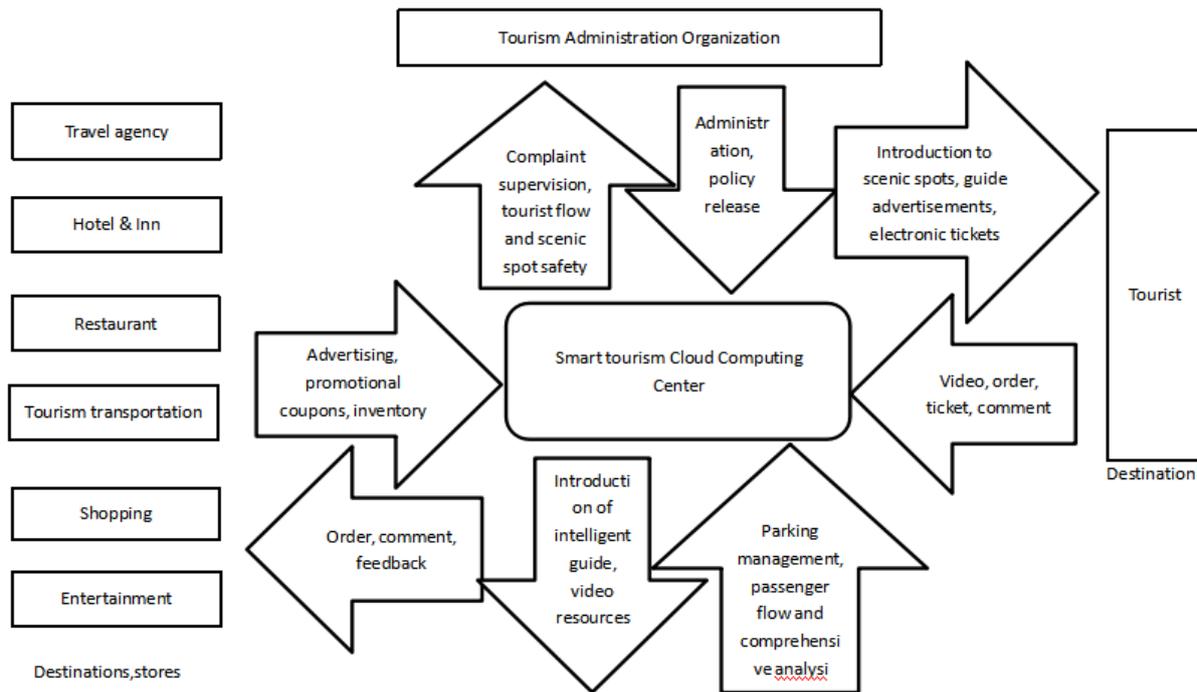


Figure 1 Tourism service management system design combining government affairs, business and service

2. Improve supporting facilities

First, start to establish a cloud computing center that is compatible with Kunming Smart Tourism, and use this as the core to collect and organize tourism information according to unified standards, and store it in the cloud computing center promptly to integrate government, tourism companies, and tourists on time. Data and process it. Second, build a cloud exchange and cloud storage center. Kunming has many tourist attractions, which has driven the development of tourism companies and attracted many tourists worldwide. The interaction of the three will generate massive amounts of information. In order to ensure the legitimate rights and interests of tourists, it is necessary to strengthen tourism supervision, and the supervision process will also generate corresponding information. It is necessary to establish a cloud exchange and cloud storage center and cooperate with the cloud computing center to collect, store and comprehensively analyze it.^[6] In addition, different government agencies and travel companies generated the data of smart tourism in operation and stored this information in the smart tourism system classification. It is necessary to set up multiple subsystems and unified data collection, storage, and analysis, et al. Relevant personnel should build the technical standards of the relevant aspects to use the information in all directions.

3. Reform public services

We recommend that relevant departments start to establish a tourism public information service platform to collect and process information from tourism companies and tourists, to use cloud computing technology to provide the processed information to tourists through channels such as the Internet, TV, and offline travel agencies, to make tourists more accurate obtain online travel information and offline travel services. First, develop the "one cloud and multiple channels" service. To this end, it is necessary to establish a cloud computing center, use modern communication technology to realize real-time transmission of tourism information, and use different communication equipment to push tourism information to different groups. In addition to providing tourism information services through the official website, the government should also use computers, mobile phones, and other self-media devices to provide tourists and tourism companies with more accurate and convenient services, such as publishing tourism information on official accounts. Second, use "one cloud with multiple routes" to provide travel consulting services. Use cloud computing center data further to improve Kunming's tourism consulting information service system and provide personalized consulting services for self-guided and self-driving travelers.^[7]

4. Build a smart tourism demonstration site

Kunming is known as the Kingdom of Plants and Flowers. It has a large number of unique tourism resources and is a famous tourist attraction. At the same time, Kunming is a gathering place of many ethnic groups with colorful ethnic customs. Therefore, Kunming must use the local rich tourism resources, Create boutique attractions, and create smart tourism demonstration sites. In addition, Kunming is like spring in all seasons and has a pleasant climate. The development of tourism products and the construction of tourism demonstration sites should focus on sightseeing tours and targeted tourism with distinctive ethnic characteristics, snow-capped mountain tours, tropical flora and fauna tourism, comprehensive tourism, entertainment tourism, and other projects.^[8]

5. Develop smart tourism government affairs

First, build a tourism big data analysis system, use cloud computing, Internet of Things, and artificial intelligence technology to establish a tourism data detection and analysis system to monitor and predict the flow of tourists at various scenic spots in real-time to release sufficient information promptly and improve tourism information monitor efficiency and visitor satisfaction. Moreover, to provide a reliable decision-making basis for the management department to improve monitoring tourism information and tourist satisfaction (Figure 2).

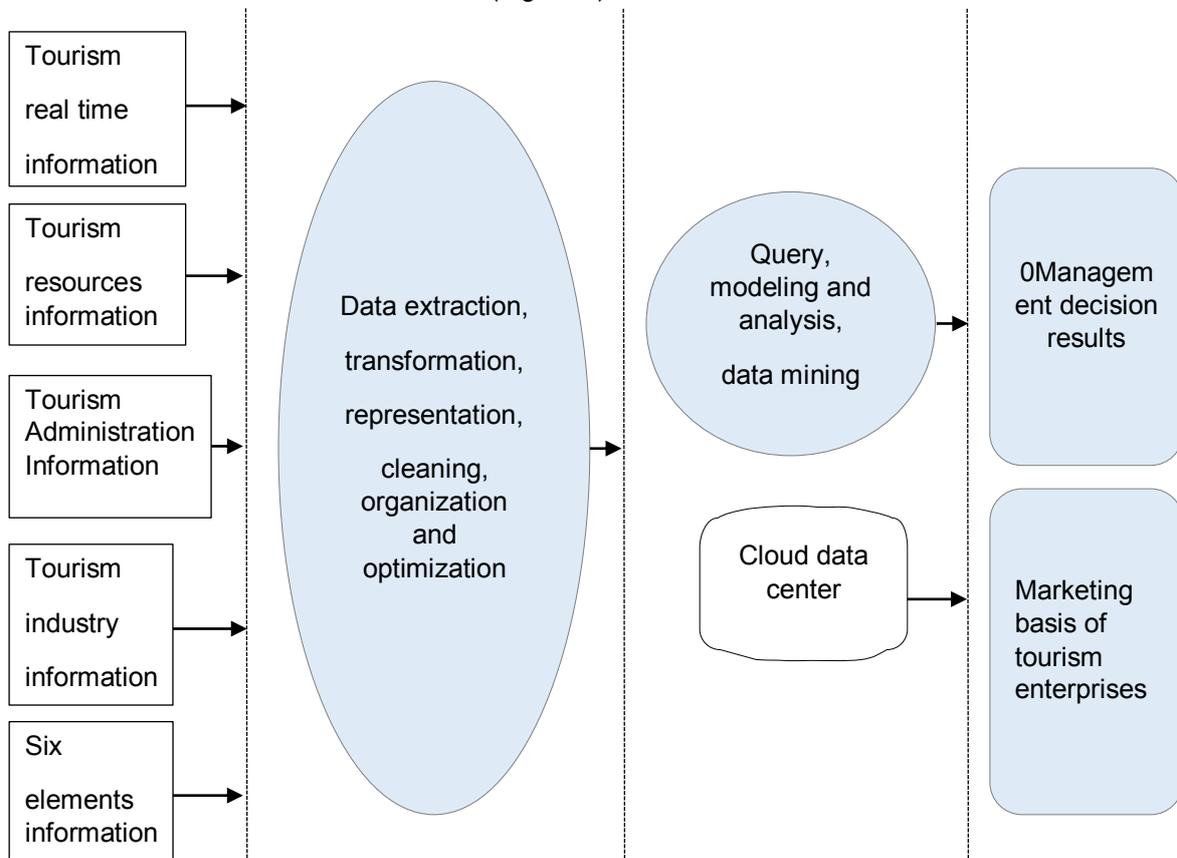


Figure 2 Tourism data collection and processing

Second, establish an early warning system for tourists' safety. Ensuring the safety of tourists is the basic work of tourist attractions. Although safety accidents during tourism are inevitable from the industry's perspective, government departments need to establish a proper safety early warning system to respond to emergencies and deal with them quickly. Moreover, do a good job in the aftermath.

Third, improve the supervision system, entering tourism company service information and employee file complaints, handling information into the supervision system, realizing real-time supervision of tourism companies, enable tourists to query tourism company information accurately,

and urging tourism companies to discover their existence improve the service level and build a platform for benign communication between government agencies, tourism enterprises, and tourists.

CONCLUSION

In short, the development of big data technology has led tourism into the intelligent era and has set off a smart revolution in the tourism industry. The tourism supervision model, business operation model, and tourist travel methods will all undergo tremendous changes in this industry revolution. In this regard, Kunming should take smart tourism as an opportunity, follow the trend of tourism development, and formulate practical and feasible measures to promote the healthy development of local tourism.

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BAFE016: **PSYCHOSOCIAL RISK AMONGST HEALTH CARE WORKERS AT TYPE D GENERAL HOSPITAL AMIDST COVID-19 PANDEMIC**

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Abstract

This study aims to give insight on the psychosocial condition of health care workers at Type D general hospitals (Jatisampurna General Hospital and Bantar Gebang General Hospital) amidst the COVID-19 pandemic. The study was conducted in May and June 2021. The study involved qualitative and quantitative methods using descriptive and analytical techniques. Besides interviews, COVID-19 virus exposure risk assessment of health care workers and Copenhagen Psychosocial Questionnaire were conducted. Convenience sampling method was used, with a total of 157 health care workers as respondents. The validity and reliability of the instrument were tested. Psychosocial risk related to COVID-19 clinical risks was analyzed using Fisher's exact test. The data were further analyzed using a Fishbone diagram-based approach. The results showed that, compared to health care workers that are not clinically exposed to COVID-19, those clinically exposed to COVID-19 had fair quality of influence at work, control over working time, illegitimate tasks, and insecurity over working dimension (p -value < 0.05).

Keywords: Psychosocial Risk, Health Care Workers, COVID-19

INTRODUCTION

By the late March 2020, the COVID-19 outbreak has spread to plethora of countries across the globe. The virus was first reported back in December 2019 as the Chinese government reported the cases in its city of Wuhan. Due to the close proximity to the mainland China, Indonesia finally fall as a victim. As the number of infections increase, Indonesia's healthcare facility is trying to ensure the equal distribution and services as well as targeting the least developed area. The government through the provincial government have transformed several community health centre (*puskesmas*) into a transitional state general hospital. The rapid spread of the virus due to the high mobility and lack of awareness have forced the government to transform even more community health centres to type D general hospitals. The process took a very concise period of time for the new hospitals to fully function let alone for the already existing class D general hospitals. Therefore, many hospitals don't meet the stricter healthcare standards imposed by the world health organization amidst the pandemic let alone equipped with sufficient health care workers, instruments, equipment, materials, as well as supporting non-medical staffs.

The lack of preparation and ill-equipped national health care system and facilities might endanger health care workers assigned as the frontline to treat the patients confirmed positive with COVID-19. Moreover, understaffed health care facilities also forced them to simultaneously multitask and consequently effect their day to day practice. Serious risks posed by intensive need for constant contact with infected patients for extended periods of time may aggravate the already existing job-related hazards. Healthcare workers are particularly vulnerable to many job-related hazards, and undergo a considerable amount of emotional pressures in relation to their jobs (Talaee et al., 2020).

Occupational health and safety issues include work-related stress, psychosocial risks, violence, and harassment (psychological harassment, bullying, or mobbing). Psychosocial risks may result in a negative impact in terms of social, human, and even financial costs. Negative outcomes on the individual level include poor health and well-being, and also problems which may deteriorate interpersonal relationships in workplace as well as family life (British Standards Institution, 2011).

Stress and burnout as the adverse effects of negligence toward psychosocial work environment may lead to further loss of motivation and work accident (Talaee et al., 2020).

As many as 83% of health workers across Indonesia have been experiencing moderate levels of physical and mental exhaustion due to the COVID-19 pandemic according to a study found by University of Indonesia Faculty of Medicine (Widjaja, Shatri, and Putranto, 2020). In this study, the business issue that is raised is the lack of psychosocial risk assessment amongst health care workers at hospitals in question. Psychosocial risks refer to the probability that work-related stressors will generate a negative impact on employees' health and safety through their perceptions and experience (British Standards Institution, 2011). Of the various types of hazards, psychosocial hazards impact the most on the mental wellbeing of health care workers, which have potential of inflicting psychological or physical harm (Okeafor and Alamina, 2018).

The research questions of this study are:

1. How is the current psychosocial condition amongst health care workers at type D general hospital amidst COVID-19 pandemic?
2. How is the COVID-19 community and clinical exposure risk amongst health care workers at type D general hospital amidst COVID-19 pandemic?
3. Are there any immediate psychosocial dimensions related to the COVID-19 clinical exposure risk amongst health care workers at type D general hospital amidst COVID-19 pandemic?
4. How should we manage psychosocial risk amongst health care worker at type D general hospital amidst COVID-19 pandemic?

The research objectives of this study are:

1. Assess the psychosocial risk amongst health care workers at type D general hospital amidst COVID-19 pandemic.
2. Investigate the COVID-19 community and clinical exposure risk amongst health care workers at type D general hospital amidst COVID-19 pandemic.
3. Ascertain immediate psychosocial risk related to the COVID-19 clinical exposure risk amongst health care workers at type D general hospital amidst COVID-19 pandemic.
4. Give appropriate approaches to overcome the psychosocial risk related to the COVID-19 clinical exposure risk amongst health care workers at type D general hospital amidst COVID-19 pandemic.

LITERATURE REVIEW

Novel Coronavirus

Coronavirus are unsegmented single-stranded that belongs to positive-strand RNA virus. The size of novel coronavirus is 60 to 140 nm in diameter. As one of the main antigenic proteins of the virus, the club-like spike protein that project from their surface is the main structure used for replication. The nucleocapsid protein encapsulates the viral genome and can be used as a diagnostic antigen (Zhou, 2020).

Infection starts when the virus penetrate the host cell, the virus particle is uncoated and the spike protein attaches to its complementary host cell receptor. After the virus attaches to the host cell, a proteolytic enzyme of the host cell cleaves and activates the receptor-attached spike macromolecule. Depending on the host cell proteolytic enzyme available, cleavage and activation enable cell entry through endocytosis or direct fusion of the viral envelope with the host membrane (Fehr and Perlman, 2015).

Signs and symptoms of infection appear after an incubation period of around 5.2 days (Li et al., 2020). Period between the onset of infection to fatality ranged from 6 to 41 days with median of 2 weeks. The most common symptoms at onset of COVID-19 illness are fatigue, fever, and cough while other symptoms range from headache, haemoptysis, sputum production, diarrhoea, dyspnoea, to lymphopenia (Wang et al., 2020). COVID-19 usually show unique signs that often include the

targeting of the lower airway as evident by upper respiratory tract symptoms like sore throat, rhinorrhoea, and sneezing (Assiri et al., 2013; Li et al., 2003). Additionally, some cases appear to exhibit an infiltrate in the upper lobe of the lung that is associated with increasing hypoxemia and dyspnoea (Phan, 2020). Besides that, patients infected with COVID-19 may develop gastrointestinal problems like diarrhoea (Assiri et al., 2013; Li et al., 2003).

The fatality rate varies depending on predisposing factors such as general health condition, age, gender, and the healthcare system available. The evidence reveals that more male patients are becoming more seriously ill or dying from the COVID-19 than female patients. The death rates were lowest for patients under the third decade. Mortality were at least five times more probable amongst patients with high blood pressure, diabetes, and heart or breathing issues (Shareen et al., 2020).

The main routes of transmission is believed happened through respiratory droplets and direct contacts, but there is also risk of faecal-oral transmission. Aerosol transmission, mother to child transmission and other routes are not confirmed yet (Zhou, 2020). Respiratory droplet is the main mode of transmission. Contact transmission refers to the transmission of pathogens through contact with fomites or pathogen carrying objects. Aerosol transmission is the moment the droplets are suspended in the air and lose water, pathogens left behind to form the core of the droplets. A child of the mother with COVID-19 was confirmed to have positive throat swabs 30 hours postnatal. This suggests that the novel coronavirus may cause neonatal infection through mother to child transmission, but more studies are necessary to confirm this mode (Zhou, 2020).

Type D General Hospital

Hospital is a health service institution that provides complete individual health services that provide inpatient, outpatient and emergency services. General Hospital is a hospital that provides health services in all fields and types of diseases. General Hospital is classified based on services, human resources, facility, infrastructure, and management. Based on the facilities and service, General Hospitals in Indonesia are classified into type A general hospital, type B general hospital, type C general hospital, and type D general hospital.

Type D hospitals are transitional hospitals because at one time they will be upgraded to type C hospitals. Type D general hospitals must have facilities and medical service capabilities of at least 2 basic specialist medical services. The criteria, facilities, and capabilities of Type D general hospital include general medical services, emergency services, basic specialist medical services, nursing and midwifery services, clinical support services and non-clinical support services.

General medical services consist of basic medical services, dental services and maternal child/family planning services.

1. Emergency services must be able to provide emergency services 24 hours and 7 days a week with the ability to conduct initial examination of emergency cases, perform resuscitation and stabilization in accordance with standards.
2. Basic Specialist Medical Services of at least 2 of 4 types of basic specialist services covering Internal Medicine, Child Health, Surgery, Obstetrics and Gynaecology.
3. Specialist Medical Support Services, namely laboratory and radiology.
4. Nursing and midwifery services consist of nursing care services and midwifery care.
5. Clinical Support Services consist of High Care Unit Care, Blood Services, Nutrition, Pharmacy, Instrument Sterilization and Medical Records.
6. Non-clinical support services consist of Laundry/Linen services, Catering/Kitchen services, Engineering and Maintenance Facilities, Waste Management, Warehouses, Ambulance, Communications, Mortuary, Fire, Medical Gas Management and Clean Water Storage.

The availability of health personnel is adjusted to the type and level of service.

1. In Basic Medical Services, there must be a minimum of 4 general practitioners and 1 dentist as permanent staff.
2. In Basic Specialist Medical Services there must be at least 1 specialist doctor out of 2 types of basic specialist services with 1 specialist doctor as permanent staff.

3. The pharmacy staff consists of at least 1 pharmacist as the head of the hospital pharmacy installation, 1 pharmacist who is on duty in outpatient and inpatient care assisted by at least 2 pharmaceutical technicians and 1 pharmaceutical production coordinator.
4. The ratio of nurses and beds is 2: 3 with the qualifications of nurses in accordance with the services in the hospital.
5. Other medical and nonmedical staff with the number and qualifications adjusted to the needs of hospital services including nutrition services, physical fitness, radiographers, medical technicians, medical records, hospital maintenance installation officers, waste management officers, mortuary officers.

Psychosocial Variables

The interaction between an individual's ideas and behaviours and their social environment is referred to as psychosocial. Psychosocial variables are divided into two categories: psychological (hostility, depression, hopelessness, etc.) and social (work conditions). At the individual level, these variables interact synergistically, as seen by social support at work, which is a result of both job conditions and social skills (Singh-Manoux, 2003).

International Labour Office (ILO) and the World Health Organization (WHO) defined psychosocial factors at work as interaction between and among work environment, job content, organisational conditions and workers' capacities, needs, culture, personal extra-job considerations that through their perceptions and experience, influence health, work performance and job satisfaction (ILO, 1986).

Psychosocial factors include internal aspects of the job and work environment such as organizational climate or culture, work roles, interpersonal relationships at work, and the design and content of tasks (variety, meaning, scope, repetitiveness). Psychosocial factors include both the extra-organizational environment and personal characteristics such as attitudes and traits that can impact the development of work-related stress (Rugulies, 2018). Work organization and organizational factors are frequently used interchangeably with psychological factors.

Features which trigger stress are known as stressors. The psychosocial factors that potentially could cause stress are known as psychosocial hazards. In the occupational safety and health discipline, a hazard is the intrinsic potential capacity or property of an agent, process or situation such as working environment, work organization or working practices with adverse organizational outcomes to cause harm or adverse health effects to a person at work. There are ten types of psychosocial hazards divided into two groups: content of work, which is related to working conditions and work organization; and context of work, which concerns on the organization of work and labour relations (ILO, 2016).

Stress is described as an unpleasant intensive state of tension in a heavily aversive, threatening, subjectively long-lasting situation whose avoidance is subjectively crucial. Work-related stress is influenced by psychosocial hazards found in labour relations, work organization, and task design, and occurs when the job demands do not fit or exceed the capabilities, needs, and resources of the worker, or when the knowledge or abilities of an individual or group do not match the expectations of the organizational culture of an enterprise (ILO, 2016). In the context of work-related stress, psychosocial stimuli originate in a social interaction within a social structure and affect the individual through his or her experience and perception. Psychosocial stimuli then operate on human which is characterized by an individual psychobiological program or a propensity to react with certain pattern. This propensity is conditioned by existing genetic factors and environmental influences. When there is misfit between environmental opportunities and demands, and individual needs, abilities, and expectations happens, individual may react with various pathogenic mechanisms. This may turn to be the precursors of disease (Kalimo, et al., 1987).

Increased heart rate, blood pressure, muscle tension, sweating, increased adrenaline production and secretion, and shallow breathing at higher frequencies are all physiological responses to stress. Fear, impatience, depression, anxiety, rage, and a lack of motivation are examples of emotional reactions. Impaired attention, narrowed perception, forgetfulness, less effective reasoning, less problem solving, and reduced learning ability are all possible cognitive effects. Reduced

productivity, increased smoking, increased drug and/or alcohol usage, making mistakes, and reporting sick are all examples of behavioral reactions (WHO, 2007).

The psychosocial work environment, as defined by Lindström et al. (1995), is a complex system that encompasses the work, the people, and their surroundings. Kompier (2003) identified seven main theoretical models of psychosocial work environment namely Socio-Technical Approach, Vitamin Model, Job Characteristics Model, Michigan Model, Demand Control Model, Effort-Reward Imbalance and Action Theoretical Approach. These important theoretical approaches are characterized in order to find the factors in work that effect psychosocial well-being.

Psychosocial risk is likelihood that psychosocial factors have hazardous influence on employees' health through their experience and perceptions and the severity of ill health that can be caused by exposure to them. Work-related psychosocial risks concern aspects of the management and design of work within its social and organizational contexts that have the potential for physical or mental harm. The process of managing psychological risks is quite similar to that of managing conventional occupational health and safety risks. (British Standards Institution, 2011). In principle, they are both based on the concept of a control cycle namely identification of hazards and assessment of risks, design and implementation of interventions and evaluation and review. There are five steps that must be observed in the psychosocial risk assessment in context of health care workers namely identifying hazards and those at risk, evaluating and prioritising risks, deciding on preventive action, taking action and documentation, and monitoring and review (European Commission Directorate-General for Employment, social affairs and inclusion, 2011).

Copenhagen Psychosocial Questionnaire

Copenhagen Psychosocial Questionnaire (COPSOQ) is an instrument for research on the assessment of psychosocial conditions and health promotion at workplaces. COPSOQ was developed under the theoretical considerations and basic principles: the questionnaire cover all fundamental aspects of the psychosocial work environment stressors as well as resources, the questionnaire should be not be based on single theory, the dimensions should be related to different analytical levels (company, department, job, individual, and individual-work interface), and the questionnaire should be generic. COPSOQ is designed for workplace psychosocial risk assessment and for organizational development by addressing psychosocial hazards to achieve safe and healthy working conditions for workers regardless of tasks, job, or any other social condition (Llorens et al., 2019). The COPSOQ III questionnaire consisted of 45 dimensions with 138 questions. The dimensions include quantitative demand, work pace, cognitive demands, emotional demands, demands for hiding emotions, influence at work, possibilities for development, variation of work, control over working time, meaning of work, predictability, recognition, role clarity, role conflicts, illegitimate tasks, quality of leadership, social support from supervisor, social support from colleagues, sense of community at work, commitment to the workplace, work engagement, job insecurity, insecurity over working conditions, quality of work, job satisfaction, work life conflict, horizontal trust, vertical trust, organizational justice, gossip and slander, conflicts and quarrels, unpleasant teasing, cyber bullying, sexual harassment, threats of violence, physical violence, bullying, self rated health, sleeping troubles, burnout, stress, somatic stress, cognitive stress, depressive symptoms, and self-efficacy. Respondents response score on Likert scales of 5 points on a 0–100 range. All scales are then calculated as average scores (Llorens et al., 2019).

CONCEPTUAL FRAMEWORK

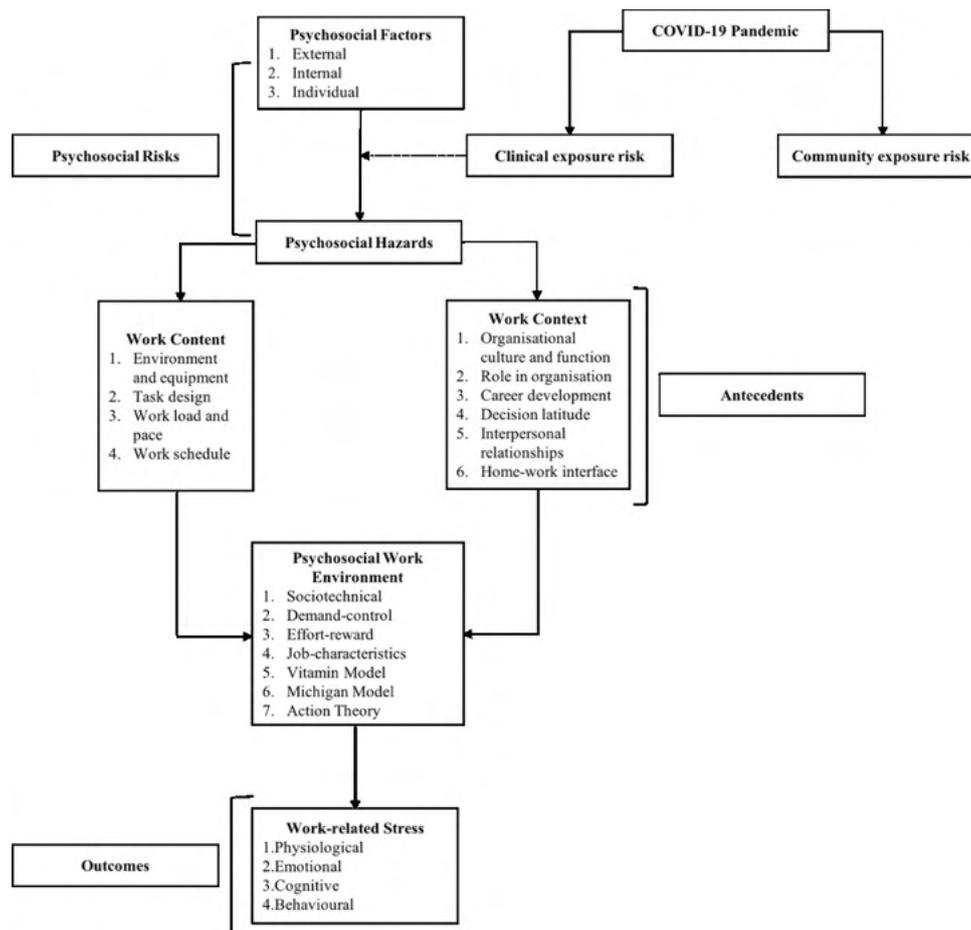
In this research, author assess the exposure and risk of COVID-19 virus infection among health care workers Type D Jatisampurna General Hospital and Type D Bantar Gebang General Hospital. Community exposure to the COVID-19 virus was assessed using the WHO COVID-19 exposure risk assessment tool. If a healthcare worker answered "yes" to having a history of staying in the same household or classroom environment with a confirmed COVID-19 patient, or having a history of traveling together in close proximity (within 1 m) with a confirmed COVID-19 patient in any mode of transportation, he or she was considered communally exposed to COVID-19 virus. Clinical (occupational) exposure to COVID-19 virus was also assessed using the WHO COVID-19 risk assessment tool. If respondents answered "yes" to performing any of the following activities on a COVID-19 patient: providing direct care to a COVID-19 patient, performing/being present when aerosol-generating procedures were performed on COVID-19 patients, and having direct contact with

the environment where a confirmed COVID-19 patient was cared for, clinical exposure to COVID-19 virus was indicated (Ashinyo et al., 2020).

The aim of this research is to assess any psychosocial factors that possess potential hazardous effects toward the psychosocial work environment. The psychosocial factors cover wide range of aspects which include internal organizational aspects, external organizational aspects, as well as individual aspect. The plausibility for psychosocial factors to cause harms towards employees and their day to day activities is known as psychosocial risks. The psychosocial hazards referred to its stress generating features. Thus, the term is interchangeable with stressor. The psychosocial hazards are classified into two categories. Content of work include environment and equipment, task design, work load and pace, and work schedule. Context of work include organizational culture and function, role in organization, career development, decision latitude, interpersonal relationships, home-work interface (Cox, 1993; Cox and Griffiths, 2005).

Risk assessment in this study is aimed to evaluate current psychosocial condition if exposed to any hazards. These hazards are referred as antecedents or precursor of imbalance which rise issues within the psychosocial work environment. The unpropitious circumstance cause by stressors in work environment could be examined through seven theoretical approaches which include sociotechnical theory, demand-control theory, effort-reward imbalance, job-characteristics theory, vitamin, Michigan, and action theory model (Kompier, 2003). This condition is further analysed its relation with COVID-19 clinical exposure as aggravating factors of possible poor or fair psychosocial domains. The final goal of risk assessment itself is to construct solution in order to prevent adverse outcome (work-related stress) that may usher to physiological, emotional, cognitive, and behavioural effects (WHO, 2007).

Figure 1: Conceptual Framework



RESEARCH METHODOLOGY

Sampling Design

The population of the research are health care worker of Type D Jatisampurna General Hospital and Type D Bantar Gebang General Hospital. The sampling method utilized is convenience sampling technique. The participants of this final project are employees of General Hospital with inclusive criteria namely medical and non-medical staff of General Hospital. The exclusive criteria are staff that are unable to attend work due to sick leave, maternity leave, urgency leave, marriage leave, or annual leave in May and June and suspended on full pay.

The total number of employees from both hospitals are 338. Due to employees taking leave during May and June, only 327 employees met the inclusive criteria. The number of samples is determined using the Isaac and Michael technique (Sugiyono, 2015). The number of samples obtained is 177 samples.

Research Procedure

This research was conducted in May and June 2021 in the area of Type D Jatisampurna General Hospital and Type D Bantar Gebang General Hospital. This study uses mixed qualitative and quantitative methods using both descriptive and analytical technique. Descriptive technique is used to disclose data on sociodemographic and initial data collection on each variables. Analytical technique look at the relationship between the variables studied. The two main variables are COVID-19 exposure risk and psychosocial dimensions.

In this study, COVID-19 risk assessment of health care workers is used to determine the exposure of healthcare workers to COVID-19 in the healthcare facility they are working in and Copenhagen Psychosocial Questionnaire used to assess the psychosocial dimension related with business issue. The results are then tested its validity and reliability. Validity is tested using bivariate Pearson. Reliability is tested using Cronbach's analysis. Psychosocial condition is analysed by finding the gap between mean condition in this company and mean reference. The gap is used to determine which domain needs immediate intervention and further risk management based on three categories: good, fair, poor.

The COPSOQ III dimensions which are considered fair and poor are further analysed its significant association with clinical (occupational) exposure risks of healthcare workers. The data were analysed using Fisher's exact test. The questionnaire data and the interview results were further analysed using Fishbone diagram. Primary data used in this study are direct data obtained from completing the COVID-19 Risk Assessment of Health Care Workers designed by WHO and Copenhagen Psychosocial Questionnaire III (COPSOQ III) and from open-ended (unstructured) interview concerning the psychosocial hazards. Secondary data include textbooks, journals, company annual reports, articles, case reports, government departments, organizational records, and data that was originally collected for other research purposes that can support and supplement primary data.

The questionnaire technique was used by author to collect data that explained and analysed the employee's risk of exposure toward COVID-19 and psychosocial risks of the employees of Type D Jatisampurna General Hospital and Type D Bantar Gebang General Hospital. Author uses COVID-19 Risk Assessment of Health Care Workers designed by WHO. The questionnaire includes health care worker information (sociodemographic data), community exposure risk, and clinical (occupational) exposure risk.

Author uses a list of questions in COPSOQ III taken from the COPSOQ International organization and then author translates into Bahasa Indonesia. The questionnaire consisted of 45 dimensions with 138 questions. Quantitative demands The dimensions include quantitative demand, work pace, cognitive demands, emotional demands, demands for hiding emotions, influence at work, possibilities for development, variation of work, control over working time, meaning of work, predictability, recognition, role clarity, role conflicts, illegitimate tasks, quality of leadership, social support from supervisor, social support from colleagues, sense of community at work, commitment to the workplace, work engagement, job insecurity, insecurity over working conditions, quality of work, job satisfaction, work life conflict, horizontal trust, vertical trust, organizational justice, gossip and

slander, conflicts and quarrels, unpleasant teasing, cyber bullying, sexual harassment, threats of violence, physical violence, bullying, self rated health, sleeping troubles, burnout, stress, somatic stress, cognitive stress, depressive symptoms, and self-efficacy. Based on COPSOQ III guidelines, Likert scale is used in most answers. Likert scale show the attitudes, opinions, and perceptions of respondents.

DATA ANALYSIS

Respondent Profile

Respondents of this research are the employees of Type D Jatisampurna General Hospital and Type D Bantar Gebang General Hospital, Bekasi, West Java. The data is taken during the month of May and June 2021. The overall population of this research is 338 employees. Based on inclusive and exclusive criteria set by author, 11 employees were disqualified as they were taking leaves during this month. These employees are unable to attend work due to sick leave, maternity leave, urgency leave, marriage leave, or annual leave in May and June 2021. However, the research only able to collect 157 respondents. The data collection needed to be halted due to the rise of COVID-19 cases in Indonesia in June 2021 due to higher population mobility after Eid holiday. The rise of COVID-19 cases and employees confirmed positive with COVID-19 oblige most of the employees to go through self isolation and work from home. Consequently, the attendance level of the employee is low.

Based on the sociodemographic data collected, the respondents are identified based on their gender, age group, and job type. The respondents are consisted of 92 female employees counting for 59% of the total respondents and 65 male employees counting 41% of the total respondents.

Based on the age group 83 employees fall into 20-29 years old group accounting for 53% of the total respondents, 45 employees fall into 30-39 years old group counting for 29% of the total respondents, 21 employees fall into 40-49 years old group counting for 13% of the total respondents, and 8 employees fall into more than equal to 50 years old group counting for 5% of the total respondents.

The respondents based on their job type distribution consisted of 13 medical doctors, 20 nurses, 16 midwife, 8 dentists, 2 dental assistants, 4 pharmacists, 6 pharmaceutical technicians, 2 physiotherapists, 11 laboratory analysts, 6 radiology technicians, 4 dietitians, 9 medical supports, 2 ambulance drivers, 17 cleaning services, 11 receptionists, 9 securities, and 17 management staffs.

COVID-19 Exposure Risk

COVID-19 risk assessment of health care workers reveals the community and clinical (occupational) risk of health care workers. The respondents are initially categorized as medical and nonmedical staffs. Medical staff include medical doctors, nurses, midwife, dentists, dental assistants, pharmacists, pharmaceutical technicians, physiotherapists, laboratory analysts, radiology technicians, and dietitians. While nonmedical staff include medical supports, ambulance drivers, cleaning services, receptionists, securities, and management staffs. Based on clinical (occupational) exposure, 88 employees were considered clinically exposed while 69 employees were not considered clinically exposed. The clinically exposed group consisted of 70 medical staffs (80%) and 18 nonmedical staffs (20%). The clinically not exposed group consisted of 49 nonmedical staffs (71%) and 20 medical staffs (29%).

Based on community exposure, 58 employees were considered communally exposed while 99 employees were not considered communally exposed. The communally exposed group consisted of 51 medical staffs (80%) and 7 nonmedical staffs (20%). The communally not exposed group consisted of 60 nonmedical staffs (71%) and 39 medical staffs (29%).

Instrument Test

Validity test is used to measure the validity or validity of a questionnaire. In this study using the Pearson product moment validity principle. Validity test of Pearson product moment using the principle of correlating between each item questionnaire score with the total score of respondents' answers. The basis for taking the validity test of a person is comparing the r count with r table. If the

value of $r_{count} > r_{table}$, the item is valid. If the calculated value $< r_{table}$, the item is invalid. Seeing the value of significance. In validating the research instrument, the authors used SPSS for processing data with standard guidelines of 5% or 0.05 with Bivariate Pearson correlation. If the significance value is < 0.05 then the item is valid. If the significance value is > 0.05 then the item is invalid. Based on the results of the validity test, there are 7 items in this study that were not valid. These items fall under the demand for hiding emotion, variation of work, and bullying dimension. The rest of the items were greater than the r_{table} and the significance value was less than 0.05.

The reliability test assess if an instrument when used several times to measure the same object, will produce the same data (Sugiyono, 2015). In this study Cronbach alpha is used for reliability test. The basis of taking alpha reliability testing, according to Sujerweni (2014), is a reliable questionnaire if the Cronbach alpha value is > 0.6 . Therefore in this study the authors used the alpha standard > 0.6 . The reliability test results in 3 dimensions that have an alpha value of less than 0.6 and there are 9 dimensions that can not be measured for reliability because they only have 1 question item. The unreliable dimensions include demand for hiding emotion, variation of work, and bullying. The 9 dimensions include gossip and slander, conflicts and quarrels, unpleasant teasing, cyber bullying, sexual harassment, threats of violence, physical violence, and illegitimate task. While the dimensions that have an alpha value > 0.6 are quantitative demand, work pace, cognitive demands, emotional demands, influence at work, possibilities for development, meaning of work, predictability, recognition, role clarity, quality of leadership, social support from supervisor, social support from colleagues, sense of community at work, insecurity over employment, insecurity over working condition, quality of work, job satisfaction, work life conflicts, organizational justice, sleeping troubles, burnout, stress, somatic stress, cognitive stress, depressive symptoms, and self efficacy.

Psychosocial Condition

According to WHO (1984), psychosocial factors in the workplace include interactions in the work environment, organizational capacity, work environment conditions, organizational culture, employee personality, employee performance, job satisfaction, and employee health. The author tries to see the psychosocial condition of Type D Jatisampurna General Hospital and Type D Bantar Gebang General Hospital indicates employees by analysing data obtained from 157 respondents, then calculating the average in each dimension. The average score will be compared with the average reference from the company and seen a gap (differential). The average score obtained is used to see the level of respondents' contribution to this aspect of the study. Then the authors categorize psychosocial conditions based on the value of the gap (differential) among others as follows.

Table 1: Gap Categories

Range	Interpretation	Intervention
$>0.5-1.5$	Good	Maintenance
1.6-3.0	Fair	Improvement
3.1-4.5	Poor	Correction

Table 2: Psychosocial Condition

Dimension	Mean reference	Mean	Gap
Work pace	5	3.28	1.72
Influence at work	5	2.98	2.02
Control over working time	5	2.68	2.32
Role conflicts	1	3.31	2.31
Illegitimate tasks	1	2.93	1.93
Job insecurity	1	2.92	1.92
Insecurity over working conditions	1	2.92	1.92
Work life conflict	1	2.65	1.65

From the calculation of the average dimensions of COPSOQ III, it can be inferred that the hospitals' psychosocial condition is good because of an average difference of 1.08. However, there are several dimensions that need to be intervened because the gap (differential) that are considered fair, namely above the scale of 1.6. These dimensions are work pace, influence at work, control over working time, role conflicts, illegitimate tasks, job insecurity, insecurity over working conditions, and

work life conflict. The rest of dimensions categorized in good condition are quantitative demand, cognitive demands, emotional demands, influence at work, possibilities for development, meaning of work, predictability, recognition, role clarity, quality of leadership, social support from supervisor, social support from colleagues, sense of community at work, commitment to the workplace, work engagement, quality of work, job satisfaction, horizontal trust, vertical trust, organizational justice, gossip and slander, conflicts and quarrels, unpleasant teasing, cyber bullying, sexual harassment, threats of violence, physical violence, bullying, self rated health, sleeping troubles, burnout, stress, somatic stress, cognitive stress, depressive symptoms, and self-efficacy.

Psychosocial Condition Related to COVID-19 Clinical Exposure Risk

Fisher's exact test of independence is used when there are two nominal variables and we want to see whether the proportions of one variable are different depending on the value of the other variable. The null hypothesis for the test is that there is no relationship between the rows and columns of the 2 x 2 table, such that a subject's likelihood of being in a specific row is unaffected by its position in a particular column. The null hypothesis can be viewed as the chance of a given outcome not being impacted by the study group. The test assesses whether the two study groups differ in proportions with each outcome (Siegel,1997; Freeman and Julious, 2007). The hypothesis of Fisher's exact test are as follows:

1. H_0 : Both clinically exposed and not clinically exposed health care workers show similar proportion in regard to their quality of psychosocial dimension.
2. H_1 : A higher proportion of clinically exposed health care workers show fair and poor psychosocial dimensions compared to the not clinically exposed health care workers.

The basis of decision making of Fisher's exact test are as follows:

1. If the statistical significance < 0.05, the null hypothesis is rejected.
2. If the statistical significance > 0.05, the null hypothesis is accepted.

Table 3: Fisher's Exact Test Significance Level

Category	Dimension	p-Value	Association
Clinical exposure risk	Work pace	0.318	Independent
	Influence at work	0.022	Dependent
	Control over working time	0.014	Dependent
	Role conflicts	0.093	Independent
	Illegitimate tasks	0.026	Dependent
	Job insecurity	0.182	Independent
	Insecurity over working conditions	0.023	Dependent
	Work life conflict	0.111	Independent

Based on the Fisher's exact test performed above, only four dimensions show dependency to the COVID-19 clinical exposure risks. These dimensions consisted of influence at work, control over working time, illegitimate tasks, and insecurity over working conditions. Each dimension shows a level of statistical significance (p-value) lower than 0.05. Based on this measurement, we could infer that a higher proportion of COVID-19 clinically exposed health care workers show fair and poor psychosocial condition on influence at work, control over working time, illegitimate tasks, and insecurity over working conditions dimension compared to the COVID-19 not clinically exposed health care workers.

CONCLUSION AND DISCUSSION

DISCUSSION

Based on the Copenhagen psychosocial questionnaire III, the respondents from Type D Jatisampurna General Hospital and Type D Bantar Gebang General Hospital show an average total gap of 1.08. This result indicate a generally good psychosocial condition amongst the health care workers. However, amongst 45 dimensions measured in the questionnaire, 8 dimensions show a rather fair quality. The measurement results in gap higher than 1.6 which indicate fair quality of the dimension. The result infers that the following dimensions namely work pace, influence at work, control over working time, role conflicts, illegitimate tasks, job insecurity, insecurity over working

conditions, and work life conflict need in-depth assessment in terms of their problem root causes as well as further intervention in order to improve its quality. Amongst these eight dimensions, the author further analyse the dependency of the current conditions with the COVID-19 clinical exposure risk of the health care workers. The Fisher's exact test found that four dimensions are dependent on the variable of clinical exposure risk of the health care workers. These dimensions include influence at work, control over working time, illegitimate tasks, and insecurity over working conditions. A higher proportion of clinically exposed health care workers show fair and poor influence at work, control over working time, illegitimate tasks, and insecurity over working conditions dimensions compared to the not clinically exposed health care workers. The study proven that, lack of regulation is shown in fair quality of influence at work, control over working time, and illegitimate tasks. While personality enhancement is shown in fair quality of insecurity over working conditions. If these variables are neglected, it might produce adverse effect such as work-related stress that might further influence productivity and the hospital goals.

The fair quality influence at work with gap of 2.02 at Type D Jatisampurna General Hospital and Type D Bantar Gebang General Hospital indicates the ability of individual to in affecting their co-workers to listen to them. Influence dimension is related to context of work such as organisational culture and function, role in organisation, career development, decision latitude, and interpersonal relationships (Cox, et al., 2000). In this study, health care workers Type D Jatisampurna General Hospital and Type D Bantar Gebang General Hospital are highly dependable on consensus amongst team members (peers) and *Dokter Penanggungjawab Pelayanan (DPJP)*. Some health care workers like nurses and midwife complain that *Dokter Penanggungjawab Pelayanan (DPJP)* is hardly encountered. Hence, it required times for decision of treatment plans to be made. This problem also extends to diagnostic unit such as radiology unit and laboratory unit. Collaboration between clinical and diagnostic unit in order to make proper diagnosis also increase dependency. Moreover, COVID-19 examination would require a more holistic approach in order to make proper diagnosis as well as though out the patient treatment. Another reason being that the unit financing is highly dependable on the management level. As the hospitals are newly established, its daily operation greatly depend on the hospital management and local government funding as it hasn't been allowed to collect healthcare tariff. Consequently, employees have to consult with the local government through the management in terms of materials and equipment procurement. This procedure also extends to the human resource practice. Based on the action theoretical approach, increase on regulation and control (*handlungsspielraum*) are the crucial variables in psychosocial working environment (Semmer, 1984; Ulich, 1972). Thus, intervention is needed at organization level as well as at higher government level in terms of creating more degree of control and regulation upon day-to-day task.

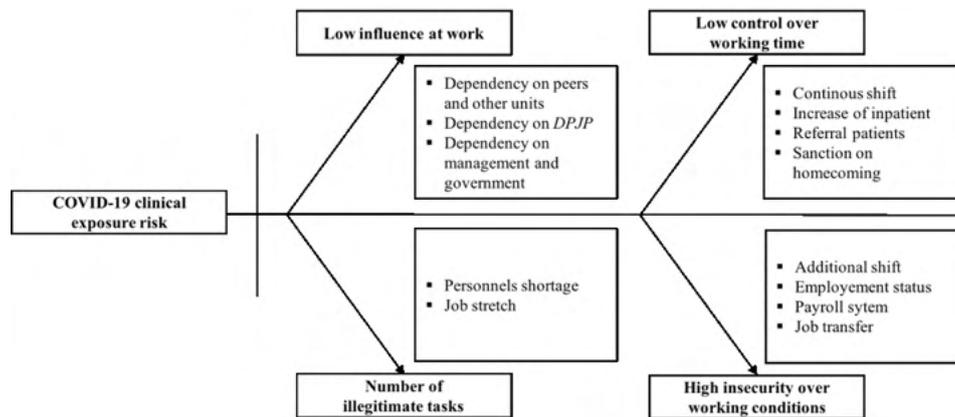
The fair quality control over working time with gap of 2.32 at Type D Jatisampurna General Hospital and Type D Bantar Gebang General Hospital indicates a considerably low flexibility to take rest, vacation, chat with co-workers, take leave permits, and overtime. Control over working time dimension is related to context of work such which is decision latitude and content of work such as workload, work pace, and work schedule (Cox, et al., 2000). The job demands–control model is the most influential stress model for now. The model was developed by Robert Karasek in 1979. The model defines two independent dimensions of stress risks: psychological demands and decision latitude. Decision latitude is also labelled as job control (Schabracq and Cooper, 2003). Based on demand-control theory, control over working time would be described by decision latitude while flexibility to take rest, vacation, chat with co-workers, take leave permits, and overtime describe the psychological demands. A higher degree of balance between regular task, social engagement, and personal needs fulfilment might decrease the potential of stress and depression (Bernstein and Kornbluh, 2005). In this study, a increasing number of inpatient care units due to its specific (short term) focus goal as first referral for COVID-19 treatment and diagnostics at Type D Jatisampurna General Hospital and Type D Bantar Gebang General Hospital have been considered as the factors affecting the working schedule. Moreover, advance health care providers are not ready since there are still shortage of medical staffs such as nurses, general practitioners, as well as specialist practitioners. This condition in turn would increase the work amount of each allied-health professionals and other medical supporting units enhancing their work intensity. The prolong adverse effects would be that there would be lack of time to rest, take vacation, take leave, or even socialize with co-workers. The condition at Type D Jatisampurna General Hospital and Type D Bantar Gebang General Hospital proven by some medical staffs that are required to take double continuoshift a day (morning and afternoon or afternoon and evening). Moreover, sudden increase in burden and demand of work due to the COVID-19 pandemic would worsen the challenge ahead. Thus, there would be

higher potential of burnout and psychological stress. During this pandemic, the government also imposed heavy sanction for civil servants who travel for homecoming during Eid festivities. The sanctions range from reprimand, demotion, delayed salary, and even lay off.

The fair quality of illegitimate tasks with GAP of 1.93 at Type D Jatisampurna General Hospital and Type D Bantar Gebang General Hospital indicates that employees are given tasks which are not related to their job-desk and role in the organization. Illegitimate task dimension is related to context of work such which is role in organisation and content of work which is task design (Cox, et al., 2000). Warr (1987) stated that some job characteristics affect mental well-being in a curvilinear way, similar to the way vitamin A and D may affect health. Increase opportunity for skill use, externally generated goals (job demands), and work variety as results of illegitimate tasks may encourage employees to hone their skills and knowledge in the other fields of work. This may in turn increase cognitive demand in terms of skill utilization which incur positive affects toward individual productivity. Subsequently, it will also boost organizational productivity amidst employee shortage. Nevertheless, too much demands on specifically jobs which are not in accordance with the initial requirements may burden the employees and add risk of stress and depression (Ginting et al., 2020). This situation may generate backlash such as diminished motivation and productivity. In this study, employees at Type D Jatisampurna General Hospital and Type D Bantar Gebang General Hospital are often given tasks which are not related to their initial job-desks. For example midwife are given task to perform the outpatient treatment, cleaning services are often tasked for patient transportation, and dental assistant were seconded for COVID-19 vaccination program. This issue is the result of medical staff shortage due to the newly established status of the hospitals which are still in hiring process. The other reason being that there is significant increase of patient due to the pandemic. As of June 2021, numbers of nurses and doctors are still in high demand. The other being mortician. However, people are still hesitant to apply for job. Moreover, since the hospitals are state owned, people are required to follow complicated application bureaucracy. Thus, we could infer that the root cause of this problem stems out from the organizational and cultural aspect of state owned institution compared to private establishment in terms of job recruitment.

The fair quality of insecurity over working conditions with gap of 1.92 at Type D Jatisampurna General Hospital and Type D Bantar Gebang General Hospital indicates that high anxiety of employees in terms of their task, salary, position, work schedule, and future prospects. The German medical sociologist Johannes Siegrist and his colleagues were influenced by the concept of lack of reciprocity from equity theory. Effort reward imbalance (ERI) model's founding point is that effort at work is spent as part of a socially organized exchange process, in which this effort is supposed to be compensated by equitable rewards (Schabracq and Cooper, 2003). Prior to the COVID-19 crisis, Indonesia was able to maintain consistent economic growth, recently qualifying the country to reach upper middle income status. The COVID-19 pandemic-induced economic crisis has affected the labour force in Indonesia. A number of workers have been furloughed and even laid off. Although, health care workers are in high demand, further change might happen regarding their salary and work schedule. In the study, most of new employees at Type D Jatisampurna General Hospital and Type D Bantar Gebang General Hospital fall under the category of contract employees (*tenaga kerja kontrak*), honorary employees, and *tenaga APBD* (regional revenue and expenditure budget employees). These types of employees are prone for mutation and lay off. Other complain that is prevalent amongst these types of employees is they often experience late payment of salary. Their salary often given approximately 1 to 3 weeks late. The other type employee being the candidate for civil servants (*calon pegawai negeri sipil*). Their problem is mostly the bureaucracy to obtain the employment registration. Amidst the government burden to pay the employees, holiday allowance for senior civil servants have been cancelled. Due to the high risk of new cases, medical staff often required to do double shift. Thus, worktime often bleeds to the next shift without any break. The shortage of staff also increase the likelihood of employees to go through job transfer which may not align with their competency and initial working environment. Most of employees are seconded to help the core medical staff in management of the pandemic such diagnostics, treatment, as well as government vaccination program. This requirement may rise to the insecurity over job transfer. Job transfer require efforts in terms of adaptability of the employees. Not only in terms of job requirements but also change in work schedule and shift rotation.

Figure 2: Reversed Fishbone Diagram



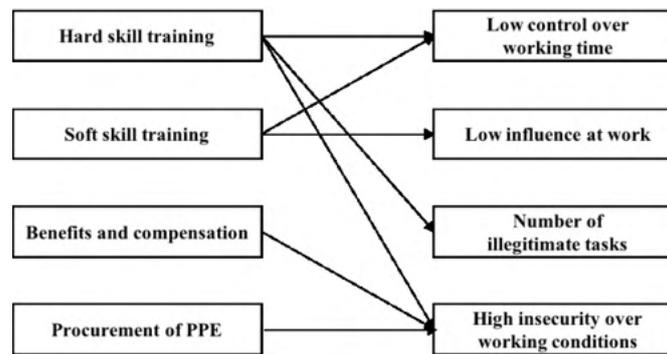
In conclusion, proportion of health care workers with clinical exposure risks to COVID-19 show fair influence at work, control over working time, illegitimate tasks, and insecurity over working conditions dimensions compared to the group of health care workers without clinical exposure risks to COVID-19. The open interview also reveals the full effects of the COVID-19 occupational exposure risks on the psychosocial factors. Increasing number of inpatient and referrals, additional and continuous shift, personnel shortage, employment benefits, dependency amongst healthcare worker, and extra tasks deemed as full effects of COVID-19 exposure risk on the quality of previously dissertated psychosocial dimensions.

The next step in psychosocial risk assessment is deciding on the preventive measures. Psychosocial risk assessment aims not just to understand the possible hazardous factor but also constructing the suitable measures to prevent prolong exposure of these stressors and minimizing the adverse effects in the future to come. These measures are expected to eliminate the risks of any psychosocial factor in work environment to become possible stressors that could create further tension on the employees' physiological, emotional, cognitive, and behavioural states.

Initial and continuous training is given as human resource practice that can boost one's efficacy and efficiency in work. Hard skill training for example is chosen improve efficacy of work in order to cope with the job stretch and personnel shortage that could cause increasing illegitimate tasks as well as everchanging task that could cause insecurity over working condition. Efficacy in task design also needed in order to eliminate insecurity over working conditions in terms of everchanging task. Efficiency of work is aimed at enabling employee to gain better control over their working time. Soft skill training is chosen to increase time-related autonomy as to better time control and creation of degree of freedom, cooperation and communication, and social support that would benefit employees in terms of influence at work and their adaptability amidst likelihood of job transfer.

Policy maker is also recommended to update the working environment legislation to match the needs of current COVID-19 pandemic. Policy regarding benefits and compensation is expected to raise the productivity and motivation of health care workers working on the frontline battling against the pandemic. This will in turn eliminate the insecurity over working conditions in terms of payroll system and job prospects. The procurement of adequate personal protective equipment is also needed to ensure safety amongst the clinically exposed individuals that are mostly stationed to perform COVID-19 treatment related tasks.

Figure 3: Business Solution Diagram



CONCLUSION

For the COVID-19 exposure risks the results are as follows: clinically exposed group consisted of 70 medical staffs (80%) and 18 nonmedical staffs (20%); clinically not exposed group consisted of 49 nonmedical staffs (71%) and 20 medical staffs (29%); communally exposed group consisted of 51 medical staffs (80%) and 7 nonmedical staffs (20%); communally not exposed group consisted of 60 nonmedical staffs (71%) and 39 medical staffs (29%). Several dimensions need to be intervened because the gap (differential) that are considered fair, namely above the scale of 1.6. These dimensions are work pace, influence at work, control over working time, role conflicts, illegitimate tasks, job insecurity, insecurity over working conditions, and work life conflict. A higher proportion of COVID-19 clinically exposed health care workers show fair and poor psychosocial influence at work, control over working time, illegitimate tasks, and insecurity over working conditions dimension compared to the COVID-19 not clinically exposed health care workers (p -value < 0.05).

This study certainly has limitations in its implementation. Some of these limitations are research is based on single self-report survey instrument, only examines employees of Type D Jatisampurna General Hospital and Type D Bantar Gebang General Hospital, utilizes risk assessment and management of exposure of health care workers in the context of COVID-19 as interim guidance to determine the clinical (occupational) and community exposure risk amongst healthcare workers to COVID-19, utilize Copenhagen Psychosocial Questionnaire (COPSOQ) to measure psychosocial condition, and utilize open-ended interview on content of work and context of work to understand the immediate psychosocial hazards as potential full effects of current COVID-19 pandemic amongst health care workers.

Business solution implementation focus on improving the work design and and changing behaviours amongst health care workers. To improve the behaviour amongst health care workers soft skill training is required. This could be implemented through soft sill training. While as to improve the work design through adapting its human resources amidst the challenging issue of COVID-19 pandemic, author suggested hard skill training in corporation with benefits for health care workers. Hard skill are important because they increase efficacy and efficiency and subsequently improve productivity. HardThe local government through its health department also should consider appropriate flexible benefits and compensation for healthcare workers both medical and non-medical that have been putting their lives at stake amidst combating the pandemic. Health care workers must also be equipped with adequate personal protective equipment.

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BAFE018:
**PERSUASION THROUGH ROBOT PERSONALITY: EXPLORING
FACTORS THAT INFLUENCE CHARITY PERSUASION IN HUMAN
ROBOT INTERACTION**

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Abstract

Social robots have seen a rise in adaption over the past decade. Due to health risks, it is predicted that this adaption will increase post pandemic. Prior studies have examined using social robots in hospitality, medical and education (Flandorfer, 2012; Valentí Soler et al., 2015). Technology Acceptance Model (TAM) is widely used to predict how consumers will adopt the technology (Davis, 1989). Researchers have also suggested that the social robot's personality type could influence the acceptance of social robots (Robert, 2018). However, there is limited empirical evidence that demonstrates how the social robot's personality can shape its ability to raise donations. This conceptual paper will fulfil this research gap and propose how the social robot can drive donation intentions. The PAMSR model proposes that "perceived ease of use", "perceived usefulness" and "reactance" are primary drivers of "attitude towards social robot". "Empathy", "trust", "likability", and "perceived expertise of a social robot" can influence the "reactance to the persuasion attempt". And finally, it is predicted that "attitude towards social robot" and "reactance to the persuasion attempt" will influence donation intentions. This paper provides impactful insights to organizations that want to raise funds using social robots post pandemic. It identifies the drivers of persuasion for social robots and how their personality can shape donation intentions. These insights will equip future researchers and robotic engineers to develop more persuasive social robot.

Keywords: Charity, Social robot, Persuasion, Personality, Donations

BAFE019:
**MALAYSIAN MANUFACTURING SMALL AND MEDIUM
ENTERPRISES (SMEs) READINESS TOWARDS FOURTH INDUSTRY
REVOLUTION (IR4.0)**

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Abstract

The Fourth Industrial Revolution (IR4.0) is today's term for the next step of evolution. It involves using advanced digitization, advanced manufacturing technology, and efficient resource utilization to infuse higher value-added manufacturing. The continuing trend towards digitization enables approaches related to the vision of IR4.0 and Smart Factory. In a global market that is becoming increasingly competitive, the manufacturing industry must focus on product quality, productivity, and sustainability. Considering technological advancements, countries and manufacturing companies that embrace IR4.0 technology and practices first will have a competitive advantage over their global competitors. IR4.0's transformation of the manufacturing industry is also in line with the United Nations' 17 Sustainable Development Goals (SDGs) adopted in September 2015, especially Goals #9 (Industry, Innovation and Infrastructure) and #12 (Responsible Consumption and Production). According to a World Economic Forum (WEF) report, only 25 countries are well-positioned to benefit from IR4.0, with Malaysia among them. Therefore, Malaysia, as a trading nation must constantly strive to expand the market for the goods it produces and the adoption of IR4.0 will transform the manufacturing industry to be more competitive. It's worth mentioning that SMEs dominate the Malaysian's manufacturing sector, accounting for 98.5 percent of all businesses. Therefore, SMEs readiness towards IR4.0 is vital as it improves productivity and profitability, enhances organizational, management, and production capabilities, and enables better quality monitoring. Therefore, the main objective of this study is to assess the level of readiness of Malaysian manufacturing SMEs towards IR4.0.

Keywords: Fourth Industrial Revolution (IR4.0), Digitalization, Smart Factory, Sustainable Development Goals (SDGs), World Economic Forum (WEF), Small and Medium Enterprises (SMEs).

INTRODUCTION

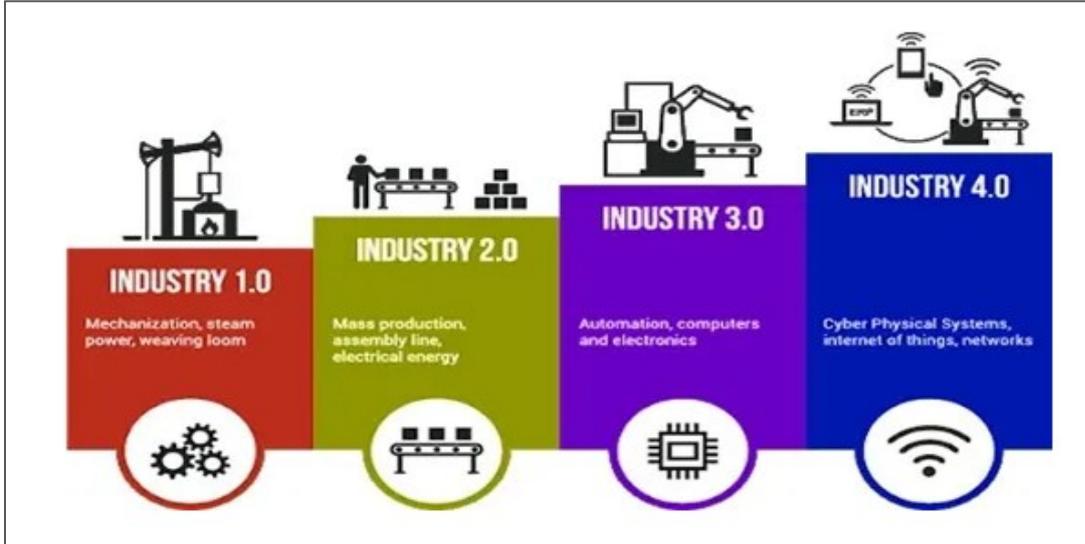
The year 2020 was a difficult and unforgettable for people around the world due to Coronavirus (Covid-19) pandemic. The world has changed dramatically in just a few months with the spread of the Covid-19. This pandemic has changed and ruined human life as well as the global economy. Despite this turmoil, globally people learned to adapt to a new normal life and tend to be exposed to new ways of surviving (Anne L.Roggeveen, 2020). For example, virtual networking has aided people in getting on with their lives through online purchasing, online learning, online banking, online medical support, online conference meetings, online social media, and online marketing. Even the QR codes (Quick Response codes) revolution became turbocharged after the outbreak of Covid-19 pandemic (David Silverberg, 2021). Perhaps, without the advancement of technology we have now, it would become a catastrophe for humans to survive. In the National-4IR Policy, Malaysia's 8th Prime Minister, Tan Sri Muhyiddin Yassin, stated that these technologies have aided in the global fight against the Covid-19 epidemic (Unit, 2021). This indicates that the existence of new technologies will continue to benefit and build a better future for human beings. In the same way, businesses, manufacturing, services, and industries continue to grow and move towards the era of digitalization (Thames & Schaefer, 2017). Particularly in the manufacturing industry, digitalization adaptation has become part of strategies to boost productivity, create flexibility and improve the quality of products and services (Kagermann et al., 2013). AI (Artificial Intelligence), IoT (Internet of Things), Cloud Computing, Big Data Analytics, Augmented Reality, Autonomous Robots, and Cyber Security are the

key elements in the Fourth Industrial Revolution (IR4.0) and have recently become buzzwords in the manufacturing industry (Manavalan & Jayakrishna, 2019). On the other hand, the IR4.0 is a trending topic among academicians and practitioners (Chiarello et al., 2018; Frank et al., 2019; Sony & Naik, 2019a). It is expected that IR 4.0 technology would aid in the establishment and implementation of smart manufacturing operational, quality, and safety standards (Deloitte, 2015). In October 2018, the Malaysian government launched the national blueprint on IR4.0, (Industry4WRD) demonstrating that the government is taking steps to raise awareness about the importance of digitalization in the manufacturing industry, particularly SMEs (Small and Medium Enterprises). In February 2021, the Malaysian Economic Planning Unit (EPU) has announced the National 4IR Policy and will be supported by the Malaysia Digital Economy Blueprint (Unit, 2021). The Policy and the Blueprint will serve as reference and guideline for the people to leverage the potential of 4IR. A governance structure has also been established, led by the National Digital Economy and 4IR Council, to drive and assure successful implementation of initiatives that span multiple ministries and agencies. Although there are two versions of the national policy on IR4.0, both emphasize digitalization and aim to improve readiness to harness the 4IR's potential.

Fourth Industrial Revolution (IR4.0)

Industrial Revolution is the process of transitioning from an agrarian and handicraft economy to one dominated by industry and machine production in modern history. This revolution began in the 18th century in Britain and extended throughout the world from there. The transition to new manufacturing processes using water and steam, which began around 1760, was known as the first Industrial Revolution (Kagermann et al., 2013). It aided in the production of a greater variety of items and improved the level of living for individuals. Industrialization had a significant impact on the textile sector, as well as on transportation. The second Industrial Revolution began around 1870. Historians refer to this as "The Technological Revolution," which took place primarily in the United Kingdom, Germany, and America. New technological systems were created during this time, the most notable of which was superior electrical technology, which allowed for increased production and more sophisticated machinery (Rubmann et al., 2015). The Third Industrial Revolution began around 1970, with the introduction of electronics and IT (Information Technology) to increase production automation. Internet availability, connectivity, and renewable energy have all helped manufacturing and automation improve significantly. More automated systems, such as Programmable Logic Controllers (PLC), were introduced to the manufacturing line in Industry 3.0 to perform human functions (Davies, 2015). Despite the presence of automated systems, human input and intervention were still required. The Fourth Industrial Revolution (IR4.0) originating from Germany in 2011, ushers in a new era of intelligent machines, storage systems, and manufacturing facilities that can communicate, trigger operations, and control one another without the need for human participation (Yin et al., 2018). IR4.0 has been widely debated in recent years, and it has become a hotspot for most global companies, including the information industry. IR4.0 is a new industrial revolution that will have a significant impact on global industry (Zhou et al., 2016). The following are some of the key aspects of IR4.0. (1) Cyber-physical system is the mechanical device that is run by computer-based algorithms, (2) The Internet of things (IoT) is an interconnected networks of machine devices and vehicles embedded with computerized sensing, scanning, and monitoring capabilities, (3) Cloud computing is an offsite network hosting and data backup and (4) Cognitive computing is a technological platform that employ artificial intelligence (Zhou et al., 2016). The objectives of IR4.0 are to provide IT enabled mass customization of manufactured items, as well as autonomous and flexible production chain adaption, track parts and products, enable communication among parts, products, and machines, apply human-machine interaction (HMI) paradigms, achieve IoT enabled production optimization in smart factories, and provide new types of services and business models of interaction in the value chain (Masood & Sonntag, 2020). The IR4.0 initiative clearly aims to create smart factories where manufacturing technologies are improved and transformed by CPS, IoT, and cloud computing (Zhong et al., 2017). Following is an overview of Industrial Revolutions (Figure 1).

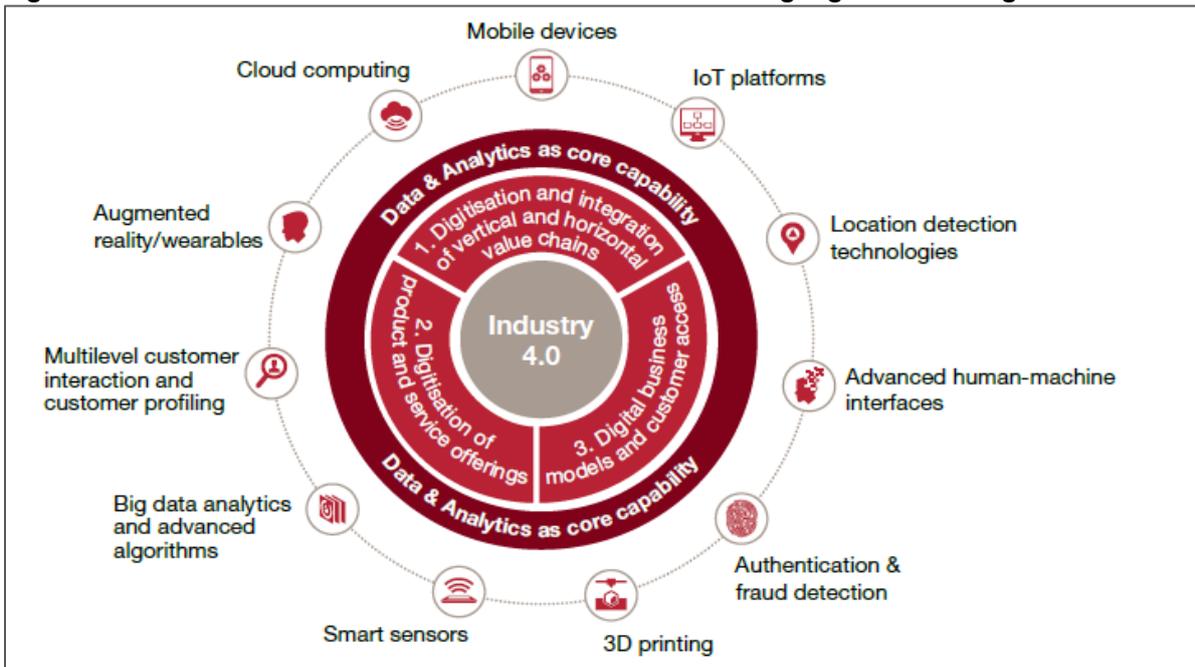
Figure 1: Industrial Revolutions



(Source: <https://civilscafeiassc.in/2020/11/03/industrial-revolution-4-0/>)

The Fourth Industrial Revolution (IR4.0) originating from Germany in 2011, ushers in a new era of intelligent machines, storage systems, and manufacturing facilities that can communicate, trigger operations, and control one another without the need for human participation (Yin et al., 2018). IR4.0 has been widely debated in recent years, and it has become a hotspot for most global companies, including the information industry. IR4.0 is a new industrial revolution that will have a significant impact on global industry (Zhou et al., 2016). The following are some of the key aspects of IR4.0. (1) Cyber-physical system (CPS) is the mechanical device that is run by computer-based algorithms, (2) The Internet of things (IoT) is an interconnected networks of machine devices and vehicles embedded with computerized sensing, scanning, and monitoring capabilities, (3) Cloud computing is an offsite network hosting and data backup and (4) Cognitive computing is a technological platform that employ artificial intelligence (Zhou et al., 2016) (Geissbauer et al., 2016). Figure 2 shows the overview of Industrial Revolution 4.0 framework and contributing digital technologies.

Figure 2: Industrial Revolution 4.0 framework and contributing digital technologies



(Source: <https://www.pwc.com/gx/en/industries/industries-4.0/landing-page/industry-4.0-building-your-digital-enterprise-april-2016.pdf>)

The objectives of IR4.0 are to provide IT enabled mass customization of manufactured items, as well as autonomous and flexible production chain adaption, track parts and products, enable communication among parts, products, and machines, apply human-machine interaction (HMI) paradigms, achieve IoT enabled production optimization in smart factories, and provide new types of services and business models of interaction in the value chain (Masood & Sonntag, 2020). The IR4.0 initiative clearly aims to create smart factories where manufacturing technologies are improved and transformed by CPS (Cyber Physical System), IoT, and cloud computing (Zhong et al., 2017).

Smart Manufacturing System

Manufacturing has always been an important part of the country's growth and prosperity. It has a fundamental impact on a person's quality of life, a country's growth, and a country's influence and position. Today's technologies, particularly information and communications technology (ICT), are exploding, with many disruptive technologies such as cloud computing, the Internet of Things (IoT), big data analytics, and artificial intelligence appearing on a regular basis. By converting the conventional manufacturing processes into a Smart Manufacturing (SM), these new technologies are infiltrating manufacturing and functioning as major enablers for the sector to handle contemporary difficulties such as increasingly personalized requirements, improved quality, and quicker time to market (Zheng et al., 2018). Smart manufacturing will realize the promise and potential of IR4.0 in these circumstances. In many cases, a tipping point has been reached, with machine builders and manufacturers actively involved in the implementation of smart manufacturing systems. According to Stock and Seliger, IR4.0 is already having a significant impact on the manufacturing industry. It is built on the creation of smart factories, smart products, and smart services embedded in an industrial internet of things and services (Stock & Seliger, 2016). Mitra (2021), further claimed that autonomous factory robots and vehicles will play an important role in transforming manufacturing and warehouse facilities into fully functional smart factories of the future agility and resiliency are as important as greater efficiency and productivity in these facilities. With 94 % manufacturing firms reliant on IR4.0 technology to navigate disruption successfully in 2020, it's apparent that the future is today in many ways (Mitra, 2021).

Small and Medium Enterprises (SMEs)

Small and medium-sized enterprises (SMEs) represent for more than 90% of global businesses and play an important role in employment creation and inclusive economic development. To absorb the rising global workforce, the World Bank estimates that 600 million jobs will be required by 2030, making SME growth a top priority for many governments around the world (World Bank SME Finance, n.d.). In Malaysia, the National Entrepreneur and SME Development Council (NESDC) has been using a uniform definition for SMEs since 2005, and the amended version took into effect in 2014. Small and Medium Enterprise Corporation Malaysia (SME Corp. Malaysia) categorized SMEs by their annual sales turnover or the number of full-time employees. The two criteria used in determining the definition with the "OR" basis as follows: (1) For the manufacturing sector, SMEs are defined as firms with sales turnover not exceeding RM50 million OR number of full-time employees not exceeding 200 and (2) For the services and other sectors, SMEs are defined as firms with sales turnover not exceeding RM20 million OR number of full-time employees not exceeding 75 (SME Corporation Malaysia - SME Statistics, 2020). It comprises all industries, including services, manufacturing, agriculture, construction, mining, and quarrying. Based on statistics provided by SME Corp. Malaysia, 98.5% of the total business establishment in Malaysia are SMEs. They are categorized by size, Medium (2.3%), Small (21.2%) and Microenterprises (76.5%). Below is an overview of Small and Medium Enterprises (SMEs) in Malaysia (Figure 3).

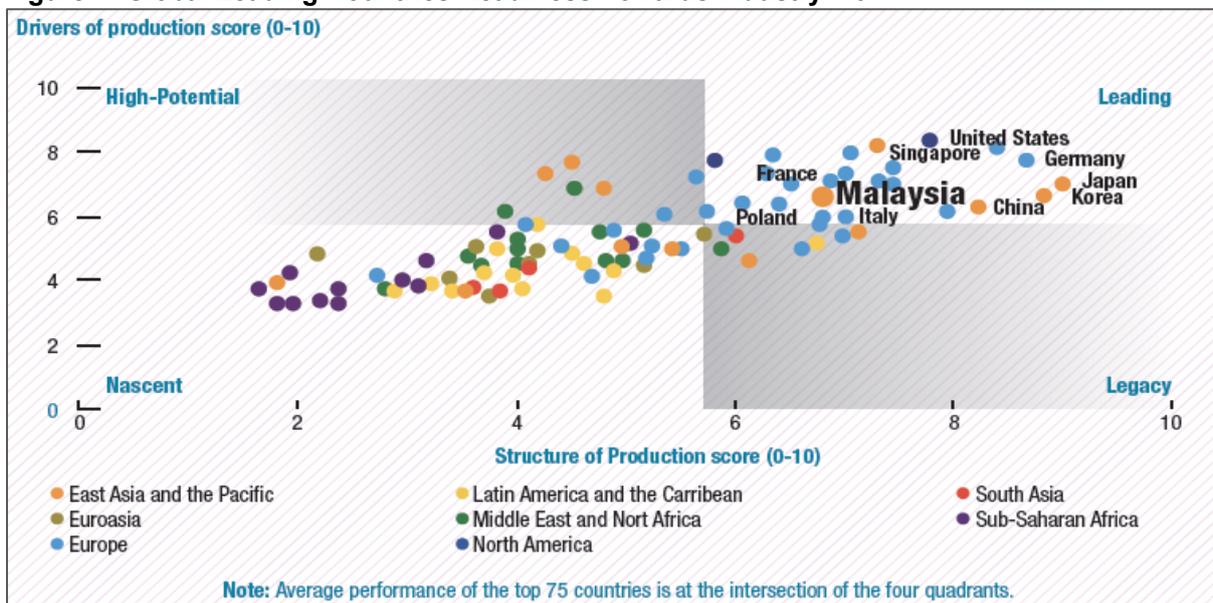
Figure 3: Small and Medium Enterprises (zex.php/en/policies/2020-02-11-08-01-24/sme-statistics)

Services accounted for 89.2 percent of SMEs, followed by manufacturing at 5.3%, construction at 4.3%, agriculture at 1.1%, and mining and quarrying at 0.1%. The top five states in Malaysia with the most SMEs are Selangor (19.8%), the Federal Territory of Kuala Lumpur (14.7%), Johor (10.8%), Perak (8.3%), and Penang (7.4%).

Background of the study

Based on the Ministry of International Trade and Industry's (2018) report on the Readiness Report for the Future of Production 2018, co-published by the World Economic Forum (WEF) and A.T. Kearney, Malaysia was placed in the "Leader" quadrant of 100 countries (Ministry of International Trade and Industry, 2018). Only 25 countries, according to a World Economic Forum (WEF) report, are well positioned to benefit from IR4.0 (World Economic Forum & Kearney, 2018). Below is an overview of global leading countries readiness towards Industry 4.0 (Figure 4).

Figure 4: Global Leading Countries Readiness Towards Industry 4.0



Source: Readiness for the Future of Production Report, World Economic Forum, 2018)

Malaysia, which is in the top quarter of a global rating of 100 countries, officially announced and launched IR4.0 in October 2018. The IR4.0 national policy emphasizes the value-added manufacturing process through digitization and advanced technology utilization which will result in enhanced efficiency and eventually drive forward the competitiveness (Ministry of International Trade and Industry, 2018). Even though the guideline is explicitly established in national policy, it is rare to observe its application after two years after launch. Professor Dr. Ahmad Zaki Abu Bakar, President of the Malaysian National Computer Confederation (MNCC), expressed concern over the adoption of IR4.0 following its launch and recommended organizing a practical event to promote the benefits of IR4.0 in businesses (Charles Moreira, 2019). Despite being listed among the world's leading countries, Malaysia's readiness to embrace IR4.0 remains a doubt. Y. Man Ling concerned about the Malaysian government's initiative to introduce the National IR4.0 Policy (Industry4RWD) may not be visible as the touch base is quite limited to technocrats (Ling et al., 2020). As a result, Phee Waterfield (2018) questioned if we are truly prepared to confront the challenges of the next industrial revolution. Despite as a solid manufacturing economist in ASEAN, Malaysian SMEs are the beginners who has a very low understanding of the IR4.0 concepts and still grappling with the idea of automated processes and smart factory definition applications (Ling et al., 2020). Although most large manufacturing companies are already anticipating the advantages and risks of adopting IR4.0 technologies, Malaysian SMEs are hesitant to take the plunge, according to Malaysian Ministry of International Trade and Industry's (MITI) national IR4.0 blueprint (MITI, 2018). On the other hand, Boughton & Arokiam (2000) explained SMEs are becoming more proactive in improving their manufacturing

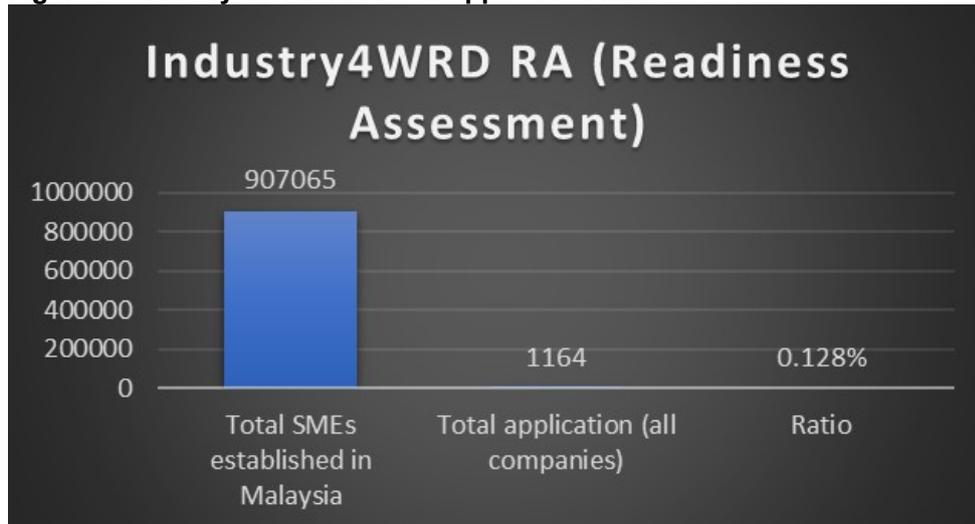
operations, indicating a suitable starting point for implementing new concepts such as IR4.0. However, there are several factors that influence the decision of SMEs owner / manager to embrace IR4.0 technology. The benefits of deploying IR4.0 technology in the manufacturing SMEs should be a driving factor to convince them. Despite the fact that there are several studies on IR4.0, there is a scarcity of academic literature that compiles and analyses the benefits and drawbacks of Industry 4.0 (Sony, 2020). According to Sony, high initial cost, highly skilled labor requirement, cybersecurity, and impact of the data sharing are some of the drawbacks of IR4.0 technology. Cost, technological know-how, and IT systems will be among the hurdles of implementing Industry 4.0, and as a result, new entrants will have a difficult time breaking into the market (Lasi et al., 2014). Added by Matt et al., (2020), Small and Medium Enterprises (SMEs) confront the barrier of not possessing adequate human or financial resources to thoroughly evaluate the benefits and risks of embracing Industry 4.0. According to a report by Pandiyan (2017), Malaysian SMEs are hesitant to embrace Industry 4.0 due to a lack of technological acceptance. The national deputy president of the Malaysian SME Association stressed that awareness on ICT (Information and Communication Technology) is still low with only 20% of SMEs using it and only 16% of SMEs embarking on e-commerce activities (Ong, 2016). Despite all of the issues listed above, owners and managers' awareness of national policy on IR4.0 remains a doubt, as this will hinder them from implementing the concept of IR4.0. Table 1 shows a list of governing body that have offered a wealth of information on IR4.0 and prepared some rules for SMEs to implement IR4.0 technology in manufacturing that not all owners / managers are aware of.

Table 1: Malaysian Governing Body Guidelines on IR4.0

<u>No.</u>	<u>Governing Bodies</u>	<u>Document Title</u>	<u>Year Published</u>	<u>Website / Link</u>
1)	Ministry of International Trade and Industry (MITI)	Industry4WRD	2018	https://www.miti.gov.my/index.php/pages/view/industry4WRD?mid=559
2)	MyGovernment	Industry4WRD: National Policy on Industry 4.0	2018	https://www.malaysia.gov.my/portal/subcategory/248
3)	Malaysian Productivity Corporation (MPC)	INDUSTRY4WRD READINESS ASSESSMENT	2019	https://www.mpc.gov.my/industry4wrdr/
4)	Standards and Industrial Research Institute of Malaysia (SIRIM)	SME's JOURNEY TOWARDS INDUSTRY 4.0	2019	https://www.sirim.my/Pages/SIRIM-Press-Release/SME-towards-Industry-4-0.aspx
5)	Malaysian Investment Development Authority (MIDA)	Industry4WRD – Manufacturing the Future	2020	https://www.mida.gov.my/industries/manufacturing/
6)	Economic Planning Unit (EPU)	National Fourth Industrial Revolution (4IR) Policy	2021	https://www.epu.gov.my/en/node/2104

Almost all government bodies stress the importance of implementing IR 4.0 in Malaysian industry. These organizations provide a variety of incentives, training, workshops, and guides to demonstrate their support for business owners / managers. In this regard, MITI conducted an IR4.0 readiness assessment (4WRD RA) as a comprehensive program to help companies in the manufacturing and related services sectors to understand their current capabilities in adopting IR4.0, using a predefined set of indicators, and initiating digitization. The hybrid RA model was introduced to assess Malaysian companies' readiness to adopt IR4.0. In a recent press release, MITI revealed the number of companies participating in the Industry 4WRD RA (Readiness Assessment) which surprisingly showed very low awareness of company owners / managers (Creating Industry 4.0 Champions in Malaysia | The Star, 2021). Figure 5 shows the number of SMEs established in Malaysia compared to the number of applications for the Industry 4WRD RA.

Figure 5: Industry 4WRD RA Total Application Ratio



Only 0.128 percent of companies are involved in the Industry 4WRD RA, indicating a significant disparity with the number of SMEs established in Malaysia. This is a red flag of a lack of awareness among business owners and managers, which could lead to their eventual downfall. Therefore, this research will examine the awareness of Malaysian manufacturing SMEs with IR4.0 national policy and identify the level of readiness. Past literature shows that few scholars wrote about Malaysia's readiness towards the implementation of IR4.0 and as mentioned earlier, very little studies on the awareness of owners / managers about IR4.0 in the manufacturing of SMEs. This study aims to examine the lack of awareness among owners / managers about IR4.0 in the Malaysian manufacturing SMEs.

LITERATURE REVIEW

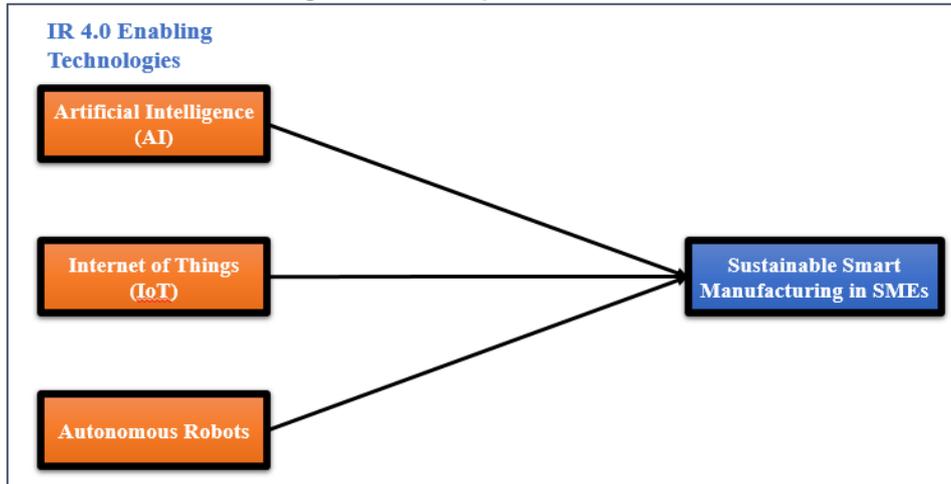
Introduction

This study presents an overview of the most relevant academic literature pertaining to the research problem. A review of the existing literature is important to gain an understanding of the research topic and to identify unexplored issues. The review of literature fits two purposes; first to learn about the subjects and second to support the study argument (Murray, 2011). It begins with an introduction to the concept of IR4.0 followed by a theoretical perspective of the study. Based on the literature concerning firm IR4.0, its significances and limitations shall be reviewed. The overall purpose of this study is to identify the readiness level of manufacturing SMEs towards IR4.0 and sustainable smart manufacturing practices. The objectives are: (a) to reach a wider understanding to support the study argument, (b) to discuss the significance and limitations of previous empirical findings, and (c) to identify gaps in the literature that fit this study.

CONCEPTUAL FRAMEWORK

Figure 6 shows the diagrammatic view of the research conceptual framework. The focus is on the IR4.0 enabling technologies context, which includes Artificial Intelligence (AI), Internet of Things (IoT), and Autonomous Robots (AR), on IR4.0 to anticipate engagement in sustainable smart manufacturing.

Figure 6: Conceptual Framework



IR4.0 Enabling Technologies

There are several technologies used to embrace the IR4.0. Artificial Intelligence, Internet of Things (IoT), Autonomous Robots, 3D printing, Big Data analytics, Augmented Reality, and other emerging technologies are reshaping the industry (Wahab, 2018). However, only three technologies were selected for this study: (1) Artificial Intelligence (AI), (2) Internet of Things (IoT) and (3) Autonomous Robots (AR). Mat Lazim et al., (2020) has evaluated the suitability of enabling technologies such as the Internet of Things, autonomous robots, big data analytics, and artificial intelligence, which are pillars of IR4.0, on an individual basis in previous studies. These enabling technologies give the industrial environment a new dimension, resulting in a significant increase in industrial productivity.

Artificial Intelligence (AI)

Many human mental tasks, such as writing computer programs, arithmetic, common sense reasoning, language comprehension, and even driving a vehicle, are said to necessitate "intelligence." Machine learning, which focuses on the development of programs that can teach themselves to learning, understanding, reasoning, planning, and act when exposed to new data in the right amount, is one example of AI (Nilsson, N. J., 2014). Smart factories will be equipped with AI technology to enhance networking, in which data from supply chains, design teams, production lines, and quality control will be connected to create highly interconnected and intelligent machines (Wang, S., Wan, J., Li, D., & Zhang, C., 2016). The aim of this study is to test the direct relationship between the Artificial Intelligence (AI) and sustainable smart manufacturing.

Internet of Things (IoT)

Even though Industry 3.0 ushers in a new age of computation and networking, it still relies on humans to make even the most basic decisions. Industry 4.0 technologies reflect an unparalleled proliferation of sensors and sensor synchronization. It's now easy to imagine the autonomous production systems when combined with other technologies like AI and big data, and this is a part of the smart manufacturing idea (Rong, W., Vanan, G. T., & Phillips, M., 2016). According to Zaidi and Belal (2019), SMEs believed in the benefits of IoT implementation, but there was a lack of creativity in getting it started. They discovered that insecurity and lack of trust were impeding their introduction. For a better and more positive adoption of IoT in Malaysia, more information and training for employees is needed. The aim of this study is to examine the direct correlation between the Internet of Things (IoT) and sustainable smart manufacturing.

Autonomous Robots (AR)

Machines and robotics are evolving into the next generation. Robots can even do more on their own, including learning on the job and collaborating with humans and other robots (Vaidya et al., 2018). This technology enables systems to think, act, and react autonomously, as well as make

decisions. This will help a business become more competitive, productive, and profitable (Harnisch et al., 2015). In this regard, the present study proposes to test the direct relationship between Autonomous Robots (AR) and sustainable smart manufacturing.

PROPOSED RESEARCH METHODOLOGY

Selection of Sampling Method

A convenient sampling method will be used to select industrial practitioners from various subsectors of the manufacturing industry for the pre-test. This study uses a probability sampling and systematic sampling method to select respondents from the list of manufacturing SMEs in the Federation of Malaysian Manufacturers (FMM) 2018 and SME Directory Malaysia 2018 directories for the pilot study and primary data collection. Every odd number of manufacturing SME will be chosen to participate in the survey from the generated list.

Research Procedure

The research methodology chosen for this study will be in line with the ontological and epistemological positions. In this case, the quantitative approach corresponds to the objective-positivism paradigm will be used to collect data for the report, which aimed to investigate the readiness for IR4.0 in SMEs. When the number of possible respondents is large, quantitative methodology is the best option. Quantitative research deals with numbers, while qualitative research deals with experiences and meanings described in words, according to Brannick and Roche (1997).

This study takes on a positivism perspective because the research question focuses on owners/managers intention to adopt IR4.0 in SMEs. It also mandates that the barriers faced by owners/managers who engage in IR4.0 be compared to the barriers perceived by owners/managers who do not engage in IR4.0. Therefore, the study aims to collect data from as many SMEs as possible. The positivism approach was also considered the most effective in the study, which sought to discover why most SMEs have not adopted IR4.0. By employing a large sample, the answers to these questions quantify the inherent barriers of SMEs in adopting IR4.0. Therefore, positivism perspective is preferred as it provides insight to the influence of owners/managers in SME"s decision to adopt IR4.0. A pilot study will be conducted before the primary data collection to maintain the evaluation of reliability and validity. Furthermore, in the primary data analysis and interpretation phase, data analysis methods such as frequency, mean, standard deviation, reliability analysis, descriptive analysis, correlation coefficient analysis, bivariate regression analysis, multiple regression, and hierarchical regression analysis will be used.

CONCLUSION

It can be inferred that the majority of Malaysian SMEs are not prepared to adopt IR 4.0. Despite the immense economic potential of IR 4.0, many SMEs in the industry are still unaware of its existence (Teh & Kee, 2019). IR 4.0 will have a significant impact on organizations and businesses in Malaysia. As a result, SMEs must learn to deal with interference, become more resilient, and enthusiastically accept IR4.0. To ensure that SMEs can leverage more advanced manufacturing processes, an exclusive platform or framework is needed. SMEs do have the expertise to incorporate IR 4.0, but they lack the knowledge to adapt and transform into it. SMEs should be equipped with IR 4.0 awareness and training campaigns. Without a doubt, this will assist SMEs in realizing the importance of IR 4.0 and confidently working toward it. This is a great opportunity for today's small and medium businesses to develop into tomorrow's mega-corporations by adopting IR4.0. It is believed that by presenting this review, both academics and industrial practitioners would gain access to a hands-on library of IR 4.0. Although academic research focuses on comprehending and defining the term, as well as developing related structures, business models, and methodologies, industry, on the other hand, focuses on the evolution of industrial machine suits and intelligent goods, as well as the effect on potential customers.

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BAFE021:
**MANAGERS' ENVIRONMENTAL ATTITUDE AND PERCEIVED
BENEFITS: PAVING THE WAY TOWARDS GREEN PRACTICES IN
THE HOTEL INDUSTRY**

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Abstract

The growing concerns about climate change and devastating environment lead to the urge for the management of the hotels to adopt green practices in their premises. This study examined the influences of biospheric value and environmental awareness on environmental attitude among the hotels' top managers. Further evaluation was performed on the extent to which managers' environment attitude affect the adoption of green practices indirectly through perceived benefits. Self-administered questionnaires were distributed to the hotels located in different states in Malaysia. The data of this study was based on 147 usable questionnaires that have been completed by the hotel top managers. Partial Least Square-Structural Equation Modelling was used for hypotheses testing. The findings revealed that biospheric value and environmental awareness were positively related to environmental attitude. Among the two exogeneous variables, biospheric value demonstrated a more profound impact on the formation of top managers' environmental attitude. Meanwhile, environmental attitude showed a significant positive influence on perceived benefits, which in turn lead to higher adoption of green practices by the hotels. The linkage between environmental attitude and green practices was mediated by perceived benefits. The results from the statistical analysis supported all the hypotheses in this study. Implications and limitations of the study were discussed.

Keywords: biospheric value, environmental awareness, environmental attitude, perceived benefits, green practices, hotel

INTRODUCTION

Scientists have pointed out that human activities are the main sources of rising temperatures and global climate change. The changes have resulted in more frequent tropical storms, wildfires, and drought (NASA, 2021). In response to the environmental concern, the Malaysian government has planned for several measures to promote green living and green growth. Among the initiatives include the blueprint of sustainable consumption and production (SCP) 2016-2030 (Economic Planning Unit, 2016). Nevertheless, the aim towards a low carbon, green, and sustainable future requires cooperation from all parties, such as the corporations, government, and the public.

The growing concerns about climate change and devastating environment had led to the urge for the management of the hotels to adopt green practices in their premises. Green practices can be described as various business activities which targeted at reducing the negative consequences to the

environment (Kim, Lee, & Fairhurst, 2017). Other similar terms of green practices include sustainable practices, environmental practices, or environmental management. Prior research had delivered several intriguing insights about the determinant of hotels' green practices. Among the determinants include the elements from the external environment, which are beyond the direct sphere of influence by the organisation, such as legislative requirements and pressures from different stakeholders (Ouyang, Wei, & Chi, 2019). Other precursors of green practices adoption include managerial commitment (Chan & Hawkins, 2010; Kim & Wen, 2015; Ojo & Fauzi, 2020), hotel size, types of clientele (i.e., business vs. leisure-oriented hotels) (Fernández-Robin, Celemín-Pedroche, Santander-Astorga, & Alonso-Almeida, 2019), financial, marketing-related, and strategic domain consideration (Kim et al., 2017).

Though abundant media reports published books and research work had pointed to the need for the hotel sector to incorporate green practices as part of the company's strategic decision, problems remain for the adoption of green practices. In reality, managers' perceptions about the benefits of green practices remained mixed (Alonso-Almeida, Fernández Robin, Celemín Pedroche, & Astorga, 2017; Tzschentke, Kirk, & Lynch, 2008). Besides, different barriers to green practices have been reported in the past studies, such as financial consideration, customer attitude, and limited resources and capabilities of the company (Alonso-Almeida et al., 2017; Yusof & Jamaludin, 2014). Moreover, it is important to note that the environmental attitude of owners/administrators/top managers and their perception about the needs of green practices is important towards corporate greening (Alonso-Almeida et al., 2017). This is because owners' or top managers' environmental attitudes can be the principal obstacles towards green practices if they fail to recognise the value of such initiatives (Doody, 2010).

Park, Jeong Kim, and McCleary (2014) provided an insight on the interplay of environmental attitude, perceived benefits, and environmental management among the hotels' managers in the United States (U.S.), which can be viewed from the perspective of attitude-behaviour consistency and upper echelons theory (Hamrick & Mason, 1984). Attitude implies a strong connection between opinions and actions or a predictable response (Green, 1954). Consistency occurs when a favourable attitude leads to positive behaviour or actions, in contrast, unfavourable attitude results in negative behaviour. Given the importance of top management environmental attitude, this study extends Park's et al. (2014) model by incorporating two predictors of environmental attitude, which include environmental awareness and biospheric value, and test the model in the context of the hotel industry in Malaysia. While individual characteristics or personal factors, such as environmental awareness and personal values have been linked to pro-environmental behaviour among employees and customers or hotel guests (Bouman, Steg, & Kiers, 2018; Chan, Hon, Chan, & Okumus, 2014, Han & Lee, 2016), empirical studies on the influence of these factors on managerial environmental attitude towards organisational-level strategy (i.e., green practices) were relatively limited.

Taken together, this study aims to evaluate the direct impacts of biospheric values and environmental awareness on environmental attitudes among Malaysian hotel top managers. Besides, this study evaluated the extent to which top managers' environmental attitudes influence green practices adoption indirectly through perceived benefits.

LITERATURE REVIEWS

Green Practices

Due to the nature of its operation, the hotel industry is a sector that involves heavy consumption of water, electricity, disposable items and generates huge amounts of wastage (Ojo & Fauzi, 2020). Efforts toward the conservation of natural environment by the hotel operators are essential in view of its close link with the tourism industry. The green practices in the organisation encompass various activities, such as emphasize on waste reduction management (e.g., use of refill soap dispenser, and 3R - reuse, recycle, and reduce programmes), energy conservation (e.g., auto sensor control lighting and use of LED lighting and equipment, energy-saving equipment and bulbs), water conservation (e.g., frequent checking and repair leak, encourage guests to re-use towel/linen, and save water), involve community in the natural saving programmes, green purchasing, minimise the use of ecological harmful products, as well as environmental policy and training to the employees

(Bagur-Femenias et al., 2016; Choi, Kim, Kim, & Agmapisarn, 2019; Kim, Park, & Wen, 2015; Terrier & Marfaing, 2015; Yusof & Jamaludin, 2014).

Wei and Ruys (1999) pointed out that hotel management is often confronted with difficulties to balance between the adoption of green practices and potential conflicting demands from stakeholders, such that the hotel guests might want a pampered and convenient experience and fewer concerns on environmental issues, and many investors might expect for short-term financial returns. Despite these challenges, being responsive towards environmental issues entail strategic decision and it signifies a company's corporate social responsibility, hence it requires constant attention by the management.

Biospheric Value and Environmental Attitude

Environmental attitude refers to "the collection of beliefs, affect, and behavioural intentions a person holds regarding environmental related activities or issues" (Schultz, Shriver, Tabanico, & Khazian, 2004, p. 31). A person with positive environmental attitude demonstrates favourable psychological tendency towards environmental protection, and vice versa (Li, Zhao, Ma, Shao, & Zhang, 2019). As such, this study defined environmental attitude as the rational judgment of hotel managers toward environmental protection. Environmental attitude is a powerful predictor of environmental behaviour (Kaiser, Wolfing, and Fuhrer, 1999). Prior empirical study has established that personal values and environmental attitudes are inextricably linked to one another (Tamar, Wirawan, Arfah, & Putri, 2021; Wang, Van der Werff, Bouman, Harder, & Steg, 2021)

Personal values have been widely documented as a key determinant of a person's specific attitude, beliefs, and behaviour (Rokeach, 1973; Stern, 2000; Stern & Dietz, 1994). Values can be defined as "desirable trans-situational goal varying in importance, which serves as a guiding principle in the life of a person or other social entity" (Schwartz, 1992, p. 21). As such, values are beliefs and life goals that guide a person's actions and decision making across different situations (Schwartz, 1992; 2012). In short, personal values act as individual's guiding principles. Personal values were found to be the predecessor that shape managers' environmental attitude and strategic decision about corporate environmental responsiveness (Papagiannakis & Lioukas, 2012).

The value basis theory (Stern & Dietz, 1994) can serve as a theoretical framework in explaining the relationship between values and environmental attitudes. Stern and Dietz (1994) introduced three types of value orientations, namely altruistic value (concern for the well-being of others), egoistic (concern for self-interest or personal gain), and biospheric value (concern for the natural environment). Among these three values, biospheric value was known to be the key explanatory variable of environmental attitude and pro-environmental behaviour in the environmental psychology literatures (De Groot & Steg, 2010; Han & Lee, 2016; Schultz & Zelezny, 1999; Steg & de Groot, 2012). Individuals who possess with high biospheric value tend to concern about the welfare of the larger society and nature (Steg & de Groot, 2012). From the perspective of the Schwartz value system (Schwartz, 1992), biospheric values are part of the universalism value orientation.

Findings by Wang et al. (2021) showed that in both Dutch and Chinese samples, individuals with biospheric values tend to see themselves as environmentally friendly people, and thus they are more likely to engage in pro-environmental behaviour. Relatedly, Han and Lee (2016) revealed that as compared to altruistic and egoistic value, the biospheric value was the most consistent predictor of environmental attitude and behaviour intention, such that high biospheric values lead to greater willingness to choose green restaurants, say positive things about the green restaurant, and willing to pay a premium price. In a similar vein, biospheric value promotes a person's willingness to sacrifice for the environment, pay for a premium price and foster intention to stay in the green hotel (Rahman & Reynolds, 2016) and patronage towards the green hotel (Torres-Moraga, Alonso-Dos-Santos, & Carvajal-Trujillo, 2021). Besides, Tamar et al., (2021) also revealed that among the two pro-social values, biospheric value was found to be a better predictor of environmental attitudes and pro-environmental behaviour as compared to altruistic value. Based on these rationales, this study postulated that biospheric value will lead to the formation of positive environmental attitude:

H1: Biospheric values positively related to environmental attitude.

Environmental Awareness and Environmental Attitude

Environmental awareness was commonly referred to as the level of understanding and the concerns about the natural system (Cui, Hoje & Velasquez, 2015). Prior study found a significant relationship between environmental awareness and consumers' attitudes toward environmentally friendly products (Khaleeli & Jawabri, 2021). As such, a lack of awareness about environmental issues and its consequences are likely to limit managers' initiative for corporate greening. Based on a sample of 197 hotels located in Caribbean, Best and Thapa's (2013) found that the main reason for hoteliers to implement green practices was due to the awareness of the importance of conserving natural resources, while government regulation was considered as least important. Furthermore, Adanse et al. (2017) contended that a certain degree of environmental awareness among hotel managers is important in developing commitment to achieve the goal of environmental sustainability, which can help the hotel to achieve efficiency and effectiveness in the long term. The following hypothesis was developed based on the above reasoning:

H2: Environmental awareness is positively related to environmental attitude

Environmental Attitude, Perceived Benefits, and Green Practices

An array of studies have shown the close linkages between an individual's environmental attitude and pro-environmental or green behaviour such as green purchasing, recycling, and waste management (Issock, Mpinganjira, & Roberts-Lombard, 2018; Khaleeli & Jawabri, 2021; Takahashi & Selfa, 2014). Nonetheless, the relationship between personal environmental attitude and actual behaviour is not definite as some studies (Newhouse, 1990, Schaper, 2002) failed to establish a strong connection between the two variables. The gap between managers' environmental attitude and implementation of green practices is likely to be affected by their perception about the benefits that can be generated from such actions. For top managers, they deal with more complex decision making; they need to judge the demands of various stakeholders and implication on the organisation performance. Moreover, research had pointed out that the managers' positive environmental attitude is an important driver for them to devote time and resources in greening the hotels (Park & Kim, 2014; Park, Jeong Kim & McCleary, 2014). As stressed by Issock et al. (2018), the concept of environment attitude reflects that one would focus on green practices when he/she have a favourable disposition and positively perceived such practices. Further, Kim et al. (2017) in their extensive review clearly summarised that it is impossible for the managers to allocate resources for green practices implementation unless they perceive the benefits of such move.

Prior studies showed that the driving factors for the management of the hotels to embark on green practices are not merely driven by economic gains and cost efficiency (Kularatne, Wilson, Månsson, Hoang, & Lee, 2019; Alonso-Almeida et al., 2017). Studies showed that engaging in green practices have positive impacts on hotel image (Esparon, Gyuris, & Stoeckls., 2014) as well as improve employees' satisfaction and motivation (Chan & Hawkins, 2010). Besides, efforts toward greener hotels can serve as a marketing asset in attracting environmentally conscious customers (Berezan, Raab, & Yoo., 2013; Teng, Lu, & Huang, 2018). Hence, there are adequate evidences that green practices provide both financial and non-financial benefits to hoteliers.

While some had reported that implementation costs were a key barrier of green practices (Yusof & Jamaludin, 2014), Kirk (1995) explained that at the early stage of the implementation of green practices, the hotel's management can start the initiatives through low-cost simple projects that can be performed by the employees instead of involve in high capital investments. In a survey among small hotel managers, Bagur-Femenias et al. (2016) concluded that environmental or green practices have a sizable effect on operational efficiency through better utilisation of resources. Besides, green practices significantly improve the hotels' competitiveness as the efforts enhance the hotel image, generate a positive relationship with the local community, and can attract environmentally conscious customers, thus improve the market share (Bansal & Roth, 2000; Graci & Dodds, 2008). Bagur-Femenias et al.'s (2016) study also revealed that the benefits of green practices surpass the cost of investment even for small hotels. And, the hotels that voluntarily pursue green practices enjoyed greater benefits as compared to those that merely act to meet the regulatory requirements (Bagur-Femenias et al., 2016). Moreover, some authors postulated that despite the potential large upfront investments (e.g., installation of solar panels), organisations in the hospitality industry typically yield positive financial outcomes through green practices within five years (Chan, Li, Mak, & Liu, 2013;

Alonso-Almeida et al., 2017). Additionally, hotels' engagement in green practices enhances the image of the hotel as a corporate responsible organisation and several studies have established the increased tendency among travelers to stay in eco-friendly hotels (Berezan et al., 2013; Teng et al., 2018).

According to Upper Echelons Theory (Hamrick & Mason, 1984), the situational factors and the prominent managers characteristics (e.g., values and the executives' socio-demographic profile) are the foundation that affects the strategic choices which ultimately can influence organisational performance. Meanwhile, a manager's value and perception about the situational factors affect his/her attitude and strategic decision making (Scott & Mitchell, 1972). This is further stressed by Wei and Ruys (1999), managers' perception of what is the best interest for the hotel influence their actions. Hence, managers who perceived the benefits of green practices are likely to be more committed in crafting and executing such sustainability efforts in their premises. According to Fukey and Issac (2014), hoteliers who perceived the advantages of green practices would provide relevant training to the employees and encourage environmentally friendly behaviour among the customers. In short, environmental attitudes influence managers' perception about the benefits of green practices, thus encourages the undertaking of such initiatives in their organisation. In a sample that involve various hotels in the U.S., Park et al., (2014) revealed that top managers with positive or pro-environmental attitudes were positively related to their perceived advantages of environmental management, which subsequently lead to a greater level of engagement in environmental management. Taken together, related hypotheses were formed as below:

H3: Environmental attitude is positively related to perceived benefits of green practices

H4: Perceived benefits is positively related to hotels' green practices

H5: Perceived benefits mediate the relationship between environmental attitude and hotels' green practices

METHODOLOGY

The participants of this study must be holding a key managerial position in the hotel, such as general managers, owner, or other executives of the hotels who have engaged in the green practices' decision of the hotel. A convenient sampling technique was used to select the hotels and self-administered questionnaires were distributed to the target respondents. The fieldwork was conducted in 2019 and involved six research assistants. Prior to data collection, an ethical clearance approval was obtained from the Research Institute of the university. Out of 350 questionnaires that had been distributed to the hotels located at different states in Malaysia. A total of 161 questionnaires were returned. Nevertheless, only 147 questionnaires were used for the final data analysis, 14 questionnaires were excluded due to the incomplete information, or they were not filled by the targeted respondents for this study. G*Power 3.1 software was used to determine the minimum sample size (Faul et al., 2007). In order to achieve sufficient statistical power of 0.80 of moderate effect size of 0.15, a minimum sample size of 85 was required for this study. Thus, the sample of 147 was deemed sufficient to produce a robust result. Table 1 shows the respondents' profile of the present study.

Table 1: The Detail Information of Sample Profile

Items	Frequency	Percentage
<u>Gender</u>		
Male	65	44%
Female	82	56%
<u>Size of Hotel</u>		
<50 rooms	68	46%
50-100 rooms	28	19%
101-150 rooms	15	10%
151 - 200 rooms	5	3%
>200 rooms	31	21%

Types of Hotel

Budget Hotel	48	33%
Boutique Hotel	39	27%
Heritage Boutique Hotel	6	4%
City/Business Hotel	39	27%
Theme Park Resort/Hotel	4	3%
Eco/Nature Resort	1	1%
Golf Hotel	3	2%
Others	7	5%

Rating of Hotel

One-star	18	12%
Two-star	34	23%
Three-star	42	29%
Four-star	22	15%
Five-star	10	7%
Others	21	14%

Group of Travelers

Business travelers primarily	25	17%
Leisure travelers primarily	11	7%
A combination of business and leisure travelers	111	76%

Measures

For all the measures in this study, participants indicated their agreement on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree). A pre-test and pilot test were conducted to ensure the measurement items validity and reliability.

Biospheric value was assessed with a four-item measure developed by de Groot and Steg (2008). A sample item includes “For me, it is important to protect the environment.”

Environmental awareness was measured with an eight-item scale developed by Onwezen, Antonides, and Bartels (2013). A sample item includes “The effects of pollution on public health are worse than we realize”.

Environmental attitude consists of five items, which were adapted from Stone, James, & Cameron (1995) and Lee (2011). A sample item includes “My involvement in environmental caring activities today will help to save the environment for future generations”.

Perceived benefits were rated using a six-item scale which was developed by Park and Kim (2014). The participants indicated their agreeableness on the benefits of green practices in terms of cost savings, its function as a marketing asset, contribution to environmental sustainability, improve the relationship with local communities, employee motivation, and hotel image.

Green practices of the hotel were assessed with the measures developed in the prior environmental studies (Bagur-Femenias, et al., 2016; Kim et al., 2015). There are a total of seven items and a sample item is “My hotel buys environmentally friendly products”.

Data Analysis

Statistical Package for the Social Sciences (SPSS) version 25 was used for data entry and to enable descriptive analysis to be conducted. For hypothesis testing, SmartPLS version 3 software was employed to perform the Partial Least Square-Structural Equation Modelling (PLS-SEM). Two

key steps in PLS-SEM include the assessment of the measurement model, and then followed by the evaluation of the structural model (Anderson & Gerbing, 1988).

As all the predictor and criterion variables in the study were collected from a single source or the same respondents, thus statistical remedy was performed through full collinearity assessment (Kock & Lynn, 2012; Kock, 2015) to ensure that the data was free from common method bias. Table 2 demonstrates that the variance inflation factor (VIF) values for all the latent variables exceed the threshold of 3.3, thus indicating common method bias was not a concern.

Table 2: Full Collinearity Assessment

Latent variable	Variance inflation factor (VIF)
Biospheric value	2.198
Environmental attitude	2.176
Perceived benefits	1.536
Environmental awareness	1.814
Green practices	1.255

Evaluation of the Measurement Model

The convergent validity of the reflective measurement model was first assessed. Convergent validity can be determined by evaluating the indicator factor loading, average variance extracted (AVE), and composite reliability. Three indicators (EAT4, EAT5, and PB2) with outer loading that were less than 0.708 were deleted. Table 3 depicts that the outer loading of all the remaining indicators exceed 0.708 and AVE of all the key construct in this study surpass the cutoff point of 0.500. The composite reliability for each construct is greater than 0.708. Hence, the results show that all the constructs in the measurement model demonstrate good convergent validity and internal consistency (Hair Risher, Sarstedt, & Ringle, 2019).

Table 3: Convergent Validity and Composite Reliability of the Measurement Model

Constructs	Items	Loadings	AVE	CR
Biospheric value	BV1	0.941	0.823	0.949
	BV2	0.905		
	BV3	0.932		
	BV4	0.847		
Environmental attitude	EAT1	0.830	0.760	0.905
	EAT2	0.894		
	EAT3	0.890		
Environmental awareness	EA1	0.831	0.744	0.921
	EA2	0.856		
	EA3	0.893		
	EA4	0.871		
Perceived Benefits	PB1	0.780	0.657	0.905
	PB3	0.817		
	PB4	0.844		
	PB5	0.849		
	PB6	0.760		
Green Practices	GP1	0.824	0.646	0.924
	GP2	0.734		
	GP3	0.886		
	GP4	0.822		
	GP5	0.743		
	GP6	0.817		
	GP7	0.794		

Note. n = 147, AVE=Average Variance Extracted, CR=Composite Reliability.

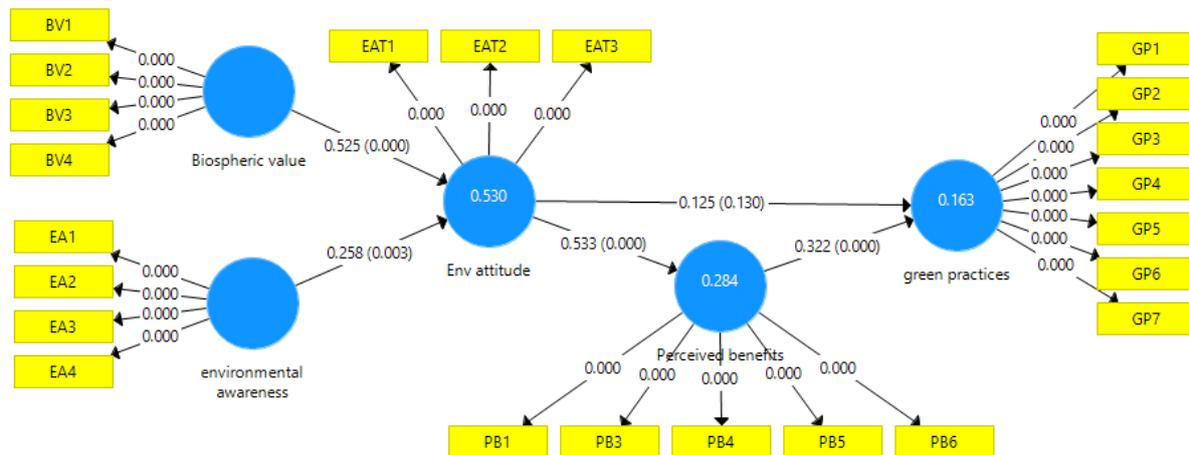


Figure 1: Results of structural model after bootstrapping procedure

Discriminant validity of the measurement model was first assessed using the Fornell and Lacker Criterion, and then followed by Heterotrait-Monotrait (HTMT) Ratio (Henseler, Ringle, & Sarstedt, 2015). Table 4 depicts that the value for the square root of AVE were greater than the corresponding variable correlations in the same column and row (Fornell & Lacker, 1981). On the other hand, Table 5 shows that all the HTMT values were less than 0.85 (Kline, 2011). The findings support the discriminant validity of the constructs of the present study.

Table 4: Descriptive Statistics, Correlation of Latent Variables and Fornell and Lacker Criterion

	Mean	Standard deviations	1	2	3	4	5
1. Biopheric value	4.3095	.59272	0.907				
2. Environmental attitude	4.0245	.56902	0.705	0.872			
3. Perceived benefits	3.9592	.67395	0.465	0.532	0.811		
4. Environmental awareness	4.0595	.66165	0.695	0.623	0.421	0.863	
5. Green practices	3.2985	.89225	0.268	0.294	0.390	0.102	0.804

Note. Diagonals refers to the square root of the AVE (in bold)

Table 5: Discriminant Validity based on Heterotrait-Monotrait Ratio Criterion

	Biospheric value	Environmental attitude	Perceived benefits	Environmental awareness
Environmental attitude	0.796			
Perceived benefits	0.521	0.617		
Environmental awareness	0.765	0.717	0.479	
Green practices	0.276	0.319	0.405	0.102

Table 6 demonstrates that both biospheric value ($\beta=0.525$, $t=5.713$, $p<0.001$) and environmental awareness ($\beta=0.258$, $t=2.732$, $p<0.01$) were positively related to environmental attitude. Biospheric value and environmental awareness explained 53% ($R^2 = 0.530$) of the variance in environmental attitude, indicating the model has a substantive predictive accuracy since the value is beyond 0.26 (Cohen, 1988).

Environmental attitude ($\beta=0.533$, $t=6.895$, $p<0.001$) was also found to be a significant predictor of perceived benefits. A total of 28.4% ($R^2 = 0.284$) of the variance in perceived benefits was explained by environmental attitude. Meanwhile, top managers' perceived benefits ($\beta=0.322$, $t= 3.671$,

$p < 0.001$) were positively linked to the adoption of green practices. The exogenous constructs explained 16.3% of the variance in green practices ($R^2 = 0.163$).

Next, the effect size for the significant paths was evaluated. Based on Cohen's (1988) guidelines, f^2 values of 0.02, 0.15, and 0.35 represent a small, medium, and large effect, respectively. As shows in Table 6, biospheric value has a medium effect on environmental attitude ($f^2 = 0.304$), whereas environmental awareness only showed a small effect on environmental attitude ($f^2 = 0.073$). Environmental attitude has a relatively large effect on perceived benefits ($f^2 = 0.396$). The effect size between perceived benefits and green practices is regarded as small ($f^2 = 0.089$). The blindfolding procedure was used to generate the Q^2 value (Geisser, 1974; Stone, 1971) to evaluate the predictive relevance of the endogenous constructs for the reflective measurement model. Table 6 clearly shows that the Q^2 values for all the relevant constructs ($Q^2_{\text{environmental attitude}} = 0.392$, $Q^2_{\text{perceived benefits}} = 0.177$, $Q^2_{\text{green practices}} = 0.090$) were above zero, hence providing the supports for the predictive relevance of these constructs (Hair et al., 2019). The statistical results described above showed that all the hypotheses, H1 to H4 were supported by the data.

Table 6: Results of the Structural Model

H	Path	Beta	SE	t-statistics	Decision	f^2	Q^2	R^2
H1	BV → EAT	0.525	0.092	5.713***	Supported	0.304		
H2	EA → EAT	0.258	0.094	2.732**	Supported	0.073	0.392	0.530
H3	EAT → PB	0.533	0.077	6.895***	Supported	0.396	0.177	0.284
H4	PB → GP	0.322	0.088	3.671***	Supported	0.089	0.090	0.163

Note. H = Hypothesis, SE = Standard errors, BV = Biospheric value, EA = environmental awareness EA = EAT=environment attitude, PB=perceived benefit, GP=green practices adoption, Q^2 =Predictive Relevance, R^2 =Explanatory Power, ** = p -value < 0.01, *** = p -value < 0.001

Table 7 illustrates that perceived benefits were significantly mediate the relationship between environmental attitude and green practices ($\beta=0.172$, $t = 3.200$, $p < 0.01$), thus support H5. Next, the type of mediation was assessed and presented in Table 7. The direct effect between environmental attitude and green practices appeared to be insignificant, whereas the indirect effect was significant. Thus, the results indicate that perceived benefits fully mediate the relationship between environmental attitude and green practices (Zhao, Lynch, & Chen, 2010).

Table 7: Mediation Analysis

H	Path	Beta	SE	t-Statistics	Results	Bootstrapping Confidence Interval	
						5% LL	95% UL
	EAT → GP	0.125	0.111	1.126	-	-0.059	0.310
H5	EAT → PB → GP	0.172	0.054	3.200**	Supported	0.095	0.270

Note. H = Hypothesis, SE = standard error, EAT=environment attitude, PB=perceived benefit, GP=Green Practices, LL=Lower Level, UP=Upper Level, ** = p -value < 0.01, ***= p value < 0.001

DISCUSSION AND CONCLUSION

Discussions

The aims of this study are to evaluate the roles of biospheric value and environmental awareness on top managers' environmental attitude in the hotel industry. Besides, the mediating function of perceived benefits between environmental attitude and hotels' green practices were assessed. The results showed that biospheric value was positively related to environmental attitude. The finding further confirmed that the pro-environmental value (i.e., biospheric value) leads to positive environmental attitude, which is in line with the study by Wang et al. (2021) and Tamar et al. (2021). The significant path between environmental awareness and environmental attitude are consistent with the prior study such as Khaleeli and Jawabri (2021). This shows that hotel's top managers who are concerned with the adverse consequences of human activities on the natural environment portray favourable psychological tendencies that promote the adoption of green practices in the hotels.

This study demonstrated that top managers' environmental attitude has a substantial influence on the perceived benefits of green practices in their organisation, thereby coincide with the study by Isock et al., (2018) and Park et al. (2014). Top managers who believe in the benefits of green practices showed higher adoption of environmentally friendly approaches. The finding on the positive linkage between perceived benefits and green practices adoption is in line with earlier studies, such as Fukey and Issac (2014) and Kim et al. (2017). Consistent with the findings by Park et al., (2014) in their sample among hotel key executives in the U.S., this study also found a full mediating effect of perceived benefits between environmental attitude and green practices. This shows that regardless of developed Western country or a developed country, like Malaysia, the hotels' top managers with positive environmental attitude are more prone to adopt green practices as they have the positive views about the benefits that can be generated through such strategy.

Implications

Theoretically, this study provides a novel enlightenment by examining the functions of top managers' biospheric value and environmental awareness on environmental attitude, and its subsequent impact on perceived benefits and green practices adoption by the hotels in Malaysia. Thus, this study extended Park et al.'s (2014) attitude-perceived benefits-behavioural model. The present research was performed from the point of view of the various hotels' top managers from a developing country in contrast to a well-developed country, like the U.S. This study further strengthens the notion of the significant path between environmental value (i.e., biospheric value) and attitude as proposed in the value basis theory (Stern & Dietz, 1994). From the upper echelon theory (Hamrick & Mason, 1984) perspective, key managers' personal or individual factors can influence the perception and organisational-level strategy.

From the practical perspective, the findings of this study suggest that intra-personal factors of the top managers/owners/key executives are critical for the hotel to embrace green practices. The hotel associations and Ministry of Tourism, Arts, and Culture Malaysia can work together in organising relevant talks, seminars, conferences, and even courses that relate to the hotel's environmental responsibility which can help to enhance their environmental awareness and promote biospheric values. Moreover, the hotel association can work together with the universities which offer hospitality management programmes to design short-term education courses that are suitable for the hotel managers or owners.

Since biospheric value is a critical factor that can affect one's environmental attitude. Hotels that are committed towards corporate greening should carefully screen the candidates who will fill the managerial position based on their values and attitudes towards the environment. The selection of the candidate is not only emphasizing on person-job fit, but also person-organisation fit, in which individual's value and belief are in congruence with the organisational culture (Kristof-Brown, Zimmerman, & Johnson, 2005).

As perceived benefits fully mediated the impacts of environmental attitude and adoption of green practices by the hotel. Therefore, if top managers' environmental attitude cannot be improved to indirectly enhance the adoption of green practices through perceived benefits, then the top managers need to be exposed with more facts and evidence that portray the benefits of green practices, which include the success story and experience of their counterparts in the industry.

Limitations and Conclusions

The present study is subject to several limitations. Firstly, the generalization of the study is limited by the relatively sample size in this study. Future research can collect data from more hotels, covering different size and types of hotels (independent hotels vs. chain hotels) so that a comparison on green practices by hotels can be made. Second, this study primarily focused on biospheric value orientation, without including other dimensions of personal values that can have an impact on a person's environmental attitude, such as altruistic value and egoistic value. Furthermore, the cross-sectional design nature of this study also limits the ability of the researchers to draw causality on the relationship between the variables. Future research can carry out a longitudinal study.

Despite of the above-mentioned limitations, this study provides valuable insights by further ascertain the value-attitude and environmental awareness-attitude relationship. This study showed that pro-environmental attitude of hotels' top managers is important as it leads to higher green practices adoption as they have favorable views about the benefits of such practices. Undeniable that the hotel industry faced with various challenges from the external environment, such as the health crisis that affect its operation, nevertheless embracing green practices not only able to help the hotels to gain the benefit in term of cost savings, but it is essential for environmental sustainability.

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BAFE024:
**iROBOT: CONCEPTUALISING SERVBOT FOR HUMANOID SOCIAL
ROBOTS**

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Abstract

Social robots are increasingly being used in the structured and repetitive environment, in the service sector, and for personal use. The use of robots during the pandemic is speeding up the process of employing social robots in customer service roles. However, these social robots have limited functionalities. There is a gap between the level of service provided by robots and the level of service expected by humans, sometimes large enough to render them useless. It is integral to understand the effectiveness of service quality of social robots before introducing them in public places. An extensive literature review shows that there is no service quality measurement tool available to study the effectiveness of a robots' service quality. It has been identified in the service quality literature that there are differences in the service quality of social robots and humans, therefore, the original SERVQUAL model is not adequate to measure a social robot's service quality. This paper conceptualises a novel SERVBOT questionnaire to examine the effectiveness of a robot's performance in a service environment and compare it with that of a human. The model identifies performance, reliability, responsiveness, assurance, empathy and entertainment as the six dimensions of SERVBOT. Further, the model shows how these six dimensions impact social engagement, emotional engagement, and behavioral intentions to use the social robot in a frontline service setting. Insights from this research will extend the application of the SERVQUAL model in social robotics and provide managers with a parsimonious tool to examine social robots' service quality before successfully introducing them in customer service.

Keywords: Service quality, Social Robots, Human-Robot Interaction, Retail

BAFE025: RESEARCH ON YUNNAN TOURISM PERFORMANCE BASED ON DEA METHOD

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Abstract

For human beings, tourism is a typical use of material to meet spiritual needs, thus forming an industry that contributes to the growth of the world economy. With its unique geographical features and humanistic feelings, Yunnan, China, has become an integral part of China's and even the world's tourism economy, and it is necessary to study the efficiency of its input and output. The advent of the era of big data has provided us with the basic data necessary for research. Based on this, we use the original statistical data of Yunnan's tourism business results and the literature review method combined with the observation trend analysis method and the Data Envelopment Analysis (DEA) basic model CCR-I as the calculation model. Select the input and output data of the tourism industry in Yunnan Province from 2010 to 2019 as the calculation data, and assume that the year is the decision-making unit (DMU) to examine the effectiveness of the annual input and output to evaluate the efficiency value of each year and understand the input, the shortcomings of output provide a basis for decision-making in the scientific management of Yunnan's tourism industry.

Keywords: Tourism; Data Envelopment Analysis; Big Data; Yunnan

INTRODUCTION

The tourism industry is known for its low investment and good benefits. It is known as a "green industry" and has greatly contributed to world economic growth. The latest annual study by the World Tourism Center (WTTC) shows that in 2019, the contribution rate of tourism to global GDP was 10.4%; due to continued restrictions on mobility, this proportion will drop to 5.5% in 2020. The World Tourism Organization predicts that the tourism industry in the 21st century will maintain strong growth momentum. China's tourism industry will become one of the industries that contribute the most to the country's economy. As a major tourism province in China, Yunnan Province has made outstanding contributions to China's tourism industry, demonstration role. As of the end of 2019, Yunnan's total tourism revenue was 1,229.169 billion Yuan, ranking 6th in the country, with a total number of tourists of 807 million, ranking 9th in the country, exceeding the 13th Five-Year Plan target. At the same time, the investment in Yunnan's tourism industry and related industries are also changing year by year. The investment in tourist attractions and travel agencies has increased to varying degrees, but star-rated hotels have decreased. As a result, we formed the basic theoretical motivation and data support for the efficient research of Yunnan's tourism industry. This article will introduce the preliminary results of our study on the efficiency of Yunnan's tourism industry to be beneficial to the management decision-making of Yunnan's tourism.

LITERATURE REVIEW

The efficiency of the tourism industry can be used to evaluate the quality of the development of the tourism industry. Liu Jia et al. (2015)^[1] explained a positive relationship between the efficiency of the tourism industry and the utilization and benefits of tourism resources. Knowing the efficiency of the tourism industry helps decision-makers decide the future direction of input and output to guide the development of the market.

At present, the research on the efficiency of the tourism industry in China involves many regions, such as Yuan Dan et al. (2013)^[2], Wang Huiyu et al. (2014)^[3] studied the efficiency of the tourism industry in western China, Zheng Wanteng et al. (2017)^[4], Wang Zhaofeng et al. (2018)^[5] studied the efficiency of the tourism industry in central China, Liu Jia et al. (2015)^[1] coastal areas, Yu Qiuyang et al. (2009)^[6] Yangtze River Delta and other provinces (autonomous regions, municipalities)

In addition, there are many fields of efficiency research in China's tourism industry, involving star hotels, such as Zhou Minrui et al. (2020)^[7], Xing Fumin et al. (2019)^[8]; travel agencies, such as Hu Yuna et al. (2018)^[9]; tourist attractions, such as Li Ying et al. (2020)^[10]; tourist destinations, such as Zheng Yanfen et al. (2021)^[11]; tourism listed companies, such as Ren Yi et al. (2017)^[12]; tourism industry, such as Long Zukun et al. (2015)^[13].

From the perspective of the efficient research methods used by Chinese researchers in the tourism industry in recent years, DEA research methods have evolved from a single CCR model to two stages, such as Huang Yuanji et al. (2017)^[14] and three-stage DEA research models, such as Jin Chunyu et al. (2012)^[15]; and a hybrid research method that combines DEA with complete factor analysis, spatiotemporal evolution analysis, et al., such as Cao Fangdong et al. (2014)^[16].

However, there are not many researches on the annual efficiency of the tourism industry in Yunnan, China. Therefore, this study adopts the CCR-I model, the original research model of the DEA method, to conduct basic research on the annual efficiency of the tourism industry in Yunnan province, explore the development trend of input-output and the efficiency of the Yunnan tourism industry each year.

THEORETICAL FRAMEWORK

The concept of "efficiency" was applied to the mechanical field earlier and was later cited by economic management scholars^[17]. It is the ratio of output to the input used to measure the output of each input unit. The research on the measurement of tourism industry efficiency began in the 1990s. It refers to specific areas as tourism economic production units within a certain time frame and tourism industry input to maximize output or allocate resources effectively. Reasonable use^[18].

After years of development, Yunnan's tourism industry has gradually become an important economic industry in the province. Scholars mostly use traditional productivity's connotation and measurement framework to measure and analyze tourism productivity in a single-factor or total-factor framework. This study takes changes in Yunnan's tourism industry development efficiency over the years as the research object. We show the research framework in the following figure:

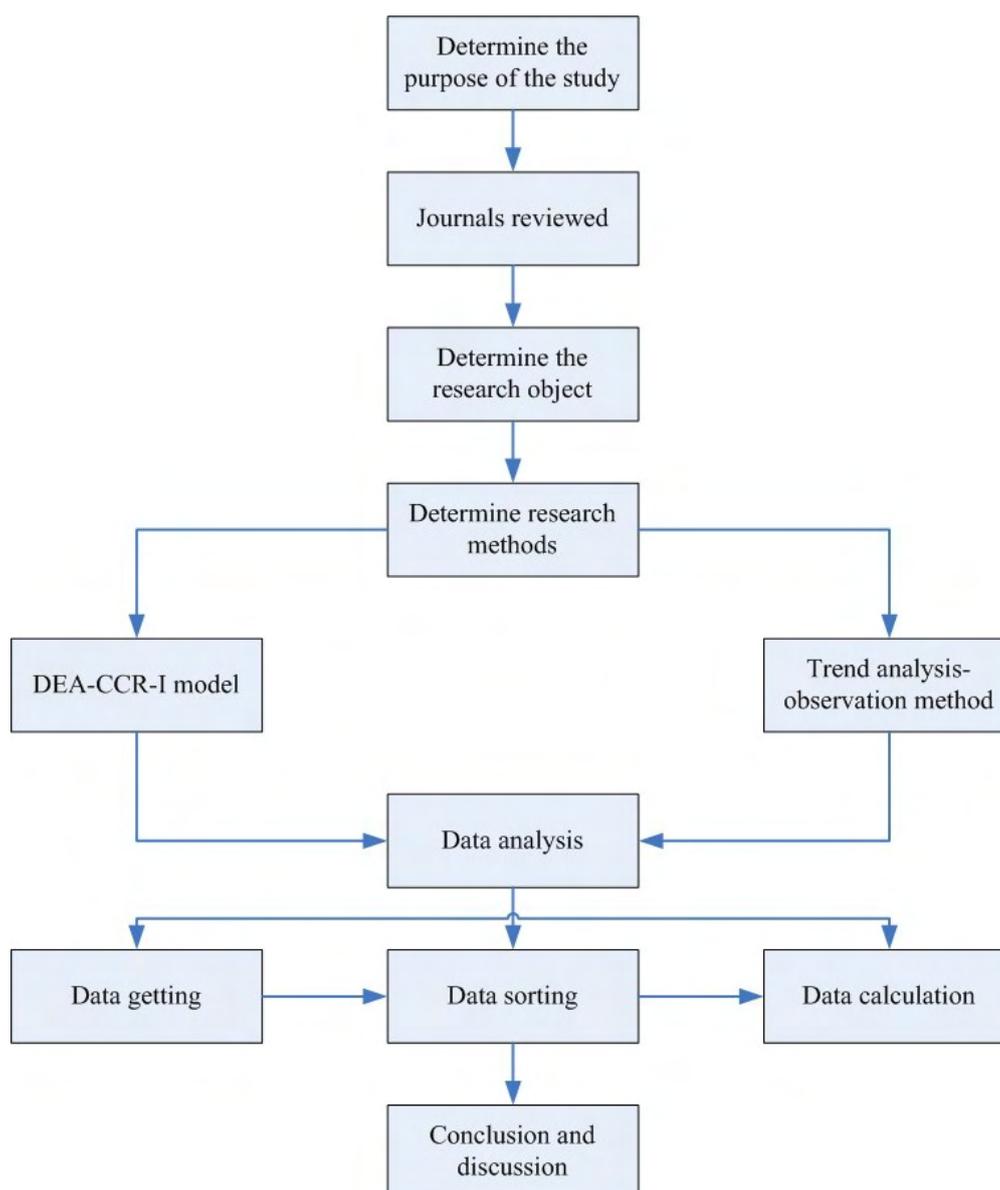


Figure 1 theoretical framework of Yunnan Tourism Performance Research Based on DEA

RESEARCH METHODOLOGY

3.1 Trend Analysis

The trend analysis method is an analysis method to find the development trend of the problem by analyzing the changing trend of the indicators in each period. In this study, the basic data and the results of the DEA study were analyzed by observing the trend of digital changes.

3.2 Data Envelopment Analysis

In 1978, A.Charnes, W.W.Copper, and E.Rhodes^[19] proposed the Data envelopment analysis (DEA). It is a non-parametric method that takes input and output as the relative performance to evaluate the relative effectiveness of the decision-making unit (DMU). Since the first DEA model was proposed in 1978, the DEA research method has been continuously improved and widely used in practice, especially for non-profit public service sectors and industries, such as tourism, which is considered an effective evaluation method. This method has unique advantages in evaluating the relative effectiveness of the social-economic system's multiple inputs and outputs.

3.3 CCR Model

CCR model is DEA's first model, divided into CCR-I input model and CCR-O output model. The linear programming of CCR-I input model is:

Suppose the input vector of a certain DMU is $x = (x_1, x_2, \dots, x_m)^T$, and the output vector is $y = (y_1, y_2, \dots, y_s)$. We use (x, y) to represent the running activities of the DMU.

There are n DMUs ($1 \leq j \leq n$), and the corresponding input and output vectors of the DMU are:

$$X_j = (x_{1j}, x_{2j}, \dots, x_{mj})^T > 0 \quad j=1, 2, \dots, n$$

$$Y_j = (y_{1j}, y_{2j}, \dots, y_{sj})^T > 0 \quad j=1, 2, \dots, n$$

$$\text{And } x_{ij} > 0, y_{rj} > 0, i=1, 2, \dots, m; r=1, 2, \dots, s$$

That is, each decision-making unit has m types of "inputs" and s types of "outputs".

x_{ij} is the input amount of the j^{th} decision-making unit to the i^{th} type.

y_{rj} is the output of the j^{th} decision-making unit for the r^{th} type.

Each decision-making unit DMU_j has a corresponding efficiency evaluation index:

$$h_j = \frac{u^T y_j}{v^T x_j} = \frac{\sum_{r=1}^s u_r y_{rj}}{\sum_{i=1}^m v_i x_{ij}} \quad (1)$$

$$j=1, 2, \dots, n \text{ and } h_j \leq 1.$$

Taking the efficiency index of the j_0 decision-making unit as the goal and taking the efficiency indexes of all the decision-making units as the constraint, the following CCR model is constructed:

$$\max h_{j_0} = \frac{\sum_{r=1}^s u_r y_{rj_0}}{\sum_{i=1}^m v_i x_{ij_0}} \quad (2)$$

$$\text{s.t. } \frac{\sum_{r=1}^s u_r y_{rj_0}}{\sum_{i=1}^m v_i x_{ij_0}} \leq 1 \quad (3)$$

$$\begin{aligned} j &= 1, 2, \dots, n \\ v &= (v_1, v_2, \dots, v_m)^T \geq 0 \\ u &= (u_1, u_2, \dots, u_s)^T \geq 0 \end{aligned}$$

CCR can be expressed by linear programming:

$$\min \theta, \text{ s.t. } \left\{ \begin{array}{l} \sum_{j=1}^n \lambda_j x_j + s^+ = \theta x_0 \\ \sum_{j=1}^n \lambda_j y_j - s^- = y_0 \\ \lambda_j \geq 0, \quad j = 1, 2, \dots, n \\ \theta \text{ Unconstrained, } s^+ \geq 0, s^- \geq 0 \end{array} \right. \quad (4)$$

The larger the value of θ , the higher the ranking of tourism industry efficiency in that year, and the higher the tourism efficiency.

DATA ANALYSIS

4.1 Data Source and Processing

The purpose of this evaluation study is to examine the effectiveness and improvement distance of Yunnan's tourism efficiency indicators in each year. In this study, the DEA basic model CCR-I model is selected as the calculation model, and the 2010-2019 Yunnan tourism industry input and expenditure data are selected as the calculation data. The year is assumed to be the decision-making unit (DMU) to examine the effectiveness of annual input and output to evaluate the efficiency value of each year, understand the shortcomings of input and output, and guide the future decision-making management work. The selection of input and output indicators is guided by the purpose and content of the evaluation. The content of the evaluation is the input and output data of each year.

The neoclassical economic theory believes that labor, capital, land, and resources are input elements and output-related benefits. Therefore, this study selects the number of scenic spots, travel agencies, star-rated hotels, and total fixed-asset investment in Yunnan Province from 2010 to 2019 as input elements. The service industry employees are the input variables, and the total tourism income and the number of tourists is the output variables. The original data are from the Yunnan Provincial Government's website, "*Yunnan Provincial Statistical Yearbook*" and "*China Tourism Statistical Yearbook*." The specific data are shown in the following table:

Table 1 Original data sheet

Year	Input					Output	
	Number of scenic spots	Number of travels agencies	Number of star-rated hotels	Investment of fixed	Number of employees	Total tourism revenue	Number of tourists
2010	137	531	560	5528.71	26.2103	1006.83	13836.82
2011	183	587	563	6185.3	31.4889	1300.29	16331.78
2012	146	602	480	7831.1	38.467	1702.54	19630.28
2013	151	622	563	9968.3	40.3742	2111.24	23792.35
2014	165	704	624	11498.58	36.3079	2665.741	28116.49
2015	232	766	614	13500.62	35.7	3281.79	32343.95
2016	233	855	559	16119.4	35.58	4726.25	42519.22
2017	231	900	518	18935.99	34.1511	6922.23	56672.12
2018	233	1185	458	19254.3	34.3617	8991.44	68141.72
2019	343	1105	415	19280.7	32.9219	11035.2	79977.77

4.2 Data Analysis

In order to understand the development trend of the original data more intuitively, we have drawn a change trend chart for each input and output indicator.

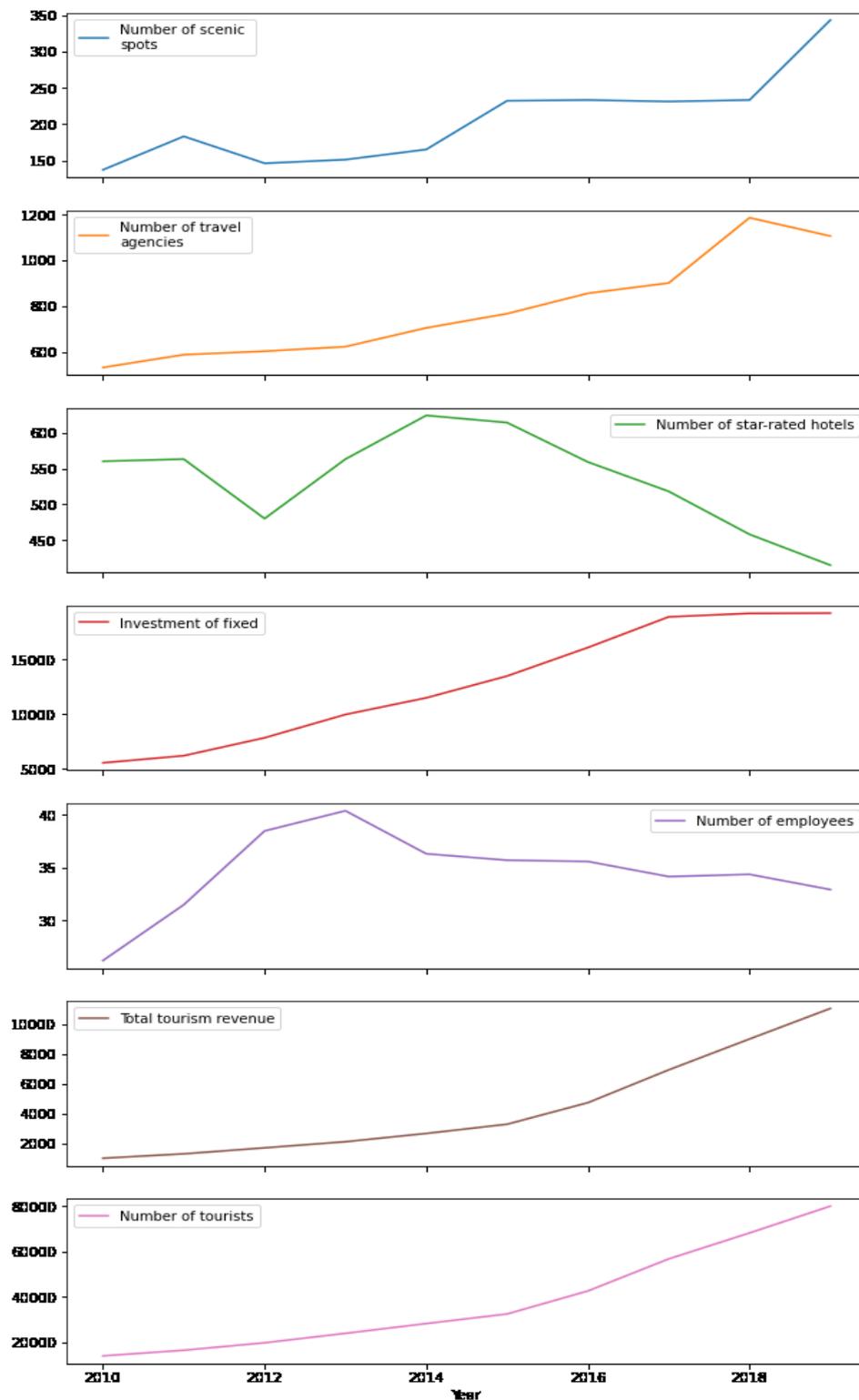


Figure 2 Change trend of input and output indicators of tourism industry in Yunnan Province (2010- 2019)

According to the statistical data of the tourism industry in Yunnan Province, we used the CCR model to calculate the effectiveness of DEA, the average comprehensive evaluation index value, and the ranking from 2010 to 2019. Since the calculation unit has little effect on the calculation result of the DEA method, we omitted the data Unit; the calculation results are shown in the following table:

Table 2 Tourism DEA Evaluation Results of Yunnan Province with Total Tourism Revenue as the Only Output

Year	Number of scenic spots	Number of travel agencies	Number of star-rated hotels	Investment of fixed	Number of employees	Overall score	Effectiveness	Ranking
2010	0.190442	0.189864	0.067614	0.318182	0.114601	0.318182	invalid	10
2011	0.184126	0.221812	0.086856	0.367301	0.123193	0.367301	invalid	9
2012	0.302184	0.283193	0.13339	0.379854	0.132042	0.379854	invalid	8
2013	0.362316	0.339883	0.141025	0.370049	0.156005	0.404642	invalid	7
2014	0.418659	0.379164	0.160658	0.405057	0.219039	0.4558	invalid	5
2015	0.366564	0.429007	0.201007	0.424717	0.27425	0.435942	invalid	6
2016	0.525639	0.553519	0.31796	0.512284	0.396292	0.601649	invalid	4
2017	0.776534	0.770168	0.502556	0.638705	0.604708	0.868729	invalid	3
2018	1	0.759789	0.738298	0.815913	0.780655	1	valid	1
2019	0.833706	1	1	1	1	1	valid	1

Table 3 Tourism DEA evaluation results of Yunnan Province with the number of tourists as the only output

Year	Number of scenic spots	Number of travel agencies	Number of star-rated hotels	Investment of fixed	Number of employees	Overall score	Effectiveness	Ranking
2010	0.345349	0.360027	0.128212	0.603345	0.21731	0.603345	invalid	9
2011	0.305158	0.384404	0.150523	0.636541	0.213497	0.636541	invalid	6
2012	0.459744	0.450529	0.212209	0.604306	0.210065	0.604306	invalid	8
2013	0.53877	0.528494	0.219284	0.5754	0.242577	0.617504	invalid	7
2014	0.582666	0.5518	0.233806	0.589482	0.318769	0.646923	invalid	5
2015	0.476703	0.583388	0.27334	0.577554	0.372941	0.591437	invalid	10
2016	0.623982	0.687088	0.394687	0.635902	0.491921	0.737567	invalid	4
2017	0.838881	0.870001	0.567699	0.721498	0.683094	0.963526	invalid	3
2018	1	0.794489	0.772016	0.853176	0.816308	1	valid	1
2019	0.797293	1	1	1	1	1	valid	1

Table 4 DEA Evaluation Results of Tourism in Yunnan Province Based on Total Tourism Revenue and Total Number of People

Year	Number of scenic spots	Number of travel agencies	Number of star-rated hotels	Investment of fixed	Number of employees	Overall score	Effectiveness	Ranking
2010	0.345349	0.360027	0.128212	0.603345	0.21731	0.603345	invalid	9
2011	0.305158	0.384404	0.150523	0.636541	0.213497	0.636541	invalid	6
2012	0.459744	0.450529	0.212209	0.604306	0.210065	0.604306	invalid	8
2013	0.53877	0.528494	0.219284	0.5754	0.242577	0.617504	invalid	7
2014	0.582666	0.5518	0.233806	0.589482	0.318769	0.646923	invalid	5
2015	0.476703	0.583388	0.27334	0.577554	0.372941	0.591437	invalid	10
2016	0.623982	0.687088	0.394687	0.635902	0.491921	0.737567	invalid	4
2017	0.838881	0.870001	0.567699	0.721498	0.683094	0.963526	invalid	3
2018	1	0.794489	0.772016	0.853176	0.816308	1	valid	1
2019	0.833706	1	1	1	1	1	valid	1

Table 5 Tourism DEA evaluation results of Yunnan Province with total tourism revenue as the only output

Year	Number of scenic spots	Number of travel agencies	Number of star-rated hotels	Investment of fixed	Number of employees	Ranking
2010	9	10	10	10	10	10
2011	10	9	9	9	9	9
2012	8	8	8	7	8	8
2013	7	7	7	8	7	7
2014	5	6	6	6	6	5
2015	6	5	5	5	5	6
2016	4	4	4	4	4	4
2017	3	2	3	3	3	3
2018	1	3	2	2	2	1
2019	2	1	1	1	1	1

Table 6 DEA evaluation results of tourism in Yunnan Province with the number of tourists as the only output

Year	Number of scenic spots	Number of travel agencies	Number of star-rated hotels	Investment of fixed	Number of employees	Ranking
2010	9	10	10	7	8	9
2011	10	9	9	4	9	6
2012	8	8	8	6	10	8
2013	6	7	7	10	7	7
2014	5	6	6	8	6	5
2015	7	5	5	9	5	10
2016	4	4	4	5	4	4
2017	2	2	3	3	3	3
2018	1	3	2	2	2	1
2019	3	1	1	1	1	1

Table 7 Tourism DEA evaluation results of Yunnan Province based on total tourism revenue and total number of people

Year	Number of scenic spots	Number of travel agencies	Number of star-rated hotels	Investment of fixed	Number of employees	Ranking
2010	9	10	10	7	8	9
2011	10	9	9	4	9	6
2012	8	8	8	6	10	8
2013	6	7	7	10	7	7
2014	5	6	6	8	6	5
2015	7	5	5	9	5	10
2016	4	4	4	5	4	4
2017	2	2	3	3	3	3
2018	1	3	2	2	2	1
2019	3	1	1	1	1	1

Table 8 Statistics on Input and Output Data

	Number of scenic spots	Number of travel agencies	Number of star-rated hotels	Investment of fixed	Number of employees	Total tourism revenue	Number of tourists
Max	343	1185	624	19280.7	40.3742	11035.2	79977.77
Min	137	531	415	5528.71	26.2103	1006.83	13836.82
Average	205.4	785.7	535.4	12810.3	34.5563	4374.355	38136.25
SD	59.26247	212.4194	63.69647	5136.576	3.69464	3308.523	21821.76

Table 9 Correlation

	Number of scenic spots	Number of travel agencies	Number of star-rated hotels	Investment of fixed	Number of employees	Total tourism revenue	Number of tourists
Number of scenic spots	1	0.828226	-0.54301	0.816185	-0.07396	0.887374	0.886307
Number of travel agencies	0.828226	1	-0.62512	0.936027	0.041265	0.964285	0.970054
Number of star-rated hotels	-0.54301	-0.62512	1	-0.46849	0.060377	-0.71877	-0.68293
Investment of fixed	0.816185	0.936027	-0.46849	1	0.17207	0.916366	0.941736
Number of employees	-0.07396	0.041265	0.060377	0.17207	1	-0.02274	0.015429
Ranking	0.887374	0.964285	-0.71877	0.916366	-0.02274	1	0.997564
Number of scenic spots	0.886307	0.970054	-0.68293	0.941736	0.015429	0.997564	1

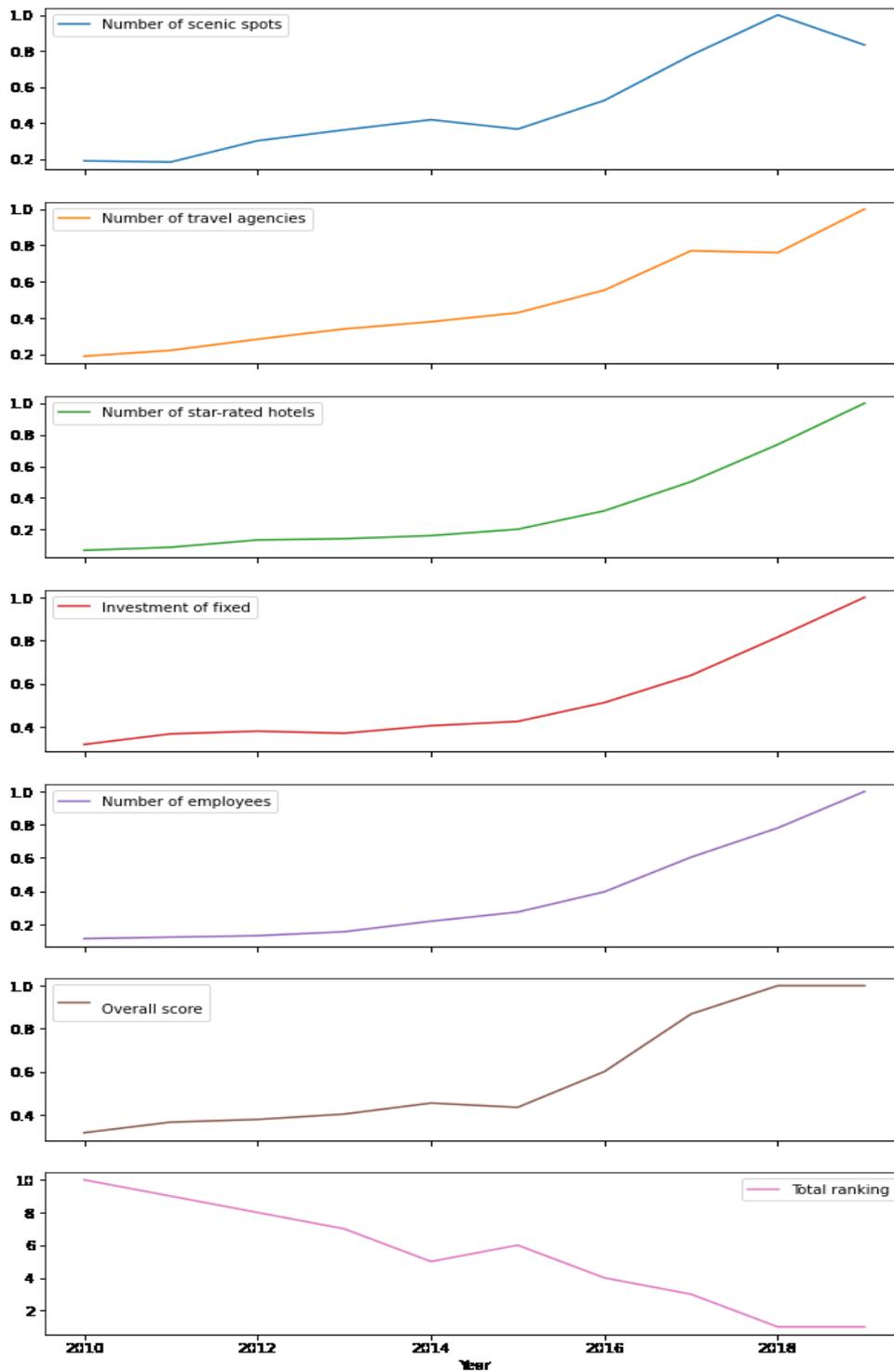


Figure 3 Ranking of Yunnan Province Tourism DEA Evaluation Results with Total Tourism Revenue as the Only Output

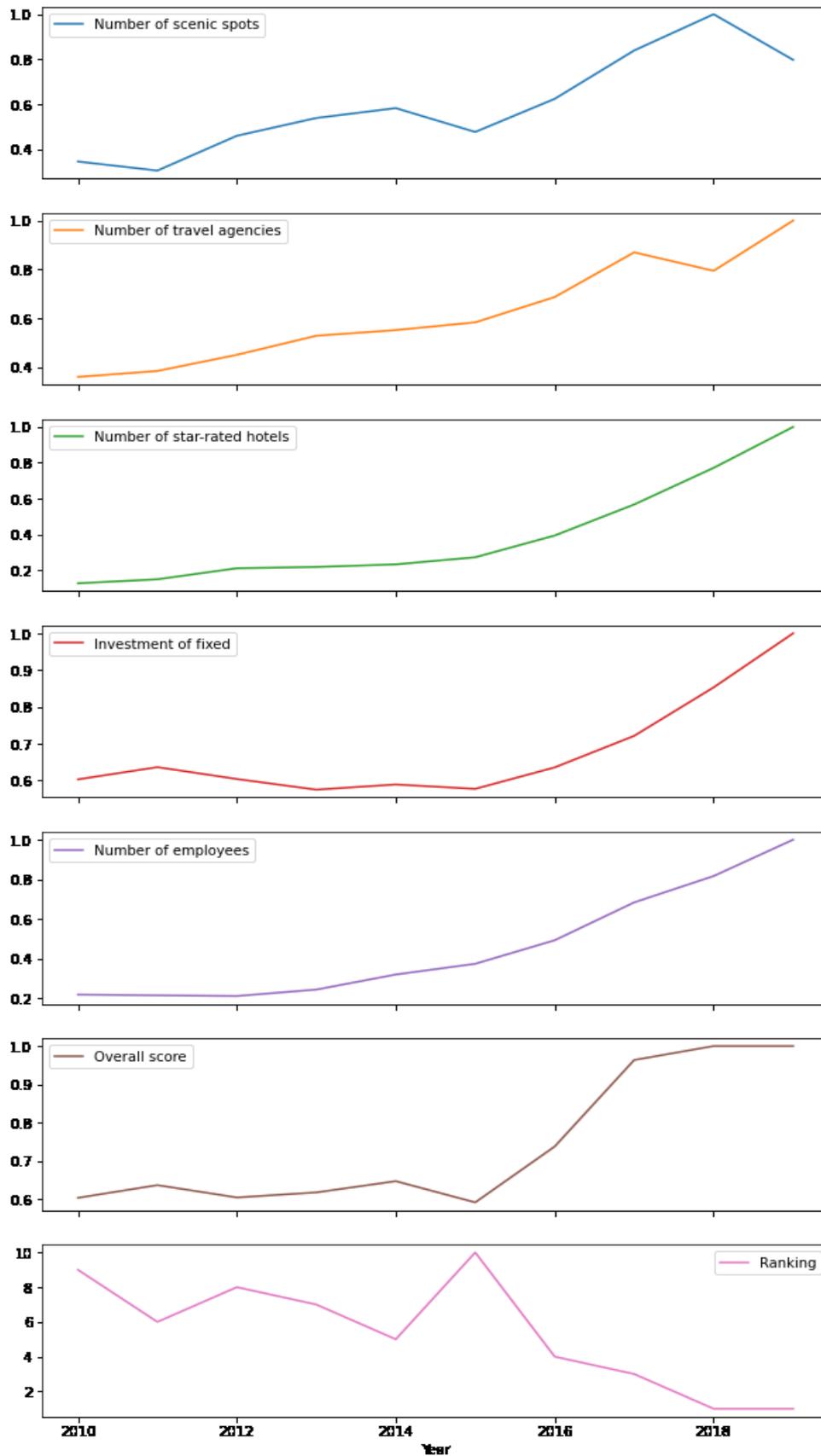


Figure 4 Ranking of Yunnan Province Tourism DEA Evaluation Results Based on the Number of Tourists as the Only Output

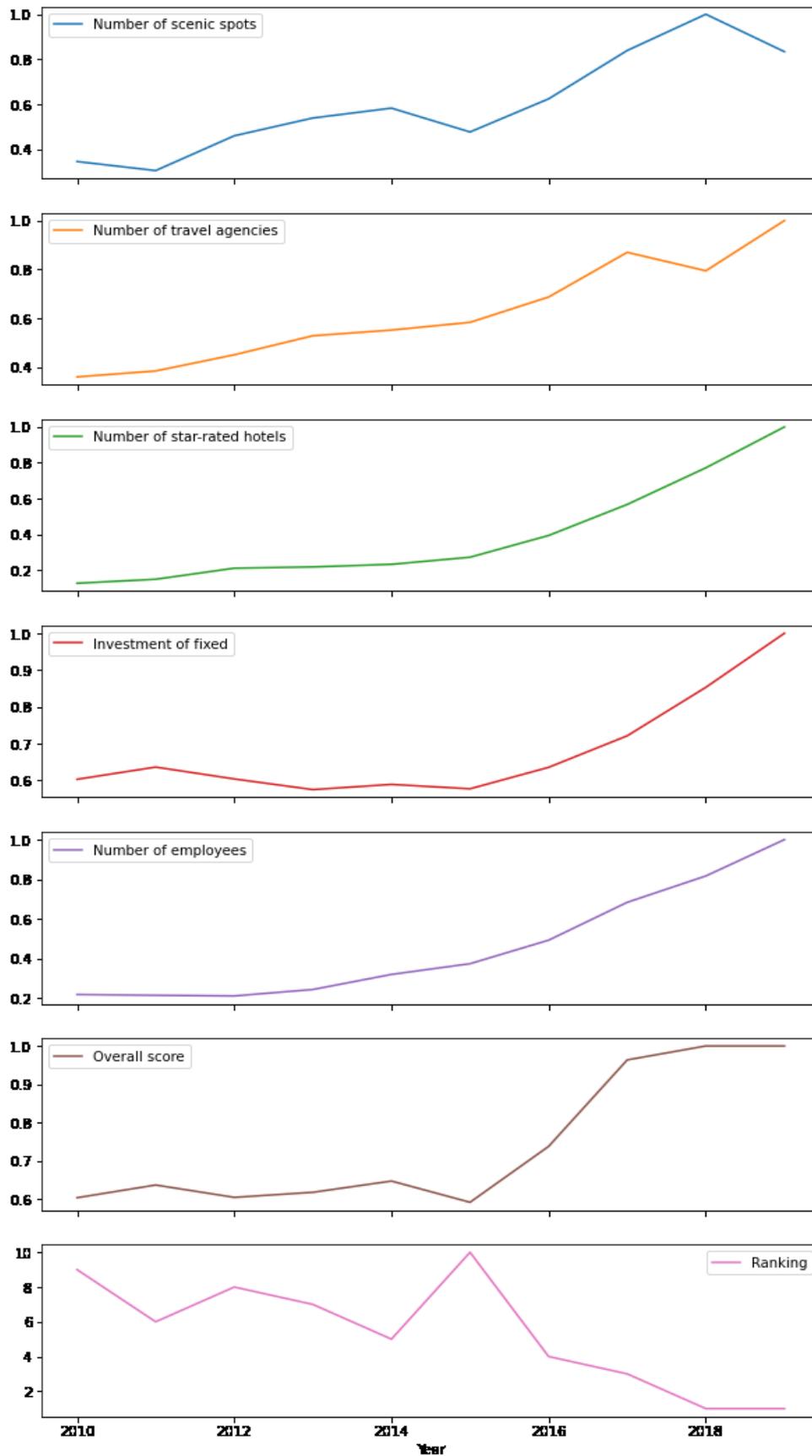


Figure 5 Ranking of Yunnan Province Tourism DEA Evaluation Results Based on Total Tourism Revenue and Total Number of People

CONCLUSION AND DISCUSSION

5.1 Conclusion

From the change trend chart of various indicators, we can see that the output indicators have been rising, but the number of travel agencies, star-rated hotels, and the number of employees in the input indicators has all declined to a certain extent.

From the calculation data of ten years, the tourism industry in Yunnan Province was effective in the 2018 and 2019 DEA, and it has good development potential in the future. The worst is 2015, with the number of tourists; the total tourism receipts and evaluation indicators are two calculations. The results all ranked bottom; but in 2010, the tourism DEA evaluation results of Yunnan Province, which used the total tourism revenue as the only output, ranked last.

Judging from the ranking of the tourism DEA evaluation results of Yunnan Province, the efficiency ranking of the number of star-rated hotels has been declining, and other indicators have fluctuated to varying degrees.

After ten years of adjustments, tourism investment in Yunnan Province has reached the best value of efficiency, and there is no need to increase investment for the time being. However, from the analysis of this study, we found a new problem. The number of star-rated hotels and the number of employees in Yunnan Province has decreased year by year since 2015. However, the tourism industry's revenue has been rising, and the input-output efficiency was rising in 2018. Whether it has reached the optimal level in 2019, whether other alternative factors promote the increase of tourism industry income and lead to the efficiency and effectiveness of input and output needs to be further studied. In addition, the DEA evaluation result of tourism in Yunnan Province, which uses the number of tourists as the only output, is very close to the DEA evaluation result of tourism in Yunnan Province. We use the total tourism income and the total number of people as the output whether it shows alternative investigation factors for the two remains to be further studied.

5.2 Discussion and Deficiencies

Since our study only collected basic data from 2010 to 2019 and did not obtain data during the 2020 epidemic, it is impossible to investigate the efficiency of tourism in Yunnan Province from the current "double-cycle" economic perspective, combined with the DEA model and the research needs to be further deepened. In addition, due to the shortcomings of the CCR model, we cannot intuitively understand the adjustment range of the output, so we need to use other models to adjust and correct the data. Furthermore, we combine the DEA model with the development trend analysis to avoid the influence of the static analysis of the DEA model, but the development trend analysis is not sufficient as a basis for dynamic analysis and needs to be further strengthened.

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BAFE028:
**A STUDY ON THE FACTORS THAT INFLUENCE CONSUMER
PURCHASE DECISIONS: A STUDY INVOLVING MULTINATIONAL
SKINCARE FIRMS**

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Abstract

The objective of this research is to realize the factors that influence consumer purchase decision involving multinational skincare firms. This research paper investigates multiple selective variables such as perceived price of product, perceived quality of product and product's country of origin. The manner in which these variables may influence the buying decision of consumers has been analyzed. The results of this research indicate that the mentioned factors do influence consumers' purchasing decision when concerning multinational skincare firms. The respondents of this study include young adults from Subang Jaya, a city in the Petaling district of Malaysia. This study applies the SPSS statistical software to examine the descriptive analysis, reliability test, Pearson's correlation analysis and multiple regression analysis to discover the relationship between the variables. The descriptive analysis has been applied to identify the demographic information.

Keywords: Consumer purchase decision, multinational skincare firms, perceived price, perceived quality, country of origin

INTRODUCTION

The growing globalization and technological advancements in communication and logistics have exposed and enabled consumers to have access to large varieties of products and services from various nations (Ahmed, 2014). Within the same product categories, consumers have different perceptions toward multinational and local brands (Herche, 1994). Improvements of the above factors provide people with more choices and better lifestyle standards. The consumption trend associated with the development of purchasing power include the increasing awareness of beauty products among consumers, which has affected the skincare industry. To examine the factors that affect the consumer's purchasing decision involving multinational skincare products, the independent variables chosen for this study are: perceived price, perceived quality and country of origin. The dependent variable is consumer purchasing decision since the aim of this study is to determine whether a product's perceived price, perceived quality and country of origin have an effect on consumers' purchasing decisions.

LITERATURE REVIEW

Perceived Price of Product Among Consumers

The process by which an individual selects, organizes and interprets information in one's mind is called perception (Kotler & Keller, 2009). The results have shown that consumer's perceived price is formed according to the actual price and the reference price (Winer, 1986; Erickson & Johansson, 1985). It was indicated that when consumers make purchasing decisions, they is a small amount of comparison between the subsequent objective price and the internal reference price, knowing that it is the overall final price level or range that consumers perceive for the product category (Winer, 1986). Perceived price is the consumer perceptions of price (encoded by consumers). The price perception is an important concept for understanding how consumers interpret prices in terms of their internal price criteria or competitive prices (Oh, 2000). Perception of price is formed by objective monetary price which is the actual price of products and services as well as the

nonmonetary price (Jacoby & Olson, 1977). Research states that when consumers are making purchasing decisions, the objective price is compared with the internal reference price, which is the overall price level perceived by the customer (Winer, 1986). Consumers encode the prices that are meaningful for them to label the price as either 'cheap' or 'expensive' in their mindset (Zeithaml, 1988). Perceived price can also be measured by the fairness of paying the price. Therefore, the more reasonable the price paid, the more satisfied the customer will be with the price of the product or service (Clemes et al., 2008). It was suggested in the literature that attributes of perception include five components: (1) consumers trust product quality according to the quotation, (2) that manufacturers provide product sales, (3) compared to competitors, the price of the factory gate prices are reasonable, (4) overall, consumers are satisfied with the price of the product, and (5) consumers will consider information from experts on the price of a product before buying (Chich, 2012). In addition, research had stated that attributes of price perception include 2 components: (1) generally, a high-priced product reflects a high-quality product; (2) buying brand products with high prices make consumers feel classy (Feick & Price, 1987). Other research show that price positively affects the perception of quality and directly influences the willingness to purchase (Dodds & Monroe, 1985).

Perceived Quality of Product Among Consumers

The notion indicates that perceived quality is affected by price and the intrinsic features of a product (Monroe & Krishnan, 1985; Olson & Jacoby, 1972). Perceived price and perceived quality are assumed to be important in the information of value perceptions. Positive perceived quality is connected to perceived value, and negative price perception is connected to perceived value (Sawyer & Dickson, 1984; Zeithaml, 1988). A high perceived value is expected to direct to the willingness to buy (Dodds & Monroe, 1985; Monroe & Chapman, 1987) and then purchase (Zeithaml, 1988). A previous study has shown that price is an important factor that influences the consumer purchasing decision, but other factors (for example, perceived quality) are also crucial in the process of consumer purchasing decision (Giovanis et al., 2013). Perceived quality is the evaluation of a consumer's perception of product quality which influences their overall judgement on the superiority of a product (Tsiotsou, 2006; Zeithaml, 1988). Perceived quality will be affected by two factors: subjective perception of consumer and environmental context (Zeithaml & Bitner, 2000). An increase in the perceived quality is one of the factors that leads companies to success, allowing them to achieve a competitive advantage (Ranjbarian, 2012). A finding has indicated that perceived quality is one of the most important factors which form consumer satisfaction. Consumers with higher perceived quality will have greater purchasing intentions (Zeithamal, 1988).

In conclusion, the perceived price of consumers is one of the major variables in purchasing decisions, as well as the evaluation of perceived value (perceived price and quality). When product recognition is limited, consumers often regard price as a key external quality signal (Shanahan, T., Tran, T. P., & Taylor, E. C. (2019). The better the quality, the higher the price seems to be. A few studies have shown that perception of price inequality has a negative impact on consumers' purchasing decisions. Price can be an indicator of the level of quantity and quality to be sacrificed for purchase. Perceived value plays a crucial role in the purchasing decision. Generally, a much larger perceived quality creates an elevated perceived value (Monroe & Krishnan, 1985; Zeithaml, 1988). A positive relationship exists between perceived quality and value. Many researchers have considered that perceived value is relative to the emotional responses of consumer experiences, which can affect the consumer's purchasing decision in future (Sweeney & Soutar, 2001; Petrick, 2004; Dumana & Mattil, 2005).

Country of Origin of Product

Previous research has shown that consumers assume that products created in the west and in developed countries to be of better quality than those made in less developed parts of the world (Bilkey & Nes, 1982). A study had shown that the impact of a product's country of origin on consumers is different, such as brands, warranty and price, in contrast to other tangible attributes (Insch & McBride, 2004). Buyers use the country of origin as an indicator of product quality (Lee & Lee, 2009). The country of origin has become a significant phenomenon in consumer behaviour studies. Several research have shown that consumer behaviour will be influenced by the country of origin. Therefore, it is an important factor for understanding consumer behaviour. Understanding the variables that can influence the decision-making process in the purchasing decision for specific products is highly necessary (Schiffman, Kanuk & Wisenblit, 2010). Globalization provides companies

with the opportunity to sell products around the world, as well as the opportunity for potential customers to choose between different types of products. Based on this reason, the country of origin is a key factor to examine consumer purchasing behaviour according to different types or categories of products. The product label usually provides information to consumers on the firm and country of origin of that product (Chen, Wu & Chen, 2011; Michaelis et al., 2008). The level of competition for a country's brand image is important to the company and its products because this image creates a favourable impression of the product brand produced in that country (Alonso & Blasco, 2006). The country of origin refers to where a brand is based in or where the product is manufactured. These two factors are important signs for consumers when evaluating a product. The multinational brands and the brand's origin are usually different. This difference is one source of ambiguity. It decreases the consumer's evaluation of products and influences their purchasing intention (Johnson, Tian & Lee, 2016; Chi, X., Lee, S. K., Ahn, Y. J., & Kiatkawsin, K. (2020).

The country of origin can be labelled in several ways, such as the "country of manufacture", "country of assembly" and "country of design". It has the power to audit the date of the product and influence the customer's purchasing behaviour. Consumers will consider different countries according to their consciousness and beliefs; therefore, it is possible that their purchases will be affected by this impact (Torres & Gutiérrez, 2007). On the other hand, some consumer perceptions arise from the country's economy. Although Malaysians take pride in their products and export them abroad, they generally believe that foreign products from developed countries, such as the US, are of higher quality than those produced at home (Garten, 2002).

Consumer Purchase Behaviour

According to previous studies, the purchasing behaviour is a set of attitudes attributed to the patterns of consumer choices (Dawson, 2006). It has been suggested that consumers often compare the objective price together with the internal reference price when involved with purchase decisions (Winer, 1986). In this globalization era with technological advancements in transportation and survey methods, consumers can easily search and purchase goods and services online with the abundant information out there. The improvement in the education level of consumers further enables them to be more aware of product ingredients, attributes, country of origin and brand images (Guzmán et al., 2012). The global skincare industry, especially professional skin care, has emerged strongly. Nowadays, the women are not the only ones who need beauty care, male consumers are also increasingly entering the skincare market (Khuong & Duyen, 2016). In today's unpredictable weather, everyone needs a skin care routine that can protect their skin from harsh environments (Khuong & Duyen, 2016). Therefore, this research explores the link between perceived price and the perceived quality of products. The way in which the product's country of origin influences consumers' purchasing decisions involving multinational skincare products is also assessed.

Overall, the findings of this research will benefit society, marketers and managers. Firstly, research shows that product price is the main variable that marketers use to influence the purchasing decisions of potential consumers. This study helps consumers (society) make effective decisions regarding these variables. Secondly, this study aids managers of new and existing skincare companies to decide what information to include in the communication package of products to influence consumer purchases (Chang & Wildt, 1994). It has been suggested that a good strategy builds a strong perception of value through comparative advertising campaigns that emphasize a strong price advantage while highlighting the product as a market leader (Chang & Wildt, 1994). Nowadays, in the competitive business environment, understanding the decision-making process of consumers is a subject that enterprise managers must examine (Sheth & Mittal, 2004). The literature had focused on five traditional points in the decision-making process (Kotler & Keller, 2006). The decision-making process includes the need for recognition, information search, evaluation of alternatives, purchase decision and post-purchase behavior (Kotler & Keller, 2006). These five stages of the decision-making process are usually used as serious tools for marketers to gain a better understanding of consumers and their behaviour (Commegys, 2006). Consumers play the role of buyer, payer and user in the marketplace when making purchasing decision (Sheth & Mittal, 2004). Regarding previous findings, it has been noted that these five stages of the decision-making process require considerable cognitive efforts, which consumers may be reluctant to invest. Much of the research on consumer decision-making had focused on the cognitive process in which buying behaviour takes place (Wright, 1975). The purchasing decision of consumers may not only rely on

previously acquired product information, but also on the judgements of brand satisfaction that occur in the post-purchase evaluation stages.

Thus, based on the literature content, the following are the research questions and study objectives:

Research Questions

- Is there a relationship between perceived price of product and consumer purchasing decision involving multinational skincare firms?
- Is there a relationship between perceived quality of product and consumer purchasing decision involving multinational skincare firms?
- Is there a relationship between country of origin of product and consumer purchasing decision involving multinational skincare firms?

Research Objectives

- To show a relationship between perceived price of product and consumer purchasing decision involving multinational skincare firms
- To show a relationship between perceived quality of product and consumer purchasing decision involving multinational skincare firms
- To show a relationship between country of origin of product and consumer purchasing decision involving multinational skin care firms

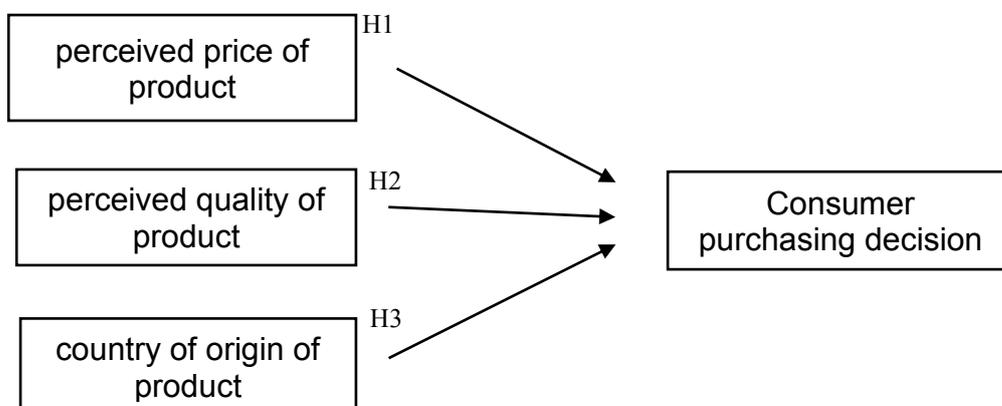
Based on the literature review, the following hypotheses have been created:

- H1: There is a positive relationship between perceived price of products and consumer purchasing decision involving multinational skincare firms.
- H2: There is a positive relationship between perceived quality of products and consumer purchasing decision involving multinational skincare firms.
- H3: There is a positive relationship between a product's country of origin and consumer purchasing decision involving multinational skincare firms.

THEORETICAL FRAMEWORK

The framework presented in Figure 1 displays the relationship between the independent variables and the dependent variable. Each independent variable points towards consumer purchasing decision (the dependent variable). The framework is as follows.

Figure 1: The theoretical framework



RESEARCH METHODOLOGY

Research Procedure and Sampling Design

This study adopted the quantitative research method and collected original data through the questionnaire survey. The 22-item questionnaire gathered information on demographics, perceived price, perceived quality and country of origin. The questionnaire was designed to answer the research questions and to learn more about how the factors affect the purchases of respondents in Subang Jaya, on the basis of multinational skincare products.

The questionnaire consists of three parts: the first part is the introduction of the survey; the second part focuses on the demographic data of lecturers and students; and the final part consists of questions about the dependent and independent variables. Each section serves as a data source for the study. To test the variables, all questions were presented in a 5-point Likert scale and the answer options given ranged between 1 to 5 (1 = strongly disagree, and 5 = strongly agree). The questions related to perceived price determine how respondents perceive the prices of multinational skincare products. The questions related to perceived quality assess how respondents perceive the quality of multinational skincare products. The questions related to the country of origin examine how respondents perceive products of multinational skincare firms. The questions related to the consumer purchasing decision analyse the level of satisfaction of respondents in case they did purchase from multinational skincare firms.

Data Analysis Procedures

Data were collected and analysed with the SPSS statistical software. The results of this study were verified by the SPSS software to ensure the reliability of the framework. The analysis methods include descriptive analysis, reliability test, Pearson's correlation test and the regression test. These tests were conducted to confirm the hypotheses.

Descriptive Analysis

In this study, the descriptive analysis identified the demographics (Loeb et al., 2017). In SPSS, the frequency distribution can be presented in the form of tables, pie charts, etc. The descriptive analysis includes an analysis of Section 2.

Reliability Test

The reliability test refers to the extent to which data collection techniques made by researchers will produce consistent findings or will be transparent in the sense of the original data (Saunders, 2009). The Cronbach's alpha should be between 0 and 1. The scale results of 0.7 and above are considered acceptable. The higher the reliability test results, the easier it is to obtain significant outcomes.

Pearson's Correlation Test

The SPSS provides the Pearson's correlation results to measure the strength of the linear relationship between the dependent and independent variables. Therefore, this study employed the Pearson's correlation test to calculate the relationship between the dependent and independent variables. A 2-tailed test was carried out since the hypotheses are two-way questions. The correlation results ranged between 0.00-0.05. The resulting sign determines the direction of the relationship between the two variables. A positive sign indicates that as one variable becomes larger, the other tends to become larger as well (De Coster & Claypool, 2004).

Regression Test

The regression analysis allows people to predict the values of the dependent variable from other independent variables and provides information about whether the overall fit of the model is reliable. For the regression analysis, the value in the adjusted R square is used to measure the fit of the model (De Coster & Claypool, 2004). The results of the multiple linear regression analysis are shown for predicting the purchase decisions of respondents based on prior test factors.

DATA ANALYSIS

Descriptive Analysis

The SPSS 25.0 was used for the descriptive analysis of the demographic data. Descriptive analysis is a method of converting raw data into an informative form that enables us to analyse the results of the questionnaires received. The response rate was 83.33 percent.

Frequency of Target Respondents Based on Gender Group

Table 1 presents the gender distribution in this survey. Among the interviewees, 187 are women (accounting for 74.8 percent) and 63 are men (accounting for 25.2 percent). A total of 250 respondents had completed the survey.

Table 1: Gender group (n=250)

Gender	Frequency	Percentage (%)
Female	187	74.8
Male	63	25.2
Total	250	100

Frequency of Target Respondents Based on Age Group

According to Table 2, the majority of respondents are aged between 18 and 25 years (63.2%). Respondents aged 17 and under accounted for 20.8%, and those aged 26-30 accounted for 9.2%. Around 3.6% of respondents are aged 35 and above, while the remaining 3.2% are aged between 31 and 35.

Table 2: Age group (n=250)

Age	Frequency	Percentage (%)
17 and below	52	20.8
18-25	158	63.2
26-30	23	9.2
31-35	8	3.2
35 and above	9	3.6
Total	250	100

Frequency of Target Respondents Based on Race Group

As shown in Table 3, most respondents are Chinese, a total of 150 (60%), followed by Malays, a total of 75 (30%). Indians consisted of 20 respondents (8%) and other races such as Turkish and Australoid accounted for 5 respondents (2%).

Table 3: Race group (n=250)

Race	Frequency	Percentage (%)
Chinese	150	60
Malay	75	30
Indian	20	8
Other	5	2
Total	250	100

Frequency of Target Respondents Based on Highest Level of Education Qualification

Table 4 displays the highest education level of our respondents. Most respondents are holders of bachelor's degrees and professional qualifications, around 50.8%. The SPM and O-level

holders consist of 34.0%, while diploma and advanced diploma holders consist of 12.8%. Respondents who have a Masters or Doctor of Philosophy consist of 2.4% out of 100%.

Table 4: Highest education attained group (n=250)

Highest Level of Education	Frequency	Percentage (%)
SPM/ O-Level	85	34
Diploma/Advanced Diploma	32	12.8
Bachelor Degree/ Professional Qualification	127	50.8
Master/Doctor of Philosophy (PhD)	6	2.4
Total	250	100

Frequency of Target Respondents Based on Monthly Income/Allowance

According to Table 5, respondents with a monthly income of RM 2001 to RM 3000 account for 39.6%, followed by the monthly incomes between RM 1000 to RM 2000 which constitute 32% of total respondents. Respondents with a monthly income between RM 3001 to RM 4000 account for 15.6%, while those with a monthly income of RM1000 and below are 10%. The remaining 2.8% are those with a monthly income of RM 4000 and above.

Table 5: Monthly income/allowance group (n=250)

Monthly income/allowance	Frequency	Percentage (%)
RM 1000 and below	25	10
RM 1001 to RM 2000	80	32
RM 2001 to RM 3000	99	39.6
RM 3001 to RM 4000	39	15.6
RM 4000 and above	7	2.8
Total	250	100

Reliability Analysis

The reliability test is used to calculate the stability and consistency of variables, while Cronbach's alpha is employed to measure the reliability of constructs in the questionnaire. The Cronbach's alpha range that is greater than 0.9 indicates excellent internal consistency, while greater than 0.8 and less than 0.9 is considered good, greater than 0.7 is acceptable and less than 0.5 is poor (George & Mallery, 2003). From Table 4.6, the Cronbach's alpha of consumer purchasing decision is 0.698. According to research findings, this value is acceptable and reliable (Hair et al., 2006). The Cronbach's alpha value of perceived price is medium, with the figure of 0.512. According to researchers, the Cronbach's alpha must be greater than 0.5 in order to be acceptable (Hair et al., 2006). This means that the perceived price is considered to be reliable. Perceived quality, with a Cronbach's alpha value of 0.695, is acceptable based on the rule of thumb. The country of origin factor produced the highest Cronbach's alpha of 0.821. This is considered to be a good result based on the literature. The variables that are reliable and acceptable include country of origin, perceived quality and perceived price.

Table 6: Results of the reliability rest (n=250)

Variables	Dimensions	Cronbach's Alpha	Number of Items
Dependent Variable	Consumer Purchasing Decision	0.698	5
Independent Variables	Perceived Price	0.512	4
	Perceived Quality	0.695	4
	Country of Origin	0.821	4

4.3 Pearson's Correlation Analysis

The Pearson's Correlation analysis of each independent variable (perceived price, perceived quality and country of origin) has a bilateral significance (a level of 0.01). The results revealed that there is a positive correlation between the independent variables and the dependent variable, except for perceived quality. As can be seen from Table 4.7, consumers' purchasing decisions and perceived price have the strongest positive relationship (coefficient value of 0.533), followed by country of origin (coefficient value of 0.435) and perceived quality (coefficient value of 0.272). Table 4.7 further revealed that consumer purchasing decision has a positive relationship with the independent variables (perceived price, perceived quality and country of origin).

Table 7: Pearson's correlation analysis

		Perceived Price	Perceived Quality	Country of Origin	Consumer Purchasing Decision
Perceived Price	Pearson's Correlation	1	.288**	.721**	.533**
	Sig. (2-tailed)		0	0	0
	N	250	250	250	250
Perceived Quality	Pearson's Correlation	.288**	1	.328**	.272**
	Sig. (2-tailed)	0		0	0
	N	250	250	250	250
Country of Origin	Pearson's Correlation	.721**	.328**	1	.435**
	Sig. (2-tailed)	0	0		0
	N	250	250	250	250
Consumer Purchasing Decision	Pearson's Correlation	.533**	.272**	.435**	1
	Sig. (2-tailed)	0	0	0	
	N	250	250	250	250

**Correlation is significant at the 0.01 level (2-tailed)

Correlation between perceived price of product and consumer purchasing decisions.

As shown in Table 8, the value of sig. (2-tailed) is .000 (<0.05) and Pearson's correlation is $r=0.533$. Thus, it can be ascertained that there is a significant and positive relationship between the perceived price of products and consumer purchasing decision. Therefore, H1 is accepted:

H1: There is a positive relationship between perceived price of products and consumer purchasing decision involving multinational skincare firms.

Table 8: Correlation between perceived price and consumer purchasing decisions

		Consumer Purchasing Decision
Perceived Price	Pearson's Correlation	.533**
	Sig. (2-tailed)	0.000
	N	250

Correlation between perceived quality of product and consumer purchasing decisions.

The correlation between perceived quality and consumer purchasing decisions is shown in Table 9. The value of sig. (2-tailed) is .000 (<0.05) and Pearson's correlation is $r=0.272$. Thus, it can be ascertained that there is a significant and positive relationship between the product's perceived quality and consumers' purchasing decision. Therefore, H2 is accepted.

H2: There is a positive relationship between perceived quality of products and consumer purchasing decision involving multinational skincare firms.

Table 9: Correlation between perceived quality and consumer purchasing decision

		Consumer Purchasing Decision
Perceived Quality	Pearson Correlation	.272**
	Sig. (2-tailed)	0.000
	N	250

Correlation between country of origin of product and consumer purchasing decisions.

The correlation between country of origin and consumer purchasing decisions is presented in Table 10. The value of sig. (2-tailed) is .000 (<0.05) and Pearson's correlation is $r=0.435$. Thus, it can be concluded that there is a significant and positive relationship between a product's country of origin and consumer purchasing decision. Therefore, H3 is accepted.

H3: There is a positive relationship between a product's country of origin and consumer purchasing decision involving multinational skincare firms.

Table 10: Correlation between country of origin and consumer purchasing decisions

		Consumer Purchasing Decision
Country of Origin	Pearson Correlation	.435**
	Sig. (2-tailed)	0
	N	250

Multiple Regression Analysis

From the multiple linear regression analysis, a set of independent variable proportions have been established to assess the dependent variable through the R square significance test. If the R square value is 1.0, the research model fully explains the variance of the dependent variable, hence, it has perfect prediction accuracy. In addition, the relative predictive importance of the respective variables can be determined by comparing data weights.

Model Summary

The multiple determination coefficient (R squared) in the multiple linear regression analysis represents the proportion of the dependent variable (DV) that can be explained by the independent variable (IV). Based on the SPSS output, as presented in Table 11, the adjusted R square is 0.294. Around 29.4% of the variation in consumer purchasing decision has been significantly explained by the perceived price, perceived quality and country of origin. This suggests that the model is adequate.

Table 11: Model summary for independent variables on consumer purchasing decision

Model Summary					
Model	R	R square	Adjusted square	R	Std Error of the Estimate
1	.550*	0.302	0.294		0.67697

ANOVA

According to Table 12, the F-value of Model 1 is 35.528 and is associated with a significance level of 0.00. The presented results revealed a significance level of 0.00 which is less than 0.01. Therefore, it can be concluded that the model is good and fit to predict the dependent variable using the independent variables since the perceived price, perceived quality and country of origin have a significant impact on consumer purchasing decision.

Table 12: ANOVA for the relationship between independent variables and consumer purchasing decision

ANOVA						
Model		Sum Squares	of df	Mean Square	F	Sig.
1	Regression	48.846	3	16.282	35.528	0.00*
	Residual	112.738	246	0.458		
	Total	161.584	249			
a. Dependent Variable: Consumer Purchasing Decision						
b. Predictors: (Constant) Country of Origin, Perceived Price, Perceived Quality						

Unstandardised Coefficients

The unstandardised, or regression coefficient constant or slope, was utilised to produce an equation that will predict a dependent variable using one or more independent variable(s). The unstandardised coefficient (B) is the regression coefficient. Based on Table 13, the regression equation developed for this research is:

$$Y = 1.158 + 0.452 X_1 + 0.119 X_2 + 0.059 X_3$$

where:

Y = Dependent variable = Consumer Purchasing Decision

X₁ = Independent variable IV1 = Perceived Price

X₂ = Independent variable IV2 = Perceived Quality

X₃ = Independent variable IV3 = Country of Origin

The formula revealed a positive relationship between perceived price, perceived quality and country of origin with consumer purchasing decision.

Standardised Coefficients

From Table 13, the beta in the fourth column showed that all independent variables are lower than 1. Perceived price was the highest with a beta value of 0.445.

Table 13: Coefficients for the relationship between the independent variables and consumer purchasing decision

Coefficients						
Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.158	0.221		5.232	0.000
	Perceived Price	0.452	0.078	0.445	5.769	0.000
	Perceived Quality	0.119	0.056	0.119	2.109	0.036
	Country of Origin	0.059	0.062	0.075	0.965	0.336

a. Dependent Variable: Consumer Purchasing Decision

CONCLUSION AND DISCUSSION

The purpose of this study is to answer the research questions and achieve the research objectives. As previously mentioned, there are three research questions and objectives.

The first question and objective were to show the relationship between consumers' perceived price and their purchasing decision involving multinational skincare firms. Through the SPSS output (standardized coefficient results), it was found that there is a negative relationship between the two

variables. The perceived price of a consumer will not influence his/her purchasing decision involving multinational skincare firms. The Pearson's correlation rate of perceived price is 0.533, which is considered a significant and positive result. The perceived price was the strongest predictor of consumer purchasing decision with an unstandardized B value of 0.452.

The second question and objective were to verify the relationship between consumers' perceived quality of products and their purchasing decision involving multinational skincare firms. Through the SPSS output (standardized coefficient results), it was observed that there is a positive relationship between the two variables, implying that the perceived product quality of consumers will influence their purchasing decision. The perceived quality had the lowest Pearson's correlation rate of 0.272, indicating an insignificant and negative result. The perceived quality had an unstandardized B value of 0.119.

The third question and objective were to show the relationship between products' country of origin and consumer purchasing decision involving multinational skincare firms. Through the SPSS output (standardized coefficient results), it was observed that there is a negative relationship between the two variables. This implies that a product's country of origin will not influence the consumer's purchasing decision involving multinational skincare firms. Country of origin had a Pearson's correlation rate of 0.435, revealing an insignificant and negative result. Country of origin had an unstandardized B value of 0.059.

Practical Implications

In order to gain from this research, it is important to verify the factors that influence consumer purchasing decisions and contribute to the purchase of multinational skincare products. This research attempted to determine the relevant measurements and understand how the factors (independent variables) affected the purchasing decision (dependent variable) of respondents in Subang Jaya, a city in the Petaling district of Malaysia. According to the results of the multiple regression analysis, marketers can predict the purchasing decisions made by the respondents.

Research Limitations

The biggest limitation of this study is the limited target sample size, which was only 250 individuals. The results of this study may not describe actual expected results. In addition, the survey was only conducted in Subang Jaya, a city in the Petaling district of Malaysia. Most of the respondents in that area have high financial backgrounds and lifestyles, and their decisions may be different from others. The accuracy of survey answers is also a limitation. The answers collected from respondents via URL links were sent to more than 250 people, but the response rate was low. The accuracy of the survey is questionable because it is not certain that the answer is correct, or if it was promptly filled out and submitted. Therefore, these questions raise doubts about the reliability of the investigation and analysis.

Recommendations for Future Research

This study can be further improved by adding more variables to determine the specific factors that influence consumer purchasing decision regarding multinational skincare products. The research scope can be expanded to include more areas within Malaysia. Studies of other population groups may yield additional outcomes. Studies from Malaysia's neighbours may also be useful since it will provide an overview of the entire south-east Asian continent. Around 16.67% of consumer purchasing decision involving multinational skincare firms have not explained by this study. This would be another area for further research. Moreover, future studies should allow a longer timeframe so that a longitudinal study can be accomplished to consider the impact of government and business actions. Potential research can be carried out on secondary sources for the same subject. This will improve the current literature regarding consumer purchasing decisions. The results can be used as a comparison so that the significance of prominent factors in this study can be seen. In addition, upcoming research can be done at local skincare firms. This should include toners, serums, moisturizers and many other products that are easy to find in the Malaysian market. There may be other factors that influence consumers' purchasing decision for different products.

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BAFE036:
**THE ROLE OF ORGANISATIONAL CITIZENSHIP AS A MEDIATOR
OF THE PERSONALITY - JOB PERFORMANCE RELATIONSHIP**

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Abstract

Although ample studies have shown that certain personality traits have a positive influence on employee performance at work, very little research has examined the mediating mechanisms through which personality traits influence job performance. The current paper therefore proposes a conceptual framework whereby Organisational Citizenship Behavior (OCB) is said to mediate the positive relationship between personality traits and performance. The current paper fills gaps within literature by using OCB as a motivational component to explain why some employees are more likely to have better performance than others.

Keywords: Personality, Organisational Citizen Behavior, Job Performance.

BAFE037:
**POSITIVE PSYCHOLOGICAL CAPITAL AS A MEDIATOR OF THE
TRANSFORMATIONAL LEADERSHIP - ORGANISATIONAL
COMMITMENT FRAMEWORK**

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Abstract

Although there is ample amount of research available that examines the relationship between transformational leadership and organisational commitment, very little research has examined the *mediating mechanisms* through which leadership influences employee commitment. The current paper therefore proposes a conceptual framework whereby positive psychological capital is said to mediate the relationship between transformational leadership and organisational commitment. The current paper fills gaps within literature by using positive psychological capital as a construct to explain this mediating mechanism. Positive psychological capital is also proposed to be the missing link between Transformational Leadership and organisational commitment.

Keywords: Transformational Leadership, Psychological Capital, Organisational Commitment

BAFE038:
**FACTORS TOWARDS EFFICIENT WAREHOUSE MANAGEMENT
SYSTEM (WMS): A STUDY OF LOGISTICS COMPANIES IN PERAK,
MALAYSIA**

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Abstract

Today's warehouses are dispersed in many strategic locations throughout the world; since every logistics location in all countries need a warehouse to assist the convenient storage and handling of goods, subsequently to prevent pilferage or damage. This study shows how a right warehouse management system (WMS) can help logistics companies to perform their routine tasks more efficiently. Warehouse location, warehouse layout, technology, IoT in supply chains, and warehouse management systems are all major constructions of the survey instruments. The research gap for this study is investigating the best WMS to adopt in the warehouse and how it benefits the logistics companies in Perak. Currently there are 123 logistics companies in total, however, this survey focused on logistics companies that own warehouses, which only 40 companies deem qualified. One employee from each of the 40 companies that work either in the logistics, procurement, planning, supply chain or warehouse department is required to complete the questionnaire, as they have a better knowledge about how to improve their warehouse's functions in the most efficient manner. The SPSS software is used to perform statistics analysis on data obtained from the surveys. The outcome shown that the warehouse location, warehouse layout, technology, and IoT in supply chains are appropriate factors towards an efficient warehouse management system. Besides, the regression model to study the relationship between the independent variables and dependent variable. The result of Cronbach Alpha shown above 0.7 indicated good reliability level and the Pearson Correlation of above 0.9 shown positive correlation between independent variables and dependent variable. However, this study is not free from any limitations including the current Covid-19 pandemic that restricted movement, geographical area, and poor response from the targeted respondents. For future study, increasing the survey questions and to distribute to logistics companies working in other states may widen the number of respondents and generalize the outcomes.

Keywords: Warehouse Management System, Efficiency, Technology, Warehouse Layout, Perak

INTRODUCTION

This chapter describes the variables that contribute to the efficient warehouse management of logistics enterprises in Perak. The research background, research statement, research aims, research questions, research scope, and research importance are all included. This chapter also examines the definition of a term as well as the limitations of the investigation. Finally, the definition of the term would be the final section of this chapter. Nowadays, logistics companies now have their own warehouses to reduce unnecessary costs. Even so, not all logistics companies manage their warehouses well, and some logistics companies can't deliver goods or merchandise to customers on time. Because now many customers will buy what they need through online shopping. In today's situation, the epidemic is everywhere and even getting worse in some countries, so a lot of customers want to avoid the risk of being infected. Therefore, they will buy the goods or items they need through online shopping. Therefore, if the management of a logistics company is not good, customers will be disagreeable to the company for helping them deliver or store their goods in this company, because they know that the management of this company is not good, and the deliveries to customers will also

slow. They must update their management and technology to help them get a good reputation. If they don't want to improve then they will be abandoned by the customers.

Malaysian policy debates are centered on logistics, trade facilitation, and competitiveness. According to the World Bank's Malaysia Economic Monitor (2021), export operations account for around 63 percent of jobs, while trade accounts for 123 percent of GDP (2019-2020). Trade has been the main factor behind Malaysia's economic progress during the previous four decades. Indeed, effective, and efficient logistics and trade facilitation are essential aspects in a country's competitiveness and a significant source of jobs. Malaysia's Plan 11 focuses on "unlocking logistics growth and increasing trade facilitation" as the country seeks to become Asia's preferred logistics gateway, and the country has risen from 25th to 10th place in the World Bank's Logistics Performance Index 2016 by 2020. The Logistics and Trade Facilitation Master Plan (2015-2020) provides a strategy framework for eliminating bottlenecks in the logistics industry and elevating Malaysia as a regional actor in the medium term. The logistics industry, as the base of global supply chains, is critical to competitiveness and connectivity because it facilitates trade, efficiency, and growth.

Logistics and supply chain management include warehousing. Transportation is an important aspect of logistics, which also involves storage, warehousing, truck repair, and equipment maintenance. The institutional and regulatory framework is hampered by a lack of warehouse, inadequate and insufficient regulations, and a lack of data management. Warehouse issues in logistics are associated with overlapping agency tasks and institutional flaws. Ordinary warehouses and off-dock facilities are inefficient and inadequately regulated (Zhou & Fei, 2016). The land freight database is fragmented, making it difficult to plan and develop effectively (Abdul Majid, Goh, & Lok 2018). Warehousing is a node in a supply chain that connects the material flows between the provider and the client. Warehouses have experienced challenges as supply chains grow more integrated and shorter operations become global, customers become more demanding, and technology develops at a rapid pace. As firms focus more on core capabilities, the demand for specialized warehousing services will rise soon.

As a result, warehousing is seen as a crucial cross-cutting component in regulatory evaluation. Regulations that hinder warehousing's competitiveness will hurt logistics and other connected companies. Besides, the warehouse layout issue is one of the central points of interest in product house executives, which includes all phases of a store network. An effective distribution center design can unmistakably diminish the activity costs. The stockpiling area task issue in this paper is to decide the areas for various things in a stockroom; thus, we consider stockroom format and capacity area tasks as interchangeable in this examination (Corporation, 2016). Creation arranging is the cycle of determining how to utilize and apportion the assets proficiently to satisfy the client requests. The capacity pack measurement problem is an interim production schedule that determines how much to create for each project to keep the total cost of production, installation, and inventory to a minimum (Abdul Majid, Goh, & Lok 2018). Normally, stockroom design issues and production arranging are investigated independently. In any case, while product house space is one of the secret weapons for creation, upgrading the utilization of the space can improve the creation yield and increase the manufacturer's profit (Singh, Chaudhary, & Saxena, 2018).

Warehousing is acting as a role of storing goods between time of assembly and the time handed to the customer. Normally, warehousing depends on human resources and required facilities and equipment costs (Kahraman, 2016). The performance of logistic companies is directly affected by the warehouse in terms of efficiency and speed of delivery. Warehouse location selection will threaten the achievement of logistic companies while also resulting in unnecessary high costs to the company (Kahraman, 2016). Warehouse location selection is a long-term decision and will affect the profitability of the company. A good warehouse location allows the company to focus on the main objective and reduces cost while also simplifying their warehouse operation. Factors to consider when choosing a warehouse location include transportation and connectivity, electricity and water supply, information technology (IT), telecommunications environments, land costs, tax regulations, incentives, market size, proximity to major markets and expanding market reach. They are all factors to consider (Singh, Chaudhary, & Saxena, 2018). It can be categorized into three which is infrastructure, government, and market.

Research Objective

RO1. To examine the relationship between factors (technology, warehouse layout, location of warehouse and Internet of Things in Supply Chain and Warehousing) towards efficient warehouse management systems of logistics companies in Perak.

RO2. To examine how the warehouse management systems affect the logistics companies in Perak.

RO3. To examine whether the reliability will affect the warehouse management systems of logistic companies in Perak.

The first research purpose is to analyses the relationship between elements (technology, warehouse layout, warehouse location, and Internet of Things in Supply Chain and Warehousing) and efficient warehouse management systems of logistics companies in Perak. The second research goal focuses on how warehouse management systems affect logistics companies in Perak. The final research goal is to see if dependability affects the warehouse management systems of logistic companies in Perak.

Research Question

RQ1. Do factors (technology, warehouse layout, location of warehouse and Internet of Things in Supply Chain and Warehousing) influence the efficient warehouse management system of logistics companies in Perak?

RQ2. Does the warehouse management system influence the performance of logistics companies in Perak?

RQ3. Does reliability affect the warehouse management systems and influence efficient warehouse management systems logistics companies in Perak?

The first study question is primarily concerned with understanding how differences and similarities in (technology, warehouse layout, warehouse location, and Internet of Things in Supply Chain and Warehousing) influence the effective warehouse management system of logistics companies in Perak. The second study question seeks to determine how the warehouse management system influences the performance of logistics companies in Perak. Finally, the purpose of this study question is to determine how reliability affects warehouse management systems and how efficient warehouse management systems influence logistics companies in Perak.

Issue and Problem Statement

The increasing amount of delivered goods or inventory has prevented logistics companies from meeting their commitments, the most common example being goods that cannot be delivered on time. Samattapong (2017) mentioned that there are many warehousing problems in small logistics companies due to lack of management capacity. There are several problem reports for our study. The first is that labor productivity entails a significant financial burden for the company. (Karim, Abdul Rahman, & Syed Johari Shah, 2021) The rapid growth of large-scale ecosystems, logistics activities have encountered increasing use of technology. Competition for warehousing and delivery between logistics companies is intensifying. According to Karim, Abdul Rahman and Syed Johari Shah (2021), elements of Malaysia's logistics services are experiencing productivity problems due to a lack of training of some workers. When workers are not trained, they will increase labor usage and handling costs (Zhang, Nishi, Turner, Oga, & Li, 2017). The company will need to hire more workers to meet the high demand and demands of the workers. If the current warehouse management cannot meet the high demands of the customers, it can lead to infeasible solutions leading to overcapacity of the warehouse (Zhang et al., 2017).

The second problem of inefficient warehouse management is wasted time in the picking process. Karim, Abdul Rahman and Syed Johari Shah (2021) mentioned that the Malaysian logistics sector is facing the reality that warehouses cannot detect shortages of excess products in stock as well as mixed products. Products in stock need to be handled with care, otherwise the weather may be affected. Inefficient warehouse management will increase the time to pick up and store goods in

the warehouse. This will increase the risk for subsequent operations such as rework, reprocessing and also unnecessary processing due to functional deterioration. According to Palšaitis, Čižiūnienė, and Vaičiūtė (2017) great care should be taken in product selection. It is important to maintain efficient and accurate order picking to meet customer needs. Inefficient warehouse management can lead to messy stock placement and unoptimized warehouse space, and waste time searching for items.

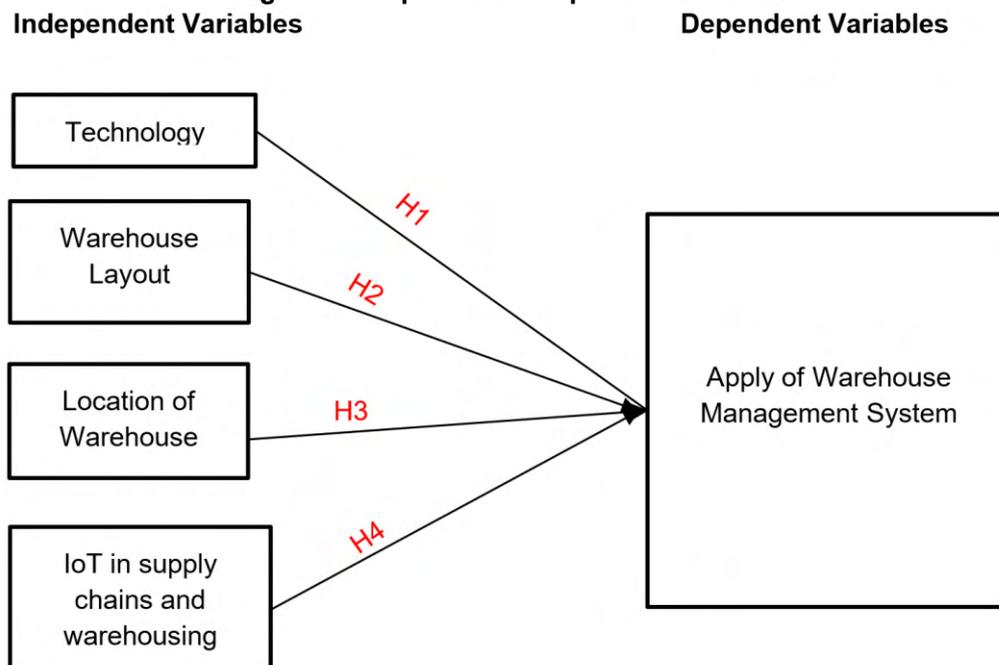
The third problem is the productivity of transport. According to Karim, Abdul Rahman and Syed Johari Shah (2021), an effective warehouse management system will lead to delays in the mooring of cargoes in the Malaysian logistics services sector. Internet sales increased dramatically during Covid19 as people felt more secure shopping at home. As a result, the logistics business is under enormous pressure (Srivatsa, Srinivas, & Marathe, 2021). Customer expectations for on-time delivery, if not in effect, will result in items not delivered on time. Delays in operations and resulting customer orders are delayed. Transport productivity is a strong guarantee for a logistics company. Ineffective warehouse management will affect the performance of logistics companies in terms of shipping productivity, longer delivery times will increase inventory items and slow inventory turnover.

The fourth problem is customer dissatisfaction (Rumzi, Tausif, & Imdadul Haque, 2018). Ineffective warehouse management increases the risk of deterioration of products stored in the warehouse. At the same time, the responsiveness of logistics companies' warehouses to customers is very important. The role of the warehouse is to keep the product in good condition and to ensure that the environment will not affect the product (Rumzi, Tausif & Imdadul Haque, 2018). Customer satisfaction depends on the service provided by the warehouse, damage to goods during storage will directly affect their satisfaction.

LITERATURE REVIEW

In the current trending research that is related to this field, warehouse management systems are quite popular nowadays. However, applying a right warehouse management system can help the process in the warehouse in an efficient and effective way (Hassan, M., Ali, M., Aktas, E. and Alkayid, K., 2015). A conceptual framework is a conceptual model that describes how researchers' theories or make logical sense of relationships among the various components recognized as significant to the problem (Tamene, E.H., 2016). In the theoretical framework it discusses the relationship between variables regarding the research situation. This theoretical framework is done after the problem has been identified. Figure 1 shows the interaction between independent and dependent variables.

Figure 1: Proposed Conceptual Framework



Technology Acceptance Model

The Technology Acceptance Model (TAM) is used to predict whether an organization, individual or groups will adopt a new technology while also subject to numerous additions and developments. (Mortenson & Vidgen, 2016). For example, a single theory for the acceptance and use of technology is in its simplest form, with perceived usefulness, attitudes for use, perceived ease of use and behavioral intent predicting actual use of technology as proposed in Mortenson and Vidgen (2016).

Task Technology Fit

The Task Technology Fit (TTF) is commonly used to determine if the task and technological features match. It is also used to evaluate how information technology contributes to performance, as well as to examine usage impacts (Wu & Chen, 2017). While task and technology variables can influence task-technology fit, it is users' performance and usage that is determined (Wu & Chen, 2017).

Apply of Warehouse Management System

Considering the impact of remote tag scanning and management information system (MIS) to obtain WMS in the execution of the entire company, it is found that the right to apply WMS can help reduce costs, improve the efficiency of management personnel, make the measurement more adaptable and make delivery time faster. Limited, to meet customer needs faster, expand consumer loyalty, increase seriousness, and help further reduce stock risk. Sahuri and Utomo (2016) created a framework based on online administration that can assist small businesses in enhancing their stockroom executives and company. The primary idea behind this framework is to deliver stock data to mobile phones via Short Message Service (SMS), it aids in providing faster and simpler dynamics since it provides precise information as opposed to the manual structure, which relies on physically recording everything. Adiono, Ega, Kasan, and Carrel (2017) proposed an RFID-based product locator framework that includes RFID labels attached to the objects and data about them, as well as RFID peruses to detect the distance to the location of the purchased object. The user is linked to a WMS introduced in a cell phone via Bluetooth. This framework aids in the continuous replenishment of stock, reducing the time required to locate the purchased items, increasing the proficiency of the WMS, and providing faster conveyance. One et al. (2017) designed an RFID-based data framework structure for the fleece yarn business to track work progress, inspect and track inventory, select semi-finished products, import and transport. The developer also conducted a cost-effectiveness analysis of the proposed framework. This will reduce the required labor by 20%, reduce the loss of work progress, reduce costs, and improve the overall performance of the wool yarn industry. Wei et al. (2015) examined the utilitarian plan of the WMS for a medication project by applying standard tag the executives programme, it assisted in managing inventories effectively, decreasing labour costs, and enabling dynamic relying on information stockrooms. Qin et al. (2017) contemplated an evaluation methodology to investigate the impact of RFID on the issue of erroneous stock. The incorrect stock issue arose because of data bending via the store network, which is known as the bullwhip effect; this issue causes an increase in holding and deficiency charges. The researchers discovered that employing RFID in the downstream phases resulted in more benefits and proficiency than using it in the upstream stages.

Han and Zhu (2017) investigated existing challenges and deconstructed the coordination of the warehousing framework to develop strategies to improve coordination and capacity framework. Manufacturers build inventory executive data frameworks that can improve venture efficiency, enhance coordination across all offices, reduce job size, solve material clutter issues, and reduce costs. And coordinated and introduced an improvement plan for warehousing. Patil et al. (2018) Leverage Software as a Service (SaaS), which provides cloud-based utilization of WMS, to propose a unique web application framework and perform manual work for customers to get information effectively and quickly, and more tasks Helped to switch to product operation that encourages you to do. The proposed framework could also successfully manage distribution centers to improve visibility, capture ongoing data, and provide graphic assessments of item inventory, purchase requests, and inventory deposits and withdrawals. rice field. Woniakowski et al. (2018) discussed the distinction between ERP frameworks and WMSs, concluding that the two frameworks complement each other and that their coordination benefits the effort the most. Pane et al. (2018) implemented an RFID

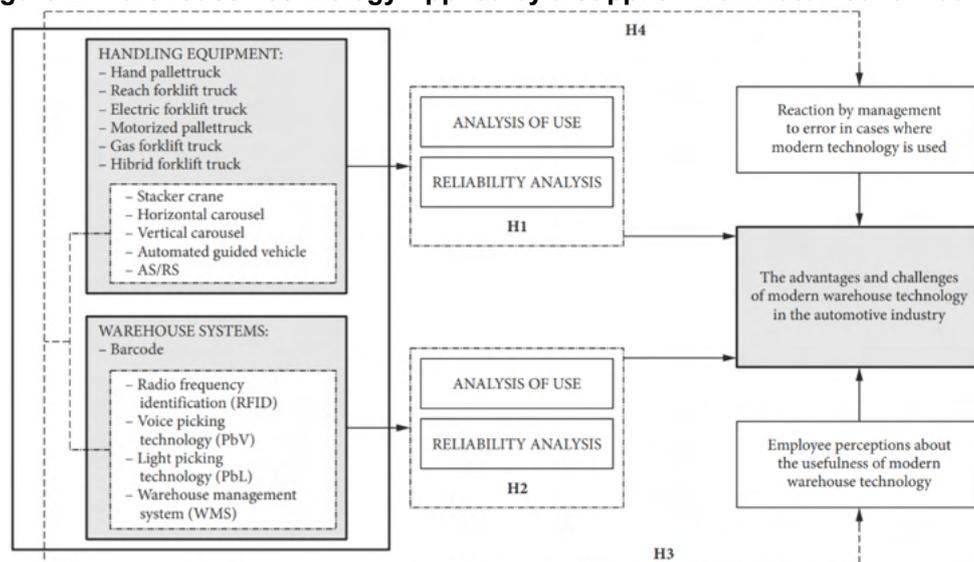
framework in WMS using an Arduino Uno microcontroller and discovered that it aided in regulating tasks effectively, accelerated work measures, decreased error rate, increased stockroom efficiency, and modernized work measures. Mao et al. (2018) proposes a hybrid genetic calculation according to the national improvement of bees to plan a smart WMS useful structure and solve the cloud reservation problem based on a cloud model using RFID and GPS, and the proposed framework is determined. It has provided ongoing information to help you plan better and dynamically.

Technology

The technology of innovation in warehouse and dispersion of executives has successfully changed the number of workers leading their positions. Inferable from the serious level of computerization, numerous data assortment and destring. As a result of these qualities, RFID innovation is a possible replacement to barcoding and could supplement or totally supplant it later (Kannouf, Douzi, Benabdellah, & Azizi, 2015). Culler and Long (2016) propose that, with the improvement of innovation and wellbeing frameworks, human mistake has become the main wellspring of work environment mishaps. They have additionally built up a methodological methodology for improving dependability in rail route transportation frameworks, since they found that human blunder is the reason for 70–90% of all vehicle mishaps. The examination led by De Vries, de Koster, and Stam (2015) adds to the writing on mechanization dependence by enlightening the impacts of client temperaments and feelings on the dependence on computerized frameworks. Both trust and loving have been shown to be huge factors in human connections with progressively complex innovations. Preference for another framework might be critical to proper dependence, especially from the get-go in the undertaking. Positive influence can be effectively initiated and might be a switch for expanding loving.

As of late, we have seen incredible improvement made in the advancement of current stockroom arrangements, just as an emotional ascent while conducting research on issues relating to the presentation of current innovation and collaboration among administrators and computerization (Tsarouchi et al. 2016). In any case, a glance at a portion of the current examinations on the handiness of the utilization of present-day innovation and thus more noteworthy robotization reveals that their decisions are regularly conflicting. The common position is that the utilization of present-day innovation is a powerful reaction to consistent client needs for quality coordination measures in the store network. Not exploiting the advantages achieved by the fruitful mechanization of the stockroom cycle underlines the disadvantages and predicaments about the value of the utilization of innovation. This perspective is particularly featured by examinations that are suspicious of the over-the-top effect of urbanization on work measures (Škerlić, Muha, & Sokolovskij, 2017).

Figure 2: Warehouse Technology Applied by a Supplier in an Automotive Industry



Source: Škerlić, Muha, and Sokolovskij (2017).

Warehouse Layout

The warehouse layout issue is one of the central points of interest in product house executives, which includes all phases of a store network. An effective distribution center design can unmistakably diminish the activity costs (Zhang, Nishi, Turner, Oga, & Li, 2017). The stockpiling area task issue in this paper is to decide the areas for various things in a stockroom; thus, we consider stockroom format and capacity area tasks as interchangeable in this examination (Bortolini, Faccio, Gamberi, & Pilati, 2020). Creation arranging is the cycle of determining how to utilize and apportion the assets proficiently to satisfy the client requests. The capacitated parcel measuring issue is a medium-term creation arrangement, which chooses how much to produce for every item, so the complete expense of creation, setup, and stock is limited. Normally, stockroom design issues and production arranging are investigated independently. In any case, while product house space is one of the secret weapons for creation, upgrading the utilization of the space can improve the creation yield and increase the manufacturer's profit (Muharni, & Khoirunnisa, 2019)

Our examination is inspired by a true creation warehousing issue. We play out the investigation at a logistics warehouse organization that cycles and bundles of products or goods. The organization consistently faces the difficulties of finding accessible space for their items and dealing with the things in the distribution center. The absence of coordination between creation arranging and stockroom the board prompts huge failure in the two divisions. Hence, we research a creation arrangement that con-siders the distribution center space asset and a warehouse design with new capacity tasks. Basically, we propose an incorporated technique to consolidate the capacitated parcel estimating issue with distribution center format issues so creation interaction and warehousing can be coordinated successfully (Zhang, Nishi, Turner, Oga, & Li, 2017). Lately, more researchers have started to utilize hereditary calculations to enhance the capacity design. Zhang, Nishi, Turner, Oga, and Li (2017) that the determination and plan of hereditary calculation administrators was a vital advance in the utilization of hereditary calculations to advance outcomes, straightforwardly influencing the aftereffect of optimization. Guo et al. thought that warehousing format plan and enhancement ought to be isolated into two stages in 2016. The initial step is to group the put away merchandise and use number programming to address the most extreme payload turnover of the stockroom. The subsequent advance is to completely think about the issue of distribution center request bunching and picking ways and utilize hereditary calculation to streamline the way the outlet center products and decrease the by and large working expense. In 2016, Venkitasubramony, and Adil, and others zeroed in on the fishbone design of a capacity plate, fundamentally to concentrate what the point change of the slanted channel meant for the distance of the picking way and acquired the ideal point of the slanted channel. Melh Çelk et al. found in 2014 that as the quantity of orders declined, the distinction in the normal pick-to-arrange distance between customary stockrooms and new distribution centers expanded.

Location of Warehouse Layout

Warehousing is acting as a role of storing goods between time of assembly and the time handed to the customer. Normally, warehousing depends on human resources and required facilities and equipment costs (Kahraman, 2016). The performance of logistic companies is directly affected by the warehouse in terms of efficiency and speed of delivery. Warehouse location selection will threaten the achievement of logistic companies while also resulting in unnecessary high costs to the company (Kahraman, 2016). Warehouse location selection is a long-term decision and will affect the profitability of the company. A good warehouse location allows the company to focus on the main objective and reduces cost while also simplifying their warehouse operation. In addition, factors to consider when choosing a warehouse location include transportation and connectivity, water and electricity supply, information technology (IT), telecommunications environments, land costs, tax regulations, incentives, market size, proximity to major markets and expanding market reach. All are factors to consider (Singh, Chaudhary and Saxena, 2018). It can be categorized into three which is infrastructure, government, and market. Hence, the demand for a proper transportation and connectivity system is required in delivering goods to the warehouse or from the warehouse to another destination, including the presence of road network, airport, and seaport. (Singh, Chaudhary & Saxena, 2018) Logistic companies should locate their warehouses in such locations where they can increase the overall efficiency of the company and not cause delay in shipment or increase of cost of operation.

Infrastructure of the warehouse which is electricity and water supply plays an important role in functioning the warehouse efficiently. Sufficient electricity supply is important in warehouses due to most of the warehouses running their operation using information technology (IT) like real time location systems or RFID. Warehouse operations need to key in or scan the shipping information of the goods into the systems, while the information will be checked by the customer through the system (Singh, Chaudhary & Saxena, 2018). On the other hand, with a globalized market and e-commerce becoming more popular, the warehouse site location is important for the logistics company across all manufacturer sectors. Besides that, warehouse location also needed sufficient and proper infrastructure supply like electricity, water supply, telecommunication, and network connection (Singh, Chaudhary & Saxena, 2018). Selection of warehouse location also considers one of the parts of future scope for the company in the application of the warehouse management system. It provides ideas for the company on whether it is profitable for them if investing in such a location. Government policies like tax structure of the location, legal guarantee and other incentives provided by the government will further increase the value of warehouses and the logistics company (Kahraman, 2016).

Internet of Things in Supply Chain and Warehousing

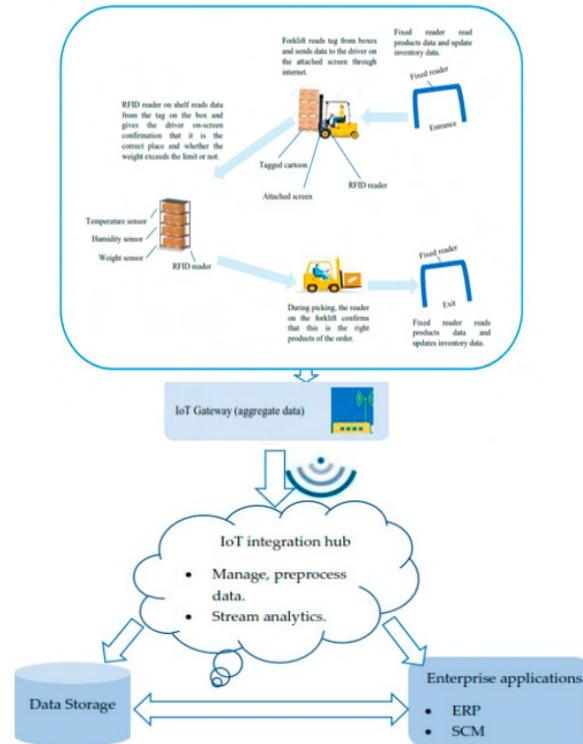
Ideas powered by the Internet of Things (IoT), such as augmented reality, high-resolution real-time video, self-propelled vehicles, bright weather, healthcare, etc., are now all over the world. These applications require faster data speeds, massive data transfers, increased limits, low sleep, and high performance. Considering these emerging notions, IoT has upended the globe by providing continuous availability amongst disparate enterprises (HetNets). The potential point of IoT is to convey the attachment and play innovation to the end-client by providing simplicity of action, remote access control, and configurability (Shafique, Khawaja, Sabir, Qazi, & Mustaqim, 2020). With the advancement of IoT, experts began to research the potential of employing this innovation in a variety of industries. There is not much research on its use in the field of inventory network managers (SCM). Imran and others. (2018) Adopting the quantitative exploration strategy of horizontal inspection configuration, thinking about the impact of the five elements of Industry 4.0 (big information, smart manufacturing factory, CPS, Internet of Things, and interoperability) on the creation and management of Pakistan. They found that the five components have a huge positive relationship with creation and administration areas which implies they have an extraordinary job in improving the general execution. Ben-Daya, Hassini, and Bahroun (2019) talked about the meaning of IoT, its difficulties and what's more, how it very well may be applied in various regions, for example, coordination and production network for following, following, observing, and managing. As per them, these applications empower constant administration of the entire framework and henceforth make the production network more adaptable and light-footed to adjust to any new conditions. Dhumale et al. (2017) contemplated the effect of actualizing IoT across the store network and contended that IoT adds to the development of the organization and in confronting the present difficulties, it additionally decidedly affected the organization's future economy.

Warehouses can hold a great number of things, which is why they should be used optimally to ensure precise and timely execution of all capacity to meet the needs of clients. Applying IoT to warehousing ensures a significant impact because it can be used to screen a few cycles in the distribution center progressively and can eliminate manual impedances. It can connect everything and then enable the analysis of the massive amount of information gathered from these connections and changes them into experiences to aid in the selection and improvement of the entire presentation (Mostafa, Hamdy, & Alawady, 2019). As a result, it enables the evaluation of the massive amount of information gathered from these associations and change it into experiences to help choices and improve the overall exhibition.

In this paper, a system for implementing IoT in warehouse activities is proposed. This structure is depicted in Figure 3. When objects pass through the in/outdoor, the peruse connected to the entrance records information about the items on labels attached to them. This provides continuous awareness of inventory levels and prevents out-of-stocks. Perugia attached to the forklift reads information such as the position, type, and expiration date of the item and shares it on the screen with the driver. When the item is placed in the rack, a sensor attached to the screen provides the driver with confirmation. These sensors are also used to monitor heating, ventilation, and air conditioning (HVAC) systems to optimize energy consumption and ensure product quality and distribution center safety. All information gathered by peruses and sensors is transferred to the

stockroom, where the board framework (WMS) measures the data and converts it into useful data and activities. There is a similar capacity for collecting requests; When a request is made, the driver walks to the area of the item displayed on the login screen and confirms that this is the correct request through the reader on the forklift. When the requisition leaves the distribution center, the inventory level is updated immediately. This makes request fulfillment more effective, simple, and accurate, and avoids duplication (Mostafa, Hamdy, & Alawady, 2019).

Figure 3: Framework for integrating IoT in a warehouse



Source: Mostafa, Hamdy, and Alawady (2019).

HYPOTHESES DEVELOPMENT

H1: There is a significant relationship between technology and implementation of warehouse management systems.

H2: There is a significant relationship between warehouse layout and implementation of warehouse management systems.

H3: There is a significant relationship between location of warehouse and implementation of warehouse management systems.

H4: There is a significant relationship between the Internet of things in supply chain and warehousing and implementation of warehouse management systems.

The first hypothesis is aimed to have a positive relation between the technology and implementation of warehouse management systems. Next, the second hypothesis is to understand the relationship of the warehouse layout and implementation of warehouse management systems. If there is no excellent warehouse layout or design, warehouse management systems will not be able to perform efficiently because they were implemented incorrectly or the system was purchased with the knowledge that less than (Son, Chang, & Kim, 2015). Besides, the third hypothesis is focused on the relationship between location of warehouse and implementation of warehouse management systems. According to Dey, Bairagi, Sarkar, & Sanyal, 2016), the warehouse location affects solely customer feedback and shipping costs; there is no relationship between the warehouse management system. Last, the fourth hypothesis is show relationship between the Internet of things in supply chain and warehousing and implementation of warehouse management systems. The modern warehouse

Management system (WMS) adopted by manufacturers is necessary to handle production order changes and improve warehouse efficiency (Lee, Cao, & Ng 2017). To improve inventory control and reduce manual operations, WMS is almost always connected to automatic identification data collection techniques. The objective of this study is to create and evaluate the effectiveness of an IoT based warehouse inventory management system to improve the performance of the warehouse's receiving, storage and picking activities (Lee, Cao, & Ng 2017).

RESEARCH METHODOLOGY

Sampling Design

In this research, quantitative data collection methods are used in determining the statistical testing of significant levels of the independent variable in impacting dependent variables. The independent variables in this research are Technology, Warehouse layout, Location of Warehouse and Internet of Things in Supply Chain and Warehousing. Descriptive research is useful for research that describes ongoing phenomena (Schoonenboom & Johnson, 2017) explained that descriptive research design has two main goals: first, to find answers to research questions, and second, to control variance. Therefore, this study can provide a more accurate impression of their perception of variables toward efficiency in the logistic company warehouse management system. This is a review of descriptive research. Furthermore, due to the Covid -19 we implement the quantitative research methodologies to get our result. According to (Stockemer, 2019) quantitative method is a scientific method, and its basis can be determined in the positivist paradigm. This method focuses on collecting new data and analyzing the data based on the problems of large groups, while ignoring personal emotions and feelings or environmental background. Likewise, people discussed quantitative strategies in order to work and measure them through actions and opinions that would help researchers. Describe the data rather than interpret the data (Rahi, 2017).

In addition, questionnaires might be used to collect data for this study. However, when it comes to the appropriateness and effectiveness of gathering more information from the population, a questionnaire is an appropriate method to collect information and data related to facts, beliefs, and concepts, because it can increase the accuracy and truth of the topic in response to stimulating questions. Questionnaires are also more convenient and useful for a huge number of people. As a result, a questionnaire was employed in this study to collect information on efficient warehouse management in Perak logistics companies. A study scheme is established for the facility study, as indicated in the image.

Research Procedure

To carry out this research, this study combines both quantitative approaches as well as an open and closed design survey. The purpose of this questionnaire survey study is to find or establish the best warehouse management systems to use. Aliaga and Gunderson (2006) define that the collection of numerical data using mathematical or statistical methods is a quantitative approach. In this study, a correlation scheme was used to describe the activities and behavior of university students (Aliaga & Gunderson, 2006). There are three types of correlation design namely positive correlation, negative correlation and uncorrelation. A perfect positive correlation indicates a value of 1, no correlation indicates a value of 0, and a negative correlation indicates a value of -1 in the statistical report (Witten, Frank, Hall, & Pal, 2017). Besides, the subject of this study will be the logistics company with a warehouse in Perak. The sampling frame for this study was the entire logistics company. Participants were selected from this region because the researcher researched a logistics company that has a warehouse in Perak and where sourcing and data collection would be more convenient.

A total of 40 sets of questionnaires and surveys will be distributed to logistics companies that have warehouses in Perak. The questionnaire consists of six parts: Section A, Section B, Section C, Section D, Section E and Section F. There are some questions designed to gather the demographic information needed from warehousing and logistics companies. Respondents were asked to check their age, type of business, annual sales, total number of employees, and business position. Section B will be technology, where you will ask how technology can help the stored procedure to be efficient. Also, section C is the layout of the warehouse, here is to ask what the problem is affecting the warehouse process and what is the problem. In addition, the location of the warehouse in Section D,

in this section it will be asked if the warehouse will affect the warehouse management system. Also, Section E, Internet of things in the supply chain and warehouses. Finally, the F section warehouse management system. Here, we would like to ask if the warehouse management system helps make the warehouse process efficient. On the other hand, the questionnaire questions focus on understanding learning behavior. The questionnaire questions also attempt to explore warehouse management system factors and learning behavior factors. With a deeper understanding of the correct application of a warehouse management system, research can understand the impact of the wrong choice of a warehouse management system.

DATA ANALYSIS

Descriptive Analysis

Demographic analysis, population distribution and composition, as well as variance components and changes, are all statistically analyzed (quantitative). Respondent demographic information including age, firm type, annual revenue, total number of employees, and position in the company. This information is included in the questionnaire that respondents must fill out in response to the provided question.

Information of Respondent

Respondent information includes age, firm type, annual revenue, total number of employees, and position in the organization. This information is necessary in the questionnaire to obtain accurate data on material handling equipment users. This respondent's general information was included in the table. This table summarizes the number of respondents for the study. 40 surveys were distributed, and every one of them had a positive response. The proportion of the questionnaire that we receive in its whole. Data demography appears with the goal of providing a view on the background of the respondents who participated in this research and making it easier for the readers to grasp this research.

The respondent's age is shown in Table 1. Only 7.5 percent of respondents are under the age of 20, 52.5 percent are between the ages of 21 and 30, 27.5 percent are between the ages of 31 and 40, 10 percent are between the ages of 41 and 50, and 2.5 percent are beyond 50. This demonstrates that most organizations demand staff between the ages of 21 and 30. This is because most businesses require personnel with higher levels of energy to perform such tasks. This age group is appropriate because most of them are energized and in good health.

Table 1: Age

	Frequency	Percent	Valid Percent
18-20 years old	3	7.5	7.5
21-30 years old	21	52.5	52.5
31-40 years old	11	27.5	27.5
41-50 years old	4	10	10
>50 years old	1	2.5	2.5
Total	40	100	100

Table 2 illustrate the type of company owned by the respondent. Only 12.5 percent of respondents work for a warehouse company, while 87.5 percent work in logistics with a warehouse company. This reveals that most of the firm in Perak is Logistics with the warehouse company. We choose Logistics with a warehouse company since it meets our criteria.

Table 2: Type of Company

	Frequency	Percent	Valid Percent
Warehouse	5	12.5	12.5
Logistics with warehouse	35	87.5	87.5
Total	40	100	100

The annual sales of the company are shown in Table 3. 7.5 percent of respondents have a company worth RM 10000 - RM 20000, 40 percent have a company worth RM 30000 - RM 40000,

22.5 percent have a company worth RM 50000 - RM 60000, 20 percent have a company worth RM 70000 - RM 80000, 5 percent have a company worth RM 80000 - RM 90000, and 5 percent have a company worth RM 100,000 or more. Rm 30000 - 40000 is the highest annual sales percentage. The warehouse company's annual sales and logistics with the warehouse company have decreased because of the pandemic.

Table 3: Annual Sales

	Frequency	Percent	Valid Percent
RM10000- RM20,000	3	7.5	7.5
RM30,000-RM40,000	16	40	40
RM50,000-RM60,000	9	22.5	22.5
RM70,000-RM80,000	8	20	20
RM80,000-RM90,000	2	5	5
RM100,000 and above	2	5	5
Total	40	100	100

Table 4 indicate the total number of employees in the company. 7.5 percent of respondents have workers ranging from 10 to 20, 47.5 percent have workers ranging from 30 to 40, 35 percent have workers ranging from 50 to 60, 10 percent have workers ranging from 70 to 80, 0 percent have workers ranging from 90 to 100, and 0 percent have workers ranging from more than 100. The highest figure is 47.5 percent, with employment ranging from 30 to 40 percent. Because of the pandemic, many warehouse companies and logistics with warehouse companies have reduced their workforce to save money.

Table 4: Number of Workers

	Frequency	Percent	Valid Percent
10-20	3	7.5	7.5
30-40	19	47.5	47.5
50-60	14	35	35
70-80	4	10	10
90-100	0	0	0
More than 100	0	0	0
Total	40	100	100

Table 5 indicate the percent response based on company position. Warehouse manager positions are 12.5 percent, warehouse executives are 20 percent, logistics manager positions are 12.5 percent, logistics executive positions are 12.5 percent, logistics planner positions are 4.9 percent, logistics clerk positions are 27.5 percent, logistics operator positions are 7.5 percent, and human resource positions are 2.5 percent, while procurement and supply chain executives account for 0 percent. Based on the pie chart, we can see that the topic that we are researching is more appropriate for the warehouse manager, warehouse executive, logistics manager, logistics executive, logistics, planner, logistics clerk, and logistics operator because workers in these positions are more involved in making decisions about warehouse operations and shipping.

Table 5: Position in the Company

	Frequency	Percent	Valid Percent
Warehouse Manager	5	12.5	12.5
Warehouse Executive	8	20	20
Logistics Manager	5	12.5	12.5
Logistics Executive	5	12.5	12.5
Logistics Planner	2	4.9	4.9
Logistics Clerk	11	27.5	27.5
Logistics Operator	3	7.5	7.5
Procurement	0	0	0
Supply Chain	0	0	0
Management Executive	0	0	0
Human Resource	1	2.6	2.6
Manager	0	0	0
Total	40	100	100

Reliability Test

Table 6 showed the reliability test result of a researcher collected questionnaire which consists of 40 respondents. Values from 0.7 to 0.8 are indicated as a good reliability level (Mat Nawi, Abdul Malek A. Tambi, Muhammad Faizal Samat, & Wan Masnieza Wan Mustapha, 2021). Based on the collected result, four of the independent variables and the dependent variables are indicated as good reliability level. The highest reliability value overall is warehouse layout from an independent variable which is 0.722. While the second highest reliability level is 0.708 IoT in supply chain and warehousing in independent variables. Warehouse location and technology also indicated good reliability with 0.703 and 0.702 respectively. The dependent variable which is the warehouse management system is also considered a good reliability level as 0.705.

Table 6: Results of Reliability Test

	Variable	Cronbach's Alpha
Independent Variables	Technology	0.702
	Warehouse Layout	0.722
	Warehouse Location	0.703
	IoT in Supply Chain and Warehousing	0.708
Dependent Variable	Apply of Warehouse Management System	0.705

Pearson's Correlation Analysis

Table 7 shows the Pearson correlation result of four independent variables with one dependent variable. Based on the table, the significant correlations range among independent variables and dependent variables is 0.922 to 0.953. According to Mukaka (2012), there is a very high positive or negative correlation with the value of 0.90 to 1.00. Hence, it indicates that all the independent variables have a very high relationship with dependent variables as all of the sizes are more than 0.90 which is between 0.922 to 0.953. While the highest correlation size throughout the correlation test is IoT in supply chain and warehousing which means there is a very high positive correlation relationship with warehouse management systems.

Table 7: Results of Pearson's Correlation Analysis

Variables	TCH	WLA	WLO	IOT	WMS
TCH	1	.879**	.907**	.927**	.942**
WLA	.879**	1	.910**	.901**	.930**
WLO	.907**	.910**	1	.915**	.922**
IOT	.927**	.901**	.915**	1	.953**
AWMS	.942**	.930**	.922**	.953**	1

Note: Correlation is significant at the 0.01 level (2-tailed).

Multiple Regression Analysis

Table 8 shows that the $R^2=0.949$, which means that 94.9% of the changes in the efficient warehouse management system of a logistics company in Perak can be explained by our independent variables, namely the Internet Of supply chain, warehouse location, warehouse layout, and technology. In this case, 94.9% of the independent variables are significant for analyzing the regression line, while the remaining 5.1% can be explained by other factors. The factors that affect the efficiency of the warehouse management system of logistics company in Perak are significantly affected by all independent variables in our research, which is 94.9%.

Table 8: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1 ^b	.974 ^a	.949	.943	.47777

Note:

a. Predictors: (Constant), IOT, WLO, WLA, TCH

b. Dependent Variable: Apply of Warehouse Management System

Table 9 shows that the value of f is 162.518 and its associated significant value is $p = 0.000$. In this case, the p-value is <0.05 . Therefore, the results show that all IVs of the Internet supply chain, warehouse location, warehouse layout, and technology in the linear regression model are capable and adequate to explain the variation of efficiency of the warehouse management system of the logistics company in Perak.

Table 9: ANOVA

Model ^b	Sum of Squares	df	Mean Square	F	Sig.
Regression	148.386	4	37.096	162.518	.000 ^a
Residual	7.989	35	.228		
Total	156.375	39			

Note:

a. Predictors: (Constant), IOT, WLO, WLA, TCH

b. Dependent Variable: Apply of Warehouse Management System

Regarding Table 10, the unstandardized coefficient value β of IoT in supply chain and warehousing (IOT) resulted as 0.373 which indicated that it most influenced the efficiency of the warehouse management system of a logistics company in Perak. This is due to the highest β value among the other independent variables. Technology with its β value of 0.304 is the second most influential on the efficiency of the warehouse management system of a logistics company in Perak. Besides that, the β value of warehouse location and warehouse layout is 0.045 and 0.285 respectively.

Furthermore, warehouse location (WLO) with the smaller 0.392 t-value and 0.697 p-value which exceeds 0.05 has no significant difference since it is not against the null hypothesis. So, there is no significant relationship between the warehouse location and the efficiency of the warehouse management system.

Besides that, Technology (TCH), Warehouse layout (WLA) and IoT in supply chain and warehousing (IOT) with the larger value t-value of 2.745, 2.812 and 3.090 respectively shows that these t-value are against the null hypothesis and there is sufficient evidence to the significant differences. Due to the above three independent variables p-value did not exceed 0.05, so they are significant to the dependent variables. It shows that technology, warehouse layout and IoT in supply chain and warehousing are positively relevant to the efficiency of warehouse management systems of logistics company in Perak. Below equation is formulated with the coefficient result:

Multiple Linear Regression formula: $-0.626 + 0.319 (TCH) + 0.274 (WLA) + 0.048 (WLO) + 0.404 (IOT)$

Table 10: Coefficient

Model ^a	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std Error	B		
(Constant)	-.626	.929		-.674	.505
TCH	.319	.116	.304	2.745	.009
WLA	.274	.098	.285	2.812	.008
WLO	.048	.123	.045	.392	.697
IOT	.404	.131	.373	3.090	.004

Note:

a. Dependent Variable: Apply of Warehouse Management System

CONCLUSION AND DISCUSSION

This study met its aims, which were to identify the elements that contribute to the efficient warehouse management systems of logistics companies in Perak. This research effort also concludes that these elements had a significant impact on and were directly related to the warehouse management system. This study's primary findings are warehouse location, warehouse layout, IoT of supply chain, and technology. In conclusion, the findings of this study revealed that reliability is the

most important criterion, followed by warehouse location, warehouse layout, IoT of supply chain, and technology. Although technology is the most important aspect influencing the warehouse management system, other factors should not be underestimated. In this study, sub-criteria of each main criterion were also ranked.

The current study includes various limitations that will have an impact on the results. When it comes to collecting quantitative data, there is no doubt that the timing of this research is critical. Because this research has a limited time frame, the outcome is likely to be influenced. The researcher would confront a time constraint in which actions such as data collecting, data analysis, and reporting the results would need to be completed fast. All these tasks must be completed in the allotted time.

The sampling frame that the research has covered is another shortcoming of this study. Because the researcher's chosen location is solely in the logistics company in Perak, the scope of this research is limited to the logistics company in Perak. It excludes the other state logistics company, resulting in a small sampling frame for research. The results would be influenced or less accurate because they were derived only from a logistics firm with a warehouse in Perak, rather than the full logistics company with a warehouse in Malaysia.

Our recommendations for future studies were based on our prior, during, and post-study experience. To perform a future study, the number of respondents must be increased. Because of the availability of a big sample, the study's results were more accurate. The number of research questions must be increased to broaden the area of the study and generate more thorough and accurate questionnaire answers. In addition to the questions that have been documented to be complete and more accurate that are relevant to the circumstance that has been provided. Find further information as well as information on the study material that will be reviewed. This is because there is enough material made of a study that has a firm basis and support, and investigations will be easier to carry. This review phase should be extended to produce more extensive and exact results as necessary during the questionnaire.

Throughout this research, it will be important to grasp the warehouse management system's knowledge gap of understanding what the appropriate technology to be implemented is and how it will aid them in reducing costs and making the warehouse process more efficient. This research assists logistics organizations in developing or improving their warehouse management system through the implementation of the suitable system or technology. It would be difficult for researchers to extract and determine which system would be best to apply for the logistics organization.

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BAFE040:
**JOB INSECURITY AND TURNOVER INTENTION: ORGANIZATIONAL
TRUST AS MEDIATOR**

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Abstract

The purpose of this study is to investigate the potential mediating effect of organizational trust on the relationship between job insecurity and turnover intention among banking employees. Over the years, the turnover rate has been an on-going issue in the Malaysian banking industry, especially when financial services recorded the highest turnover rate, specifically in commercial banks. On top of that, the constant organizational changes occurring in the banking industry also played a role in contributing to perceived job insecurity among banking employees. While many studies have been focusing on the outcomes of job insecurity, little is known on the underlying mechanisms that may account for these outcomes. This quantitative cross-sectional study utilizes primary data collected from 110 bank employees in Klang Valley using snowball and purposive sampling method. Findings revealed that job insecurity predicted organizational trust and turnover intention, while organizational trust predicted turnover intention. Based on the mediating analysis via PROCESS Macro, findings showed that job insecurity has an indirect effect on turnover intention, through organizational trust. In other words, organizational trust partially mediated the relationship between job insecurity and turnover intention. The present study brought awareness to the employers in the banking sector on the importance of providing job security to their employees. They were also suggested to be transparent towards their employees, in order to build trust between them. When a trusting relationship between the employees and the employer of the organization is conserved, employees' intention to leave can then be minimized.

Keywords: job insecurity, turnover intention, organizational trust, banking industry

INTRODUCTION

In a developing country such as Malaysia, the banking industry served an intermediary role in the Malaysian economy as the banking industry controls the financial flow and accounts for over 70% of the country's financial system's total assets (Sufian, 2010). On that account, an efficient banking industry will ensure an effective financial system and thus contribute to the country's economic growth and development (Sufian et al., 2016). The principal objectives of banks are to promote monetary and financial stability conducive to the sustainable growth of the Malaysian economy. Towards this end, banks play a crucial role in the development of a progressive and inclusive financial system which entails preserving the core foundations of financial stability at all times, ensuring effective and efficient financial intermediation, and contributing towards economic growth and development.

It is worrying to note that financial services in Malaysia had recorded the second-highest voluntary turnover rate of 18.3%, followed by the high-tech/IT sector (20%) (Rahman, 2012). Additionally, there is also a sharp increase from 7.4% to 13.3% in the turnover rate of Malaysian employees in the financial service sector in the year 2013 to 2014 (Letchumanan et al., 2017). This became an issue when the turnover rate in the Malaysian financial services recorded its highest rate, particularly in commercial banks (Keni et al., 2015). The loss of knowledge and technical skills due to the high turnover rate have massively impacted the productivity, quality and profitability of commercial banks (Keni et al., 2015) which may further leave a dent in the country's economic growth. High employee turnover will further increase the bank's costs related to recruitment and selection,

personnel process and induction, training of new employees and loss of knowledge gained by an employee while on the job (Maniam, 2014). Furthermore, high employee turnover resulted in understaffing which consequently led to a low level of productivity and indirectly affected the strategic planning of banks (Hussain et al., 2013). These facts highlight the importance of addressing the issue of high turnover rate among banking employees in Malaysia, especially those from commercial banks. Thus, it is important to understand the factors that affect turnover intention amongst employees in this industry.

The high turnover rate is partly contributed by mergers and acquisitions amongst banks due to the pressure of globalization to obtain efficiency through labour market flexibility, leading to global headcount reduction and uncertain employment conditions. Another contributing factor is the digitalization of banking services. In the year 2016, approximately 18,000 Malaysians in the banking industry lost their jobs due to the introduction of “disruptive technologies”, such as e-banking and automation (Tan, 2017; Dannisha, 2017). With this, banks gradually reduced headcounts in the banking industry, as the use of technologies and gadgets began to take over the human employees’ tasks in a more efficient and error-free manner (Lee et al., 2018).

These two factors contribute towards the bank employees feeling of increased job insecurity as they feel that they were easily dispensable at any time, under any circumstances (Shirzadi et al., 2017). Subsequently, bank employees were more likely to lose trust, be dissatisfied and portray counterproductive work behaviors towards their organizations (Tirelli & Goh, 2015). When employees no longer trust the organization, they are more likely to quit their job (Ujoatuonu et al., 2018). Employees usually have an expectation whereby their contributions towards the organization in terms of job performance and loyalty will be reciprocated with job security and rewards (Savarimuthu & Rachael, 2017). However, when employees perceived that their expectations were not met despite putting their full effort into the organization, their trust towards the organization may decline (Nienaber et al., 2015), which in turn led to increased intention to leave the organization. Since trust served as a crucial component for organizational effectiveness (Tirelli & Goh, 2015), its role as a mediator between job insecurity and turnover intention among banking employees was further investigated in the present study.

Thus, the objective of this study is to understand the effects of job insecurity on turnover intentions amongst banking employees and to explore the mediating effect of organizational trust on this relationship.

LITERATURE REVIEW

Job Insecurity and Turnover Intention

Sverke et al. (2002) defined job insecurity as the uncertainty about an existing job's prospects or uncertainty about the prospective nature of the present job. Dachapalli and Parumasur (2012) clarified that job insecurity does not only relate to the degree of uncertainty but to the components of job insecurity as well. They are: (1) seriousness of the threat regarding job aspects and continuity; (2) significance of job feature to the employee; (3) perceived threat of negative occurrences to the job situation; and (4) powerlessness and incapability of employee to control the factors mentioned above. Apart from the perceived threat of losing a job, job insecurity may also cover thoughts of losing important job features such as salary, promotion, career growth, position within the organization and access to office materials and resources (Greenhalgh & Rosenblatt, 1984). De Witte et al. (2012) clarified that when there is a discrepancy between what employees hoped for (security about future of their present employment) and what they ‘receive’ (the present job is perceived as threatened), there is job insecurity.

Turnover intention is defined as the employees’ inclination to voluntarily withdraw from the organization to find a new job. It may also be a movement of employees to tender their resignation (Kartono & Hilmiana, 2018). Intention to leave refers to the conscious willingness to leave the organization, which includes having thoughts or ideas of leaving, the act of searching for a new job, and the act of deciding to leave the job (Sinniah & Kamil, 2017).

Literature suggests that perceptions of job insecurity might have detrimental consequences for employee attitudes leading to turnover intention. Job insecurity was found to be a significant

predictor of employees' intention to leave (Camgoz et al., 2016; Lee & Jeong, 2017). Gunalan and Ceylan (2015) claimed that the more employees are fearful of losing their job or feel insecure about maintaining their job, the more they may consider or begin actively searching for new employers or organizations.

Job Insecurity and Organizational Trust

Organizational trust is an entity consisting of the employees' trust in the manager or leader and the trust in the organization (Cetin & Guney, 2017). Ashford et al. (1989) characterized organizational trust as employees engaging with the organization and their willingness to build long-term relationships with the organization. In other words, employees recognize and accept the organizational policy and are willing to have themselves exposed to job-related risks. Yu et al. (2018) added that employees who trust their organization are able to comprehend any forms of uncertainty coming from the organization, to the point that they are not afraid to share risks stemming from decisions made by the organization.

Existing research indicates job insecurity as a predictor of employees' reduced trust in an organization. In other words, the higher the insecurity perceived by the employees towards their job, the lower their trust is towards the organization (Karkoulian et al., 2013; Richter & Naswall 2018). Findings from these studies conclude that employees begin doubting their employer and lose their trust when they experience job insecurity. They may also change their attitudes and behaviours toward their employer and work which are manifested via employees' counterproductive and deviant work behaviours, as well as resignation.

Organizational Trust and Turnover Intention

Several studies have found that organizational trust to be a significant predictor of employees' intention to leave (Basit & Duygulu, 2018; Jiang & Shen, 2018; Tirelli & Goh, 2015). Tirelli and Goh (2015) suggested that employees who have high organizational trust were more likely to develop a higher level of emotional attachment to the organization, portrayed by a higher level of commitment towards the organization and thus, have a lower tendency to leave. The logic behind the concept of trust is that, when an employee has a high level of trust towards the employer or organization, the employee may feel safe and comfortable with his/ her job and thus, has a lesser inclination to leave. On the other hand, when an employee begins to show signs of distrust towards the employer and organization, the employee may feel worried, anxious and uncomfortable with the job and hence, has a higher intention to leave (Zeffane & Bani Melhem, 2017).

Organizational trust as a mediator in the relationship between job insecurity and turnover intention

While past research has focused on the effects of job insecurity on turnover intention, limited studies are examining the underlying mechanisms that may account for these effects. Taking into consideration the knowledge gaps and scholarly calls for more studies in this area (Camgoz et al, 2016; Lee & Jeong, 2017; Shirzadi et al., 2017), the present study investigates the role of organizational trust as a mediator in the relationship between job insecurity and turnover intention.

Past studies such as those by Kim (2019) investigated the sequential mediating role of organizational trust and organizational identification on job insecurity and organizational citizenship behaviour among South Korean employees from various industries. Findings revealed that job insecurity was negatively related to organizational trust, while organizational trust and organizational identification were positively related to each other. Organizational identification was also found to be positively related to organizational citizenship behaviour. In addition, the study confirmed that both organizational trust and organizational identification sequentially and fully mediated the relationship between job insecurity and organizational citizenship behaviour. Based on this premise, this study postulates that organizational trust can also be a suitable mediator between job insecurity and turnover intention, as both turnover and organizational citizenship behaviour were categorized as work-related behaviours (Erdogan & Bauer, 2010). Therefore, the ability to mediate the relationship between job insecurity and organizational citizenship behaviour implies that organizational trust is very likely to be able to mediate the relationship between job insecurity and turnover intention as well, in the present study.

Psychological Contract Theory

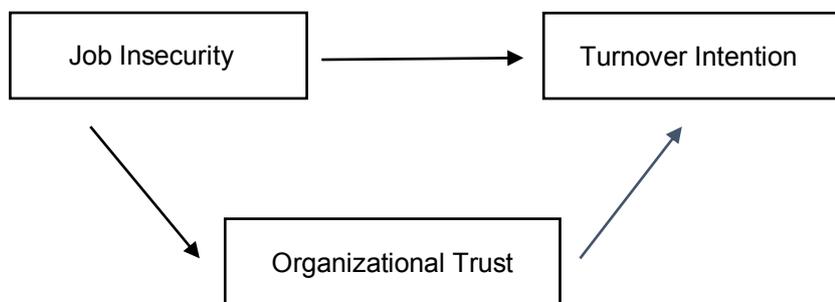
Psychological contract theory is the fundamental framework used to explain the unwritten mutual assumptions and expectations from both employer and employee. From the employer's viewpoint, the aspects of the employment relationship covered by the psychological contract include competence, effort, commitment and loyalty. On the contrary, employee views that psychological contract covers aspects such as security in employment and trust in the management of the organization to keep their promises (Armstrong & Taylor, 2014).

When employees' loyalty and efforts towards the organization no longer guarantee their job security in return, the perceived exchange may be viewed as imbalance by the employee, breaching the psychological contract. A psychological contract breach occurs when the employee discerns the failure of the organization to deliver obligations as expected from the psychological contract (Salin & Notelaers, 2017). Being identified as one of the sources of psychological contract breach, job insecurity was seen jeopardizing the continuation of the employment relationship. As a result, performance and loyalty in exchange for job security can no longer be expected (Richter & Naswall, 2018).

The consequence of this breach is the deterioration of the employer-employee relationship, often manifested by employees' lack of trust towards the employer (Conway et al., 2011). When this happens, employees struggle to believe the organization's ability to commit to the implied obligations and may eventually cease trusting the employer and organization due to the perceived psychological contract breach (Richter & Naswall, 2018). Additionally, a psychological contract breach can lead to significant changes in employee's work attitudes and behaviours, as it negatively affects work-related outcomes such as organizational commitment, productivity, job satisfaction and turnover (Heffernan & Rochford, 2017). De Hauw and De Vos (2010) justified that employees will be more reluctant to put in extra effort in the interests of the organization after a psychological contract breach and hence, have a lower inclination to remain as employees in the organization.

CONCEPTUAL FRAMEWORK

Based on the literature review and underpinning theory, the proposed conceptual framework for this study is as shown in Figure 1.



RESEARCH METHODOLOGY

Research Design and Participants

This study employed a quantitative cross-sectional design to collect a total of 110 banking employees in Klang Valley, Malaysia. They consisted of 60.9% of females with ages ranging from 23 to 59 years old (Mean= 33.15; Standard deviation: 10.06). 60% of the sample was Chinese, followed by 27.3% of Malays, 8.2% of Indians and 4.5% of other ethnicity. The participants of the study were collected via the purposive and snowball sampling methods. The participants fulfilled the following criterias: 1) employees who are working in banks located in Klang Valley, Malaysia; and 2) working at least 9 months in the current organization.

Research Procedure

The data of the study were collected using Qualtrics, an online survey tool. The survey link was posted on the social media of the researchers and also the link was sent to individuals who are working in commercial banks. Participants were also encouraged to share the link with their network or colleagues. On a click to the survey link, participants were briefed with the objective of the study, potential risks and benefits of their participation, participants' rights, and privacy and confidentiality. Participants were also asked to provide their agreement to voluntary participants in the present study. The survey took about 15 – 20 minutes to complete. The procedure of data collection was reviewed and approved by the UTAR Scientific and Ethical Review Committee (U/SERC/81/2019).

Measures

Job Insecurity Scale (JIS; Hellgren et al., 1999) was used to measure employees' perception of job security. JIS consists of 7-item rated on a 5-point Likert scale ranging from 1 (strongly agree) to 5 (strongly disagree). A total score was computed after reversed items 5, 6, and 7. A higher score indicated a higher level of job insecurity perceived by the banking employees. The Cronbach Alpha reliability is reported with .86.

Organizational Trust Inventory (OTI; Nyhan & Marlowe, 1997) is a 12-item measure of organizational trust. Respondents were asked to rate on a 5-point Likert scale from 1 (Very low) to 5 (Very high). A total score was computed with a higher score corresponded to higher organizational trust. The Cronbach Alpha reliability is reported with .95.

Turnover Intention Scale (TIS; Roodt, 2004) short version was used to measure banking employees' desire to leave the organization. This scale consists of 6-item rated on a 5-step bipolar scale; Never to Always, Very Satisfying to Totally Dissatisfying, and Highly Likely to Very Unlikely. A total score was computed with a higher score corresponding to a higher intention to leave the organization. The Cronbach Alpha reliability is reported with .88.

DATA ANALYSIS

The results of the study found a significant negative association between organizational trust and job insecurity, $r(108) = -.64, p < .001$. Turnover intention was positively linked to job insecurity, $r(108) = .61, p < .001$ and negatively associated with organizational trust, $r(108) = -.56, p < .001$.

Table 1: Normality, Descriptive and Correlation Matrix (n=110)

	Mean	SD	Skewness	Kurtosis	1	2
1. Job Insecurity	18.74	5.64	.53	-.07	-	
2. Organizational Trust	41.56	9.00	-.67	.72	-.64***	.
3. Turnover Intention	17.25	5.75	.07	-1.23	.61***	-.56***

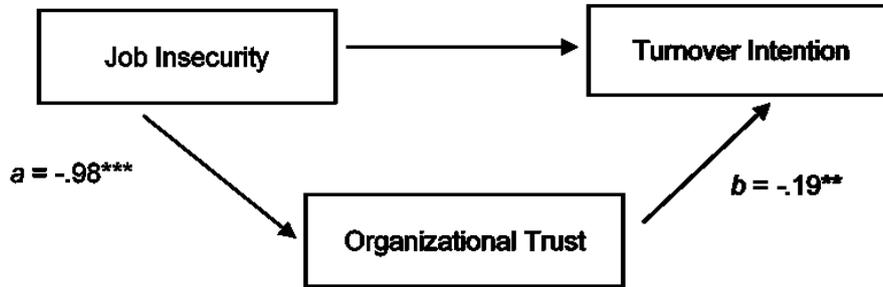
Note. SD= Standard deviation; *** $p < .001$

A mediation analysis using Hayes (2013) PROCESS SPSS macro (Model 4) was conducted to examine the hypothetical mediating role of organizational trust in the association between job insecurity and turnover intention. The 95% bias-corrected confidence interval (CI) was generated using 10,000 bootstrapping samples. The indirect effect is considered as statistically significant when the CI does not contain zero. Results indicated that job insecurity was significantly associated with turnover intention (i.e., total effect) by controlling the effect of gender and ethnicity, unstandardized regression coefficient, $B = .59, SE = .08, t(106) = 7.39, p < .001, 95\% CI [.43, .75]$. The direct effect of job insecurity and turnover intention remained significant even after controlling the effects of the mediator of organizational trust as well as the covariance of gender (1 = Male) and ethnicity (1 = Malay), $B = .40, SE = .10, t(105) = 4.08, p < .001, 95\% CI [.20, .59]$. Malay samples were found to be significant link to turnover intention after control its effect, $B = 2.15, SE = .97, t(105) = 2.22, p = .03, 95\% CI [.23, 4.08]$. Likewise, job insecurity was also found negatively significantly associated with organizational trust, $B = -.98, SE = .12, t(106) = -8.16, p < .001, 95\% CI [-1.22, -0.74]$. Male reported with lower organizational trust when it is set as covariance, $B = -2.88, SE = 1.40, t(106) = -2.06, p = .04, 95\% CI [-5.65, -0.11]$. The indirect effect found that organizational trust mediated the association between job insecurity and turnover intention, $B = .19, SE = .06, 95\% CI [.06, .30]$. It is

concluded that a complementary mediation model whereby organizational trust partially mediated the association between job insecurity and turnover intention.

Figure 2: Unstandardized regression coefficients

$$c = .40^{***} (c = .59^{***})$$



Note: The unstandardized regression coefficients of the total effect between job insecurity and turnover intention in parenthesis. *** $p < .001$; ** $p < .01$

CONCLUSION AND DISCUSSION

The study examined the mediating role of organizational trust in the association between job insecurity and turnover intention among banking employees in Klang Valley, Malaysia. As predicted, job insecurity was positively associated with turnover intention. This finding is true especially when employees feeling insecure or fear losing their job will tend to begin actively searching for new jobs which is the sign of the intention to leave (Gunalan & Ceylan, 2015). Likewise, a negative relationship was found between job insecurity and organizational trust. The result of the study is supported by Jiang and Probst (2019) highlighted that a disruptive organizational setting (i.e., company downsizing) will create the feeling of job insecurity which consequently disconcerting organizational trust. This situation is quite common in the banking industry in Malaysia such as the integration of bank institutions and the implementation of machines for banking services due to the advancement of technology in replacing the human workforce. This could have impacted employees especially the experiences of downsizing, restructuring, and relocating of branches. This phenomenon will provoke feelings of insecurity in the banking staff and diminished the trust toward the organization. The result of the study also found that banking employees with higher organizational trust tend to report with lower intention to leave. This result is in line with Jiang and Shen (2018) and Tirelli and Goh (2015) who found that higher organizational trust tends to develop a stronger emotional attachment to the organization and portrayed a higher level of commitment towards the organization. Subsequently, lower the tendency of turnover intention.

The mediation analysis indicated a significant mediating role of organizational trust in the link between job insecurity and turnover intention. The mediating role of organizational trust was evident in the association between job insecurity and other outcome variables such as turnover intention, organizational citizenship behaviour, job satisfaction and well-being (Karkoulian et al., 2013; Kim, 2019; Richter & Naswall, 2018; Wong, 2012). The result of the study supported the hypothetical mediation model of organizational trust. This implied that banking employee with higher job insecurity tends to diminish their trust toward the organization (i.e., banking institution) which in turn increase their turnover intention. This explanation is supported by the psychological contract theory (Rousseau, 1989) that emphasizes the importance of a strong employer-employee relationship (i.e., organizational trust) resulted from the feeling of job security which will determine the outcome intention to leave.

There are several contributions to be noted. Firstly, the results of the study have enriched the literature on the association between job insecurity and turnover intention among Malaysian banking employees as well as the indirect effect of organizational trust in the link of job insecurity and turnover intention. Besides, the results of the study, several practical implications are to be noted. It is important to the employers especially the human resource practitioners in the banking institution to strengthen the employees' feeling of job security to minimize the turnover intention that results in more investment to train new employees. Notably, companies downsizing and transforming are

inevitable, however, it is still crucial to promote job security to the existing employees to retain the talents in the organization. Furthermore, the banking institution needs to develop organizational trust in the employees given the importance of organizational trust in facilitating the underlying mechanism of job insecurity and turnover intention as evidenced in this study. Better communication and transparency in policy and company direction could encourage more participation of the employees which is beneficial to gain organizational trust that lowers the tendency of turnover intention.

The results of the study should be viewed with their limitations. Firstly, the sample was obtained via non-probability sampling techniques and only focused among banking employees in Klang Valley which the representatives of the Malaysian employees in the banking industry are less promising. Future studies are recommended to duplicate the present study to include different industries, geographical areas in Malaysia and using the probability sampling method to recruit participants to increase the representativeness and to generalize the results of the study. The present study only focused on the associations among job insecurity, organizational trust, and turnover intention. There are other important determinants of turnover intention that are not investigated in this study such as organizational commitment, performance, leadership, organizational culture, and justice which should be considered in future studies to capture a more holistic picture of employees' turnover intention. Moreover, the cross-sectional research design also limits determining the cause and effect between the variables which we would not be able to confirm the hypothetical mediation model of organizational trust. Future studies may consider duplicating the study using a longitudinal study design to verify the results of the present study.

In sum, the present study provides evidence to support the mediating role of organizational trust in the association between job insecurity and turnover intention among banking employees in Malaysia. The results of the study not only advanced the literature to the banking industry but also have raised awareness on the importance to embed the feeling of job security among employees in the banking industry. This is crucial as feeling security in a job context will enhance organizational trust which diminishes employees' intention to leave.

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BAFE045:
**DIGITAL MARKETING IN SOCIAL MEDIA PLATFORM AND
CONTENT STRATEGY: A QUALITATIVE STUDY**

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Abstract

Technology were emerging and Indonesia Internet users increasing rapidly, this situation also affecting the user of social media. Nowadays, many company marketing specialists invested in using social media as part of their marketing activity as they believe this method were more efficient than the conventional way. This was supported by many previous journal had been done that stated there's a positive impact in using social media to the Brand. Although specific research about content in social media and social media platform in Indonesia especially for fresh fruit industry are still limited. Brand XYZ as one of the market leader in Indonesia Fresh Fruit Industry, were shifting their marketing activity to online after has been only focused in offline marketing activity. And with the Pandemic outbreak, this situation urge the brand to develop their digital marketing faster. the objective of the study to analyze customer perception to Brand XYZ in digital marketing. Also to suggest social media platform and content strategy to be used for the brand based on customer perception. The study will be using qualitative study method and data collection that obtain through primary data using direct interview and secondary data will be gathered from company records on social media. The data analysis will be using content analysis approach to interpret the result of the interview and answer the research objectives. The study resulting that to achieve brand goal in digital marketing, the customer often use only two social media platform which is Instagram and Twitter/Tiktok and customer also use PPC ads and it help brand visibility in social media. Customer perception towards Brand XYZ are informative but not relevant to the current user of social media, the customer looking for promotion and fun practical content. The e-commerce channel also one option in the future for a brand to promote their product.

Keywords: Digital Marketing, Social Media, Content

INTRODUCTION

The last 10 years the number of internet users has grown rapidly and with the support of technology development and infrastructure especially in Indonesia, as in 2019 from the total 270 million population, 171 million are active internet users (Statista, 2019). With the country's growth, internet become part of most Indonesian people that is incorporated into their daily activities. With internet potential and highly active number of users, many new platforms of social media being invented, rapid infrastructure development in telecommunication, surely Indonesia future towards digital. In response on the rapid growth of the number people in using internets, technology also improving in mobile phone and social media platform, given the opportunity nowadays every Brand and product try to do commercial ads to sell their product through this channel. The internet has change on how consumers engage with a brand and it transforms the way of marketing and making many of the traditional marketing strategies and structures become obsolete (Edelman, 2010). Digital marketing describes as an all marketing efforts that use electronic device or internet as their tools. Company or Brand can leverage the digital channel such as SEO, social media, email or media platform to reach the customers. Some also referred it as online marketing or web marketing (Desai, 2019). Others also describe digital marketing as a form of direct marketing which links customer with sellers electronically using interactive technologies like emails, websites, online forum, mobile communication etc (Kotler and Armstrong, 2009). Using social media to campaign the Brand is one of the most significant drivers that impacted to creating brand loyalty but it also related to the relevancy of the content, popularity of content and appearance on different social media platform. (Irem, Mesut,

2012). Even though there's also a challenge that it cause minimal effort for a person to switch between competitor (by using internet), thus fundamental understanding of customer is important to get in touch and catch customer attention (Susanne, Monika, 2015). With the New Normal implemented because of the pandemic Covid-19 there's a future risk and changes in consumer behavior because of restriction and limitation of activity in public area and works space, thus may affecting a significant increase of digital interaction and less interaction in offline channel. Digitalization or Online marketing are a practice using web-based channels such as email, social media, Ads-word to spread company brand, product or services to reach its customer. By using digital marketing also create opportunity to have wider reach with less costly budget, and direct interaction or provoking customer to share or recommend the content of the Brand.

Brand XYZ are one of market leader in fresh fruits industry in Indonesia who the supply of fresh fruits mainly come from Lampung, Indonesia. The Fresh Fruit logistic become one of important factor for the company to keep the freshness of the fruit and maintain its quality. With experience in distribution and maintained temperature logistic, the company able to distribute its product to other city as well outside Jakarta. The Brand XYZ become knowledgeable in the retail and customer as the first local fresh fruit brand able to get awareness in the market because its differentiation in the product. Starting from Cavendish Banana, the company expand the product to Pineapple and Guava Crystal as their main fresh fruits besides imported fruits product and other local Indonesian fruits. With the quality and product differentiation, the Brand targeting premium market segment in Indonesia. To build the brand awareness the brand heavily rely on offline marketing activities in their distribution channel store to promote its brand and product by communicating the benefit of the fruits and directly engage to the customer. Not only that, the brand also held many event sponsorship and community engagement as one of the tools for the brand to increase its engagement to their customer. The strategy continued implemented by the company and confirmed by the result of fruit shopper behavior research (based on internal research in 2016) that buying fruits are impulsive behavior and maintain quality and visuality were important factor to trigger the impulsive buying behavior for customer. With developing the digital marketing, the brand expecting it will help the company to grow and reach more customer in the future. The objectives of the Brand is to build a healthy lifestyle with fruits as its source daily needs by its customer. Therefor in building the digital marketing, Brand XYZ focusing on delivering messages about their product, education, sales promotion features and electronic card (E-card). With the evolution of digital marketing, it changes the way of company to do its commercial activity in the internet and Brand XYZ also try to utilize social media to be company digital marketing tools.

Currently, Brand XYZ was trying to deliver its messages to the customer using the digital platform by owning some of the social media platforms running by the company but by having multiple media social platform by the brand named and owned, it becomes a dilemma for the company to running all the platform and delivering relevant content to the customer with company limitation and resources. With high penetration of internet users in Indonesia and the outbreak of the Pandemic that increase the internet user and changing in purchase behavior to online (Nielsen, 2020) its become more critical for Brand XYZ to escalates their digital marketing strategy. While on the previous statement that each platform has specific function and characteristics to the user and relevant content were also an important factor for the social media. It makes more important for the Brand to focusing their effort and resources in specific platform social media that can deliver the content about the brand. The concept is to explore customer perception of Brand XYZ digital marketing and which are the right platform and content strategy to campaign the brand and product.

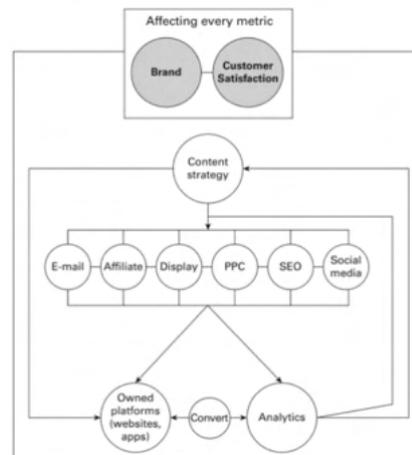
LITERATURE REVIEW

Digital Marketing Tools and Content

The social media revolution changed the internet and how customer do in daily activities, and with technology evolving for example mobile phone, Google, and Smart TV its affect on how people can interact globally. And this change company perspective in their marketing department includes PR, creative direction, Brand, CRM, product development, pricing, communication and etc (Kingsnorth, 2016). Digital marketing also defined as a process that use digital technologies to acquire customer, promote brand retain customer and increase sales. (Kannan and Li, 2017). The concept of digital marketing is to explores how digital technology can increase Brand effectiveness in campaign management and product marketing execution. In digital marketing world, the Search

Engine Optimization (SEO) are key tools that can help your digital communication in the internet. The SEO not only to increase the brand visibility in search results and garner attention from prospective customer but it also a primary source of digital traffic for brands and complements for other marketing channels. The internet and online channel are having different behavior than the conventional channel. How the customer interact each other creating the digital ecosystem on its own (Kingsnorth, 2016). The figure below describes the full ecosystem in digital marketing that influences the brand and customer satisfaction.

Figure 1: Digital Eco-system (source: Kingsnorth, 2016)



- Search Engine Optimization (SEO) : a process of optimizing website to rank higher in search engine results pages, thereby increasing the amount of organic traffic in the website.
- Social Media: this channel is to promote the brand and content on social media channel to increase brand awareness, drive traffic and generate leads for the business. The channel to be used for example are Facebook, Twitter, LinkedIn, Instagram, etc
- Content Strategy/Marketing : denotes the creation and promotion of content assets for the purpose of generating brand awareness, traffic growth, lead generation and customers. The channel that can play part in content marketing are blog or social media
- Pay per click (PPC) advertising : is a method to driving traffic to website by paying publisher every time the ad is clicked. One of the common is google ad words which allow to pay the top slots on google search engine result pages.
- Email marketing : company use email marketing as a way to communicate with the audience. Email is often used to promote content, discount and events as well to direct people toward the business websites.

To influent brand and customer satisfaction, the content strategy are the key factor to be used by the brand and the choice of platform to be used also need to match to reach Brand target audience. From the table above also showed that company should using channels to effectively amplify each other (Kingsnorth, 2018) and nowadays the social media play the huge part in the millennials and society which are an important channel to be develop by the organization.

Social Media Marketing

The social media marketing (SMM) has also been studied in the context of interaction between brands and customer (Godey et al, 2016 ; Kaplan and Haenlein, 2010). The use of social media communication to interact with loyal customer and influence consumer perception of services and products and disseminate valuable information and get feedback from their audience. (Brodie et al, 2013). One of the objectives of SMM is to enhance user interactivity on each platforms by stimulating SM user to share content (Ashely and Tuten, 2015) in addition to the likes and comments posted by the followers on brand page, it also provides a platform for discussion related to the brand. Many companies believe that online brand communities are a platform for effective communication with consumers and provide for effective communication with consumers and provide an access to consumer ideas (Jang et al, 2008). Many type of social media exist and the objectives of the platform

distinguished blogs, forum, business networks, photo-sharing platforms, social gaming, micro-blogs, chat apps, and social networks. The social media landscape is extremely dynamic, with new applications springing up almost daily (Phillips, Miller and McQuarrie, 2014). Top 5 global media social used were facebook as market leader, youtube, whatsapp, FB messenger and Instagram (statista, 2021). And to break down the user demographic are millennials 90%, 77,5% of generation x and 48,2% of baby boomer (Emarketer, 2019). Also 71% consumer who have positive experience with a brand on social media are likely to recommend the brand to their friends and family (forbers, 2018). As specifically in Indonesia the top 5 social media platform are facebook 89%, youtube 83%, instagram 79%, twitter 34% and tiktok 24%. Statista,2020.

Customer Perception

Customer perceive has been defined as overall customer assessment of the utility of a product or services based on perception of what is received and given (Zeithaml, 1988), while customer perception is a process for a customer to choose, organize and interpret any information to create the image. Not only perception can be triggered by physical contact but also can be triggered from anything around the customer depends on the customer situation and behavior (Kotler et al., 2017). The customer perception are important where it related to the brand and quality of services. The customer perception can be influence by customer experience, marketing, WoM (Word of Mouth). Because perception could be different individually, there are 3 stages to make the process of perception which are Exposure, Attention and Interpretation.

From previous quantitative study resulting there are 6 factors that relevant to customer perception towards social media advertising in India (Daroch, 2017), the first one is Informative as the most significant factor that related to customers were 'Informative' as it describes as social media as an important source of information related to products and helps user for making purchase decisions (Daroch, 2017). Second is Recall, it indicates that user of social media thinks are easier to remember brand advertisement on social media rather than other media. The third factor are Privacy and it specifies the fear of user being intruded from social media advertisement. The Fourth factor is Perceived interactivity which revealed as the advertiser should make advertisement that can catch the attention of user immediately. The fifth factor are Visibility, it shows that position of the advertisement on social media should be place where it can be easily noticed. The last one are Planning, from the research reveals that user that visit on social media has intention to visits if get updates about people or wanted to go for online shopping (Daroch, 2017). To help author in building the framework all the variable will be a reference in interviewing the customer. Understanding customer perception in social media will help the brand to create a better customer experience, consistency, forge emotional bonds with customers and communicate better internally.

CONCEPTUAL FRAMEWORK

Figure 2: Research Framework (source: Kingsnorth, 2016 ; Daroch, 2017)



To answer on how customer perception for Brand XYZ digital marketing, author using the framework on figure 2 as based in the qualitative study to answer the research objectives. In developing the digital marketing, first author must determine the brand goal on what the brand want to achieve and key message they want to deliver. Then author will be conducting research about the digital marketing in social media platform and content strategy from the view of both the Brand and Customer perception. To help author in concluding the customer perception in Indonesia author using

the previous research about factor that affecting customer perception in social media. The Qualitative study served as the main methodology for this study that will obtained from interviews as primary data.

RESEARCH METHODOLOGY

Research Design

To answer the objective of the research, qualitative and case studies approach will be used to capture the insight of brand and social media phenomena in digital marketing strategy. Based on Yin 2003, case study method allows the researcher to get holistic view of real life events and understand a complex social phenomena. As for qualitative research method also one of the tool to get the meaning and insight of people in certain events they experience (Bogdan & Biklen, 2003). This approach will explain the online digital phenomena and its use for brand marketing strategy also give deeper understanding for online media user. This chapter will describe the case study research design, case study protocol, data collection and analysis method to achieve the purpose of the study.

This study unit of analysis will be conducted to Customer of Brand XYZ that using social media to answer the research question of the study. The Primary data will be conducted through interview to the customer of XYZ brand and to get depth Digital strategy of XYZ Brand, interview to Management will also conducted. Secondary data gathered from the last information in the social media of the Brand which gathered from Twitter, Instagram and Facebook as the most active sites used by the Brand.

Table 1: Interview Script

Interview Question	
A brief introduction about the study and context of the research. And request permission to record the interview	
Preliminary question	1. how often are you using social media 2. are you well aware of Brand XYZ? 3. Are you follow Brand XYZ in Social Media?
Study Question for Brand XYZ management	4. what is Brand XYZ Digital marketing Strategy? 5. who Brand XYZ target audience in social media? 6. how Brand XYZ represent in social media? 7. is there any challenge for using online marketing? 8 what digital tools Brand XYZ use? 9 what information or content Brand XYZ give to attract customer?
Study Question for Internet User / Customer	10 what is social media customer use? And why? 11 how often the customer use the social media? 12 do customer have follow a brand? 13 do the customer ever receive information through Email, social media, or SEO or click ads? 14 why you choose the social media to look for information? 15 what information do you look in social media? 16 what do you think about brand XYZ? 17 what do you need from brand Brand XYZ to give information in social media?

DATA ANALYSIS

The interview result were processed using VIVO software, to ensure structured approach in qualitative research. On the table below were information of sample interview profile data, result code from interview, descriptive code and final code to be use in interpret the interview using content analysis.

Table 2: Interview Profile

Interview Code	Gender	Status	Occupation
SBM	Female	Married	Brand XYZ Senior Brand Manager
DM	Male	Married	Brand XYZ Digital Media Manager
User A	Female	Married	Fulltime Housewife
User B	Female	Married	Fulltime Housewife
User C	Female	Married	Fulltime Housewife
User D	Female	Single	Employee
User E	Female	Single	Employee
User F	Female	Married	Employee

After interview were finish and transcribed, author organized, cleaning and process the result of the interview. To get pattern and conclusion from the result, author follow the qualitative research process below.

1. Data Transcribed, extraction unit and Descriptive code

After the transcribed data input to the software, researcher define the early descriptive code from the initial interview. Below are the early descriptive code

2. Theme of Code

From the descriptive code, the next step is to grouping the result code and make theme

3. Final Category

The description of final category made from the theme code to help author determine the description of category and coding rules

Table 3: Descriptive Code Result

Code	Subcode
1. Brand XYZ Digital marketing	Influence Social media user habit Increase Brand Awareness in social media Using content to educate customer
2. Brand XYZ target audience in social media	premium market segmentation Mothers
3. Brand XYZ messages in social media	Relevant lifestyle to the target audience
4. Brand XYZ challenge in Online	Resources
5 Brand XYZ digital tools to use	Social Media Content
6. Information or content Brand XYZ in social media	Education activity Interactive quiz
7. Customer social media to use	Twitter Tiktok Instagram Facebook
8. frequency in using social media	Every day

Table 3: Descriptive Code Result (continued)

Code	Subcode
9. customer brand to follow	fashion brand entertainment brand other local brand
10. Customer receive information through Email, social media, or SEO or click ads	social media click ads
11. Customer reason using social media for information	more active Informative Fun attractive
12. Customer information need in social media	entertainment hunting new product reviews or testimonial Brand Sales / product promotion Update from favorite brand
13. Customer perception for brand XYZ in social media	serious informative

Table 4: Theme of Code

Initial Theme	Category Theme
Brand XYZ Digital Marketing	Brand XYZ Digital Marketing
Brand XYZ Target Audience	
Brand XYZ Challenge	
Brand XYZ digital tool	
Customer perception Brand XYZ in social media	
Customer need for information	Social Media platform
Reason using Social Media	
Frequency in using social media	
Customer digital used in receive information	
Customer brand to follow	Content in Social Media
Customer social media	
Need information in brand	
Perception in Brand XYZ content	

Table 5: Category of Content Analysis

Category	Definition	Example	Coding Rules
C1 : Brand XYZ Digital Marketing	Consist of Brand XYZ Brand in digital marketing, target audience and tools within the organization	"we choose to utilize the social media platform to overcome the challenge we face within the organization"	describe information related to Brand XYZ in digital marketing to customer perception about Brand XYZ

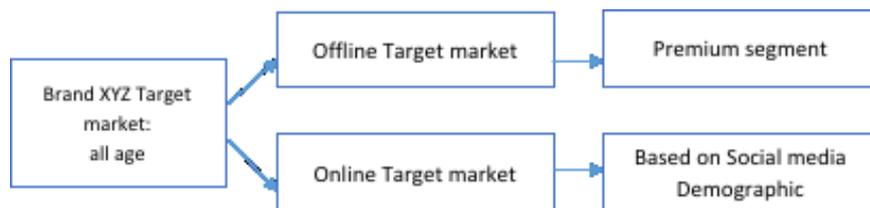
Table 5: Category of Content Analysis (continued)

Category	Definition	Example	Coding Rules
C2 : Social Media platform based customer	Related to customer needs in using social media included platform to choose	“for twitter usually to find discussion while Instagram is to update new product or promotion”	The experience of the customer in social media. And reason to choose specific platform
C3: Content in Social Media	The content review and needs in information for customer	“I will look information that I like and need from Brand that I follow in Instagram”	Information relating the information needed in social media by the customer

Brand XYZ Target Market

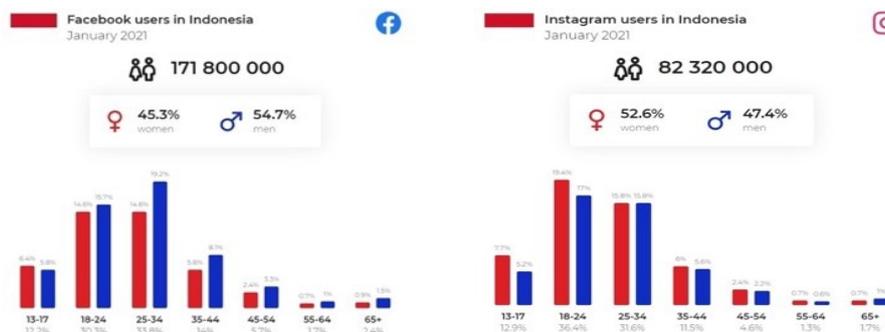
One of the key factor in defining marketing strategy is to describe the target market and their needs (Kotler et al., 2017). Identify target market can be obtained from the organization objectives or product features that will meets the needs of certain market segmentation. From the interview result the company target market in digital platform should be different according to the user of the platform but Brand XYZ decide to use social media platform demographic as their audience.

Figure 3: Brand XYZ Target Market Research Result



From the data taken by Statcounter 2021, that Facebook are the biggest user in Indonesia obtaining 57,8% while Youtube are 27,56% and Instagram 7,81% and Twitter 3,92%. Which Brand XYZ penetrate all the channel as their marketing platform to reach its customer. But in each platform serve different market segmentation, age and feature services that give the customer different experience.

Figure 4: Indonesia Social Media User Demographic (source: napoleoncat stat, jan 2021)



For example from the picture above that the range of age and gender for Facebook and Instagram are different, where facebook user are dominated by male in age between 25 years old and above while Instagram user are dominated by female in age below 34 years old. This defines that if the Brand aim to targeting mother that use in social media, the average age of user will be around 20 – 34 years old, which could have characteristic of young, millennial and family. Digital marketing tools

In building the digital marketing, one of the factor are choosing the tools which are SEO, Email, Social Media, PPC (pay perclick) and Content (Kingsnorth, 2016). On the subject from the interview of Brand XYZ Management, they only using the social media and content in building their customer in internet. The biggest challenge factor that Brand XYZ face in developing the digital marketing is resources, thus the company choose only to focus on 2 tools as the first stage in development the digital marketing. As from the customer perception reason to use the digital platform are to obtain information regarding a product or a brand. And to obtain the information they choose social media main platform, driven by updates or interesting content, some also states use the PPC (pay perclick) ads occasionally if the ads are relatable to their interest, the tools help customer to redirected to the owner page. Another channel that should be considered to put ads are the e-commerce channel because some of the platform such as JD.ID, Shopee were mentioned in the interview as one visited channel when the customer in needs to looks for Brand offer or product to make a purchase.

Figure 5: Digital Marketing Tools Research Results



Customer Perception Towards Brand XYZ

Company goals in the digital marketing are to educate the customer, increase the brand awareness and influence the social media user habit. The Brand objectives is to create healthy lifestyle habit related to the target market in social media. Thus Brand XYZ focus on educating about the brand or product, create activity in social media to build engagement, such as held quiz in their social media platform. Regardless the effort, from the data interview many stated that even though its informative but customer perception towards Brand XYZ are 'serious', some also not notice the about the activity of the Brand XYZ held in social media and brand XYZ digital marketing are hard to be recall by the customer.

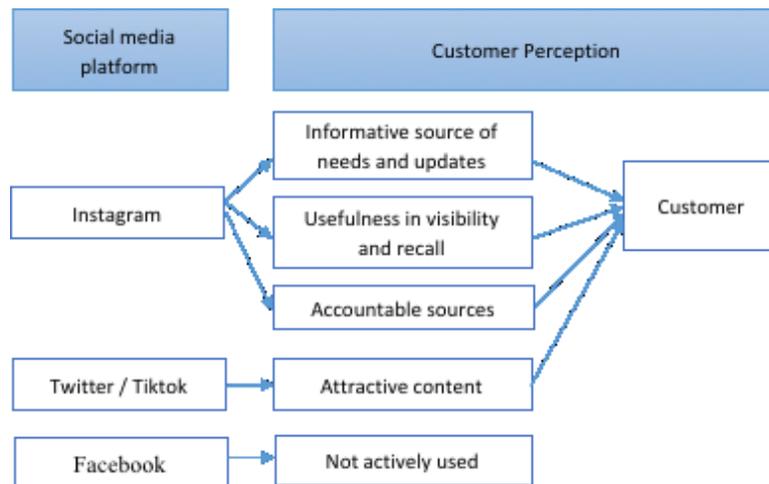
Social Media Platform and Content Strategy for Brand XYZ

The second objective of the study is to design content strategy and to suggest which social media platform should Brand XYZ use. To answer the objective analysis will be done from the customer perception towards social media platform and deliver the insight of content of the Brand that already being done and what actually the customer to expect from the Brand.

Social media gives positive effect to the society in terms of information and updates about most recent happenings in the world and advertisement as social media is a place with largest audience gathered (Akram and Kumar, 2017). In utilizing the social media, there's a significant different behavior of how customer to look for their needs and getting information in social media (Kingsnorth, 2016). From the data result that social media are the tools that frequently visited by the customer either to fill empty hour or fulfill their needs or in need to look for updates of the recent news. And the needs are increasing in the pandemic outbreak where the limitation of interaction outside home are very limited. The social media platform such as Instagram, Tiktok, Twitter, Facebook are one of the resources of information updates and mentioned from the study result. But only Instagram platform were owned and actively used by all the respondent, while Twitter and Tiktok not owned by all of the respondent and Facebook although owned by almost all the user but never being used anymore. The reason of why Instagram are mostly owned are because aside from the platform user to express

themselves through personal sharing, it also serve specific needs to inform the user in social media to get information in new product launch or brand special offers. And 3 service offers from the Instagram platform first of all the visualization that help customer to have visibility of the product. Second, some of the data interview claim that with platform function in notification, it also helps the customer to get important update of certain news they are follow. And third since the platform serve picture and reviews, it become accountable source of the product that change the information that customer usually can find when visiting offline store. While Twitter or Tiktok are second option of social media platform to choose. From the interview mentioned that the two platform are used because it shows interesting topic or content not only about the brand. Other social media platform that mentioned in the interview are facebook but none of the customer in interview still actively used or have perception to obtain information there.

Figure 6: Content Strategy Research Results



Understanding the customer and the demand for the Brand in social media can help to contribute in differentiating brand identity and lead the communication as creating brand value (Bahcecik et al, 2019). Content strategy were part of the digital marketing framework. Digital content is a process for a brand to identify, anticipate and satisfy customer requirement in the context of digital content (Rowley, 2008). To achieve Brand XYZ objective in delivery message about Brand and healthy lifestyle to the customer, the Brand divided 4 content for the social media which is Education, Sales Promotion, Product and E-card. On the study result when author showing the Brand XYZ content to the customer in the interview, they most likely to be interested in sales promotion. The content were become most interested because customer expect to get the best offer of product that Brand XYZ offer and the user also likely want to know about the channel that serve availability to purchase. Some of the customer still lack of knowledge about e-commerce channel that can deliver Brand XYZ products. This could be impacted to customer purchase intention on the later. From the description above, it was clear that the sales promotion content has functional role that drives customer to make a purchase intention. While Education and product knowledge are the second and the third content that actually both from customer perception were useful and informative and from Brand XYZ management also regularly to deliver the content. But when researcher try to get deeper insight about the customer perception about the content by showing the Brand XYZ Instagram about the content, the interview resulted that the content feels not personalize enough or unique to trigger customer interest. Some also claim that the information are very general and they need information that can directly give impact in the daily life. The customer also describe that the messages are not easy to read and not very attractive. And lastly about the e-card topic that no responses appeared from the interview nor customer interested of it.

CONCLUSION AND DISCUSSION

Based on study result, author conclude the analysis of the data to answer study objectives. First Customer perception towards Brand XYZ digital marketing are informative but the content are hard to recall or being noticed by the customer. The current content also not interactive enough for

the customer as Brand XYZ perception currently are 'serious'. So Brand XYZ need to have better visibility and build more attractive content the digital marketing. Brand XYZ target market also need to be more focused in social media so that the brand can build relevant content to the demographic of social media platform yet still aim for Brand target market. To achieve better visibility, Brand XYZ digital marketing should consider in using PPC ads as it helps to reach potential customer in social media.

As Brand XYZ follow technology development and expand their digital marketing, the Brand planned to utilize all the platform but itself become a challenge for the company resources. Instead doing that, Brand XYZ should focusing on one or two platform as their main social media to engage with the customer. From the study result that there's certain function for the Instagram and Twitter/Tiktok for the customer perception towards a Brand. Instagram become the most reliable platform for the customer and also the brand because it becomes source of information, easy to recall advertisement and accountable. While Twitter or Tiktok are platform that used by customer to look for entertainment or discussing topic or interaction for brand and customer, it rarely talk about the product knowledge. Also from the study concluded that the customer mostly only use 2 social media platform which Instagram and Twitter or Tiktok. So its better for Brand XYZ focusing their resource in building digital marketing in this platform.

Designing the Content strategy that related to the Brand and Customer. XYZ Brand objective are creating healthy daily lifestyle through digital marketing. Yet to engage with customer, they prefer fun, attractive, informative, relevant and easy to relate to customer in social media. In creating the content, Brand XYZ should consider content role in functional and engagement. As the functional role drive customer to purchase intention, the sales promotion were the most relevant content in this role included the information of channel to buy and price of the product. For the engagement role, education and product knowledge are the content that useful and informative from customer perception. But on how Brand XYZ should deliver the content need to be improved in a way that more fun, unique and personalize that related to the target market in social media.

Theoretical Implication

The study focus are discussing digital marketing in social media platform and content strategy, which digital marketing actually are consist of not only social media platform to engage to the end customer. There's also several other tools to use such as e-mail, PPC and SEO (Kingsnorth, 2016). In this paper however author findings that though social media tools relevant for a brand to advertise their product but not all the platforms are being used by the customer and has relevant function to advertisement of a Brand. The findings also supported that customer actually using the PPC found in social media to find more information about the Brand. Another finding by the research are e-commerce platform also become one of the tools for a customer to be exposed to the Brand information and content. However the finding were not enough from author to get conclusion and cannot implicated the relation between e-commerce and the Brand. Which author recommend for further research regarding e-commerce role and relationship to a Brand and its relation to other social media.

From 6 factors that relevant to customer perception towards social media advertising (Daroch, 2017) which author use as the based for the research, the findings that Indonesia customer perception from a Brand in social media are to obtain important information for such new updates, visibility from the Brand and recall for the advertisement. But the perception towards each platform in social media might serve different perception of customer and thus Brand XYZ in choosing social media platform to use need to have further studies about social media platform and its role to customer perception and needs. By finding out the specific function and role of social media platform to the customer, could be one alternative on a brand building their customize content in digital marketing.

Managerial Implication

In building Digital Marketing, XYZ as a Brand might want to focus their resources to develop Specific platform in Instagram and Twitter/Tiktok as main social media channel to represent its Brand with specific target market in age. Not only using social media and content, adding PPC tools also will

help Brand XYZ to get better reach to the customer. E-commerce channel could be a potential new channel for Brand XYZ to explore in the future.

While the content strategy in social media platform also need to be personalized to meet user characteristic. By knowing each customer perception towards social media platform, the brand can deliver advertisement that relevant to the platform based customer perception. The Brand should redefine the role of content which to driven the purchase using sales promotion topic or engage to customer using education and product content. Nevertheless the content must be unique and relatable to target market daily life.

Limitation and Future Research Direction

The limitation of the research were specifically related to XYZ brand in digital marketing, social media platform and content strategy. The scope of the study also conducted in Jakarta area because of the time and resources limitation by the author.

In further studies author recommend for quantitative study about the relation of promotion content for platform user for Instagram, Twitter and Tiktok and E-commerce to a Brand. Researcher also like to recommend a quantitative study about Instagram, Twitter and Tiktok purpose to a customer and its relation to customer purchase intention.

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BAFE049:
BEST PRACTICES TOWARDS LOGISTICS PERFORMANCE
MODERATED WITH LEAN: A PILOT STUDY IN WEST MALAYSIA.

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Abstract

Logistics is a dynamic portion of the supply chain and play as the intermediate that links every component or members within the wide scope of supply chain. The overall expenses, on time delivery and operational excellence of logistics services directly influence the performance of the whole supply chain system. According to Makmor, Saludin & Saad (2019), logistics firms need to deal with never-ending pressure to continuously increase the variety of services offered and to improve their customer service relationships which forced them to alter the scope of their business model and service offering because of the ever-changing customer wants. The use of lean in the services sector such as logistics business is still considered in the infant stage. Therefore, the objective of this pilot study is to investigate on the level of implementation and practices of lean by logistics firms operating in West Malaysia (Penang, Port Klang and Johor Bahru) which able to create competitive advantages. The assessment aimed to identify the variables that have significant relationship with the logistics performance moderated with lean implementation in the firms. This pilot study employed a simple random sampling and approached 100 logistics firms registered with the Selangor Freight Forwarder and Logistics Association (SFFLA), Penang Freight Forwarders Association (PFFA) and Johor Freight Forwarders Association (JOFFA). The findings reveal that lean practice is appropriate for improving the logistics operation's performance and suggest valuable understandings for the logistics firms, logistics associations and government for improving the overall logistics performance in the country. However, this study has some limitations. Expanding the survey to logistics firms operating at East Malaysia may increase the response rate and generalization of the results.

Keywords: Best Practices, Logistics Performance, Lean, West Malaysia.

BAFE050:
A REVIEW OF LITERATURE ON APPROPRIATE TECHNOLOGY

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Abstract

Appropriate technology is defined as a technology adaptable for targeted users. This form of technology is particularly useful in support of livelihood of marginalised communities especially in developing countries. The topic of appropriate technology has caught the attention of scholars since the 1970s and the interest has since evolves across disciplines. However, there is a lack of studies that review the topic, especially in the recent 20 years where there is rapid development of new technologies. The objective of the study is to conduct a systematic review of appropriate technology literature in the period of 2000 to 2020. For this review, the study selected articles from databases including Scopus, Web of Science, and others. The study generates themes and sub-themes inherent in the appropriate technology literature. These findings enhanced understanding about the adoption and acceptance as well as attributes of appropriate technology. Research gaps and recommendations for future research and practice are discussed.

Keywords: appropriate technology, literature review, developing countries, technology adoption, technology acceptance

BAFE052:
**SATISFACTION MEDIATING THE EFFECT OF SECURITY AND
CUSTOMER EXPERIENCE ON INTENTION TO CONTINUE MOBILE
BANKING**

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Abstract

The study aims to investigate the role of customer satisfaction as a mediator between security and customer experience, and intention to continue using mobile banking services. Whilst there is an adequate understanding of the factors driving mobile banking adoption, evidence is scarce regarding the consumer's psychological response in the post-adoption phase of service consumption. The extant literature provides a limited understanding of how customer experience manifests in mobile banking services, and its significance in determining customer satisfaction. Drawing on the previous research, the study conceptualises mobile banking service experience as a mix of five dimensions-pragmatic, usability, affective, sensory and social. The experience dimensions and perceived security are hypothesised to exert a positive influence on the user satisfaction with the mobile banking services, thereby driving the behaviour intention. In addition, perceived security is hypothesised to drive the experience dimensions. The study aims to contribute to literature in several ways. An important contribution is to highlight the role of customer satisfaction as a mediator in determining a consumer's intention to continue the service. Second, the study will report which experience factors develop satisfaction. For example, to what extent the social experience exerts a positive influence on satisfaction relative to the pragmatic (value-in-use) experience. This finding will provide guideline to banks which dimensions are critical from consumer perspective. Next, the study will report the impact of perceived security in driving positive experience and satisfaction.

Keywords: Customer experience, Mobile banking, Customer satisfaction; Perceived security

BAFE053:
**CUSTOMER EXPERIENCE, TRUST, COMMITMENT AND LOYALTY
IN MANUFACTURER-DISTRIBUTOR RELATIONSHIPS**

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Abstract

The paper aims to develop insights into customer experience and its impact on trust, relationship commitment and loyalty in manufacturer-distributor relationships. It considers customer experience a higher-order construct determined by brand experience, supplier service experience, and post-purchase experience. Likewise, relationship commitment is a second-order construct determined by a mix of dimensions: value-based commitment, locked-in commitment, affective commitment, and normative commitment. Whilst previous research provides adequate evidence of the impact of perceived value, trust, cooperation on relationship commitment, the effect of customer experience on commitment is yet to be investigated. The second-order customer experience is related to trust, the second-order relationship commitment, and the two types of loyalty- attitudinal and behavioural. In India, one hundred forty-six distributors from diverse industries (electronic components, construction, hardware, industrial supplies, technology solutions, medical devices, automobile spares, and hospitality products) participated in the study. The study tested the hypothesized relationships using partial least squares structural equation modelling technique. The results proved that from a distributor's viewpoint, customer experience and commitment manifest as overall constructs. Customer experience positively influences trust, commitment, and loyalty. This study contributes to B2B literature in several ways. This study is one of the few to examine the B2B customer experience as an overall construct and may not manifest as multiple dimensions of experience. Next, to the author's knowledge, there is no study to examine business customer experience influence on trust, relationship commitment and loyalty. The study offers practical implications for manufacturers. Manufacturers should ensure distributors perceive positive experiences for fostering committed and loyal B2B relationships.

Keywords: Second-order Customer experience, Second-order Relationship commitment, Loyalty

BAFE055:
**A PRELIMINARY REVIEW ON THE PERCEPTION OF USING
VIRTUAL REALITY IN TOURISM**

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Abstract

Sightseeing and leisure have been a part of people's life; however, the current pandemic has imposed a treat to it. The tourism sector around the country has been hit hard by the Covid 19. As such, in view of the current situation in today's tourism industry, it is necessary to find an alternative solution to revive back the local tourist scenic sports. Hence, it is expected that the use of virtual reality (VR) can enhance the level of excitement and expectation towards the tourism industry. Therefore, the specific aim of this present study is to examine the influence of the constructs of content, presentation and interactions towards the behavioural intention to use VR in tourism. in tourism. A qualitative research method is applied in this study, the respondents of this study are the general public who have an experience using the VR. A total of 52 respondents have participated and completed the online questionnaire. The data was analyzed using regression analysis in order to determine the relationships between the independent variables and the dependent variables. The findings of the study indicate that there is significant relationship between the three independent variables (Interaction, content and presentation) toward dependent variable (behavioral intention). Suggestions are also provided base on the findings of this study.

Keywords: Tourism, Virtual Reality, Behavioural Intention, Content, Presentation and Interactivity.

INTRODUCTION

The current COVID-19 pandemic has triggered an unexpected consequence towards various economic sectors globally. Travel and tourism industry is among the worst effected sectors during the current Covid-19 pandemic. This is because most of the travel and tourism sectors have stopped their operations as almost all countries have issued and implemented policies involving travel bans, community lock-down, stay-at-home orders, self- or mandatory-quarantine, and other business-specific restraints. This has caused a major impact as many tourists have cancelled their tours which led to a drastic drop in their numbers. The players in the tourism and hospitality sector have urged the government of their respective countries to take necessary steps to review back the tourism industry despite the spike of Covid-19 cases. These measures are however important to sustain the dying industry that employs millions. Many travel tours have tried to utilise virtual reality (VR) technology to revolutionise the way tourist discover attractive destination in order to stay afloat of the pandemic. For instance, travel tech platform LokaLocal is using virtual reality technology to transform the way people discover destinations in Malaysia. The application of VR can help in attracting and directing travellers to their preferred destinations. This is because, virtual tours will deliver 360-degree interactive experiences to entice travellers to visit their preferred destination when the travel ban in lifted. The Rise of Virtual Tourism Businesses and destinations alike will continue to adapt to the changing times, even delivering virtual experiences as they strive to re-inspire wanderlust in tourists and relaunch the sector. VR is a prominent platform of Information and Communication Technologies in short known as ICT, that integrates "a set of technologies that enable people to immersive

experience a world beyond reality” (Berg and Vance, 2017,). In fact, past studies have recorded that VR is already being used in various areas including in the tourism sector Kim et al. (2020b).

Therefore, in this present study, the researchers aim to carry out a preliminary test to determine the perception of the general public on the application of VR in the tourism industry in terms of the content, presentation and interactions. The study is aimed to address if content, presentation and interactions are important construct that influence the use of a VR technology in tourism

LITERATURE REVIEW

Many authors have studied the interaction as a process (Abrahamsen, 2016; Blumer, 2012; West & Turner, 2010). Interaction has been studied in the context of communication, human information behavior, branding, firm performance, and consumer culture theory (Arnould & Thompson, 2005) Several studies have focused on the differences in the interaction between consumer-artificial intelligent, and consumer-human employee. Results show that consumers are willing to interact with artificial intelligent devices (Hill et al., 2015). Interactivity was also found as one main predictor of consumer engagement with mobile applications or chatbots (Ashfaq et al., 2020). For Sánchez, Barreiro, and Maojo (2000), learner-environment interaction consists of learners making use of a range of mechanisms for creating and modifying virtual worlds Hence, this study employed interaction as the focus of end users’ intention on virtual reality.

VR technologies provide users the possibility to enhance their own experiences at tourism destinations through their own senses. As such many researchers have agreed that the content element plays an important role in influencing the use of a VR technology (Little et al., 2018). Past studies relating VR to tourism highlighted that, the element of content provides tourists a good image of the tourism destinations. Hence, content is in fact capable of influencing the final tourist decision to use the VR in tourism. This is because a good quality content is able to generate a quality experience towards the destination (Neuhofer et al. 2014). Moreover, Marchiori et al. (2017) revealed that VR experience through content holds the potential to lead to the formation of strong memories, providing a better understanding on the effect towards the use of VR technology. Therefore, by developing a more engaging content will influence the user to use the VR. High-quality content available through VR is the main principle factor in influencing end-users in adopting VR technology since people expects new fascinating experiences. To be effective, the contents need to have element of surprises that can extract real emotions and stimulate our senses to increase a person’s experience or first impression even further. To be believable and highly interactive, the contents is to be designed to engage both our body and mind. This will allow one to enjoy a pleasant experience and be “lost” in the realistic experience.

A VR 360-degree video allows one to explore the surrounding sights and sounds by changing direction, either by dragging the screen or through head movements. Furthermore, a 360-degree video has more sensory input and output compared to normal video. The high resolution images and background music increases the sensory breadth and depth of the VR content (Rizzo et al., 1998). By increasing its vividness, the usage of VR 360-degree video helps to transport users into the VR world, giving them a greater sense of being in the environment portrayed. The users even have greater sense of realism by having more control and a greater ability to interact with a video medium when using VR 360-degree than when viewing a blog since the former allows them to explore the surrounding sights and sounds by changing direction, either by dragging the screen or through head movements. As such, it is recognized that content of the VR 360-degree view is significant in attracting used to use a VR technology.

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Consequently, the following hypothesis have been formed

- Hypothesis 1 (H1): There is a significant relationship between the content and the intention to use VR in tourism
- Hypothesis 2 (H2): There is a significant relationship between the presentation and intention to use VR in tourism
- Hypothesis 3 (h3): There is a significant relationship between interaction and intention to use VR in tourism.

CONCEPTUAL FRAMEWORK

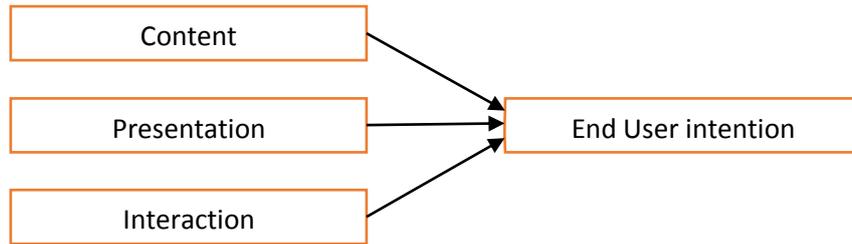


Figure I: Conceptual Framework

Figure I shows the conceptual framework of this study

RESEARCH METHODOLOGY

The present study employed a quantitative research design. A set of questionnaires which was adapted from past studies were distributed to the public via online. The group of eligible respondents are required to have experience using at least a VR technology. The sample size for this preliminary test comprising of 52 respondents. A total of 100 questionnaires were distributed online and 52 set of questionnaires were fully answered and returned to the researchers. A total of 21 items were used to measure content, presentation, interaction, and intention to use VR. All the items were on a scale of 1 (Strongly disagree) to 5 (Strongly agree). Regression analysis was conducted to determine the relationship between the independent variables and dependent variables and explore the forms of those relationships. The findings based on the regression analysis were referred to in finding answers to the research questions.

DATA ANALYSIS

Survey Distribution and Return Rate

The study is using convenience sampling method for survey distribution. Total 70 sets of survey questionnaires were received. However, there only 52 of responses can be used. This research is based on Malaysia’s behavioral intention to use VR in tourism. The respondents who did not fulfil the two criteria set in the questionnaire –(i) only Malaysian are eligible to answer the survey; (ii) must have experience using VR will be excluded from this study. Therefore, total of 18 responses will be filtered from the results.

Respondent Demographic Profile

Table 1: Frequency statistic of respondents (Based on highest percentage score)

		Percentage
Gender	Male	46.2
	Female	53.8
Exposure to VR		100
Time Frame of Exposure	6 months up to and including 12 months	42.3
Purpose of engaging with VR	Leisure/tourism	30.8
Duration	10 min up to and including 30 min	59.6

Based on the table 1, the data is equally distributed among male and females. All the respondents have exposure to virtual reality. Majority of the respondents have a time frame of exposure from 6 months up to 12 months and this contributes sufficient exposure towards VR.

technology. Majority of them used virtual reality for tourism purpose and encountered an exposé in using VR around 10 min to 30 min.

Reliability Measures

Table 2: Cronbach Alpha

Variables	Cronbach Alpha	Number of items
Content	0.852	3
Presentation	0.973	9
Interaction	0.946	6
Behavioral Intention	0.905	3

Cronbach's Alpha is conducted for measuring the reliability test and the constructs' validity of the dependent variable which is behavioral intention in using virtual reality for tourism and 3 independent variables (Content, Presentation and Interaction). Based on the figure above, alpha lies from 0.8 to 0.9 the measurement of all the variables is considered consistent, precise and coherent to the research purpose. By referring to the table 2, it shows that the content achieved 0.852 which consider as very good reliability. Presentation, content and interaction also indicated good reliability with score of 0.973, 0.852 and 0.905 respectively.

On the other hand, if the value of alpha score 0.95 and above, researcher should make sure different aspects of the concept are measured by inspecting items (Zikmund& et.al., 2013). Nunnally (1978) had highlighted if the Cronbach alpha is too high, there could be multicollinearity issues. By analyzing the inter-items correlation matrix this multicollinearity issue could be detected. If the correlation between items above 0.8 it is advised to delete those items before embarking in full scale data collection.

Table 3: Inter item correlation matrix Interaction)

Scale items	I felt I had a lot of control over my visiting experience]	I felt that I could choose freely what I wanted to see]	My actions decided the kind of experience I got]	I felt that the content was responding to my input]	I experienced a two-way communication with the content.]	I felt that the content was interacting with me]
I felt I had a lot of control over my visiting experience	1.000					
I felt that I could choose freely what I wanted to see	.674	1.000				
[My actions decided the kind of experience I got	.807	.724	1.000			
I felt that the content was responding to my input	.756	.808	.674	1.000		
I experienced a two-way communication with the content.	.791	.753	.775	.761	1.000	
I felt that the content was interacting with me	.670	.827	.687	.802	.774	1.000

Table 4: Inter item correlation matrix (Content)

Scale items	The information provided by virtual reality is accurate.	The information provided by virtual reality is reliable.	The information provided by virtual reality is well formatted
The information provided by virtual reality is accurate.	1.000		
The information provided by virtual reality is reliable	.639	1.000	
The information provided by virtual reality is well formatted	.691	.675	1.000

Table 5: Inter item correlation matrix (Presentation)

Scale Items	The mental images that came to mind formed a series of events in my mind in which I was a part of.	The mental images that came to mind made me feel as though I was actually experiencing the destination featured in this preview]	This preview made me fantasize about having the opportunity to experience the tourist destination	I could easily construct a story about myself and the featured destination experience based on the mental images that came to mind	It was easy for me to imagine being at this tourist destination	Whilst reviewing this tourist destination I found myself daydreaming about the featured destination.	Whilst reviewing this tourist destination many images came to mind	The images that came to mind acted as a source of information about the featured tourist destination.	I could actually see myself in this scenario.
The mental images that came to mind formed a series of events in my mind in which I was a part of.	1.000								
The mental images that came to mind made me feel as though I was actually experiencing the destination featured in this preview	.795	1.000							
This preview made me fantasize about having the opportunity to experience the tourist destination	.813	.792	1.000						
I could easily construct a story about myself and the featured destination experience based on the mental images that came to mind	.873	.869	.770	1.000					
It was easy for me to imagine being at this tourist destination	.747	.802	.854	.745	1.000				

Whilst reviewing this tourist destination I found myself daydreaming about the featured destination.	.850	.773	.846	.864	.755	1.000			
Whilst reviewing this tourist destination many images came to mind	.793	.789	.790	.800	.862	.769	1.000		
The images that came to mind acted as a source of information about the featured tourist destination.	.757	.831	.817	.810	.819	.828	.793	1.000	
I could actually see myself in this scenario.	.822	.811	.820	.849	.812	.816	.866	.745	1.000

Multiple Regression

Multiple regression analysis was conducted to examine the hypothesis developed. Multiple regression describes the correlation between one continuous dependent variable and two or more independent variable. In the present study, multiple regression was performed to predict and calculate the linear regression among content, presentation, interaction and behavioural intention to use VR

Table 6: Multiple Regression table

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.831 ^a	.690	.670	.53466

a. Predictors: (Constant), Presentation, Content, Interaction

Source: Developed for the research

Based on Table 6, value of R square is 0.69. This implied that 69.00% of the dependent variable (behavioral intention to use) can be explained by the variances in the three independent variables (presentation, content and interaction).

Table 7: ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	30.507	3	10.169	35.573	.000 ^b
	Residual	13.722	48	.286		
	Total	44.229	51			

a. Dependent Variable: Behavioral intention

b. Predictors: (Constant), Presentation, Content, Interaction

Source: Developed for the research

Base on table 7, the significant value is 0.000 which mean that the dependent variable (behavioural intention) has relationship with at least one independent variables (Presentation, Content and Interaction).

Table 8: Pearson Correlation Analysis

		Behavioral intention
Behavioral Intention	Pearson Correlation	1
	Sig. (2-tailed)	
	N	52
Interaction	Pearson Correlation	.821**
	Sig. (2-tailed)	.000
	N	52
Content	Pearson Correlation	.595**
	Sig. (2-tailed)	.000
	N	52
Presentation	Pearson Correlation	.692**
	Sig. (2-tailed)	.000
	N	52

** . Correlation is significant at the 0.01 level (2-tailed).

Based on the table 8, all the independent variables show a significant value at 0.01 confidence level. This clearly indicate a significant relationship between the three independent variables (interaction, content and presentation) toward dependent variable (behavioral intention to use). The findings also show that interaction has the greatest positive influential determine that affect behavioural intention to use VR compared to content and presentation

CONCLUSION AND DISCUSSION

In conclusion, the results of the study have confirmed that interaction is the most important influential factor that influence the behaviour intention to use VR technology in tourism. Thus it is recommended that that the tourism industry players must understand that the VR technology users really so much on interaction compared to presentation and content. In fact the service providers must understand that the factor interaction should be considered to improve the service and to continuously

This is because interaction can be described as a process has evolved to two-way user and service provider or instructor–learner interaction. As such, the active participation enhances the communication of knowledge and sharing by interaction with service providers in the use of VR technology for the purpose of tourism. If users are willing to increase interaction with their instructors technology or VR service providers, it will lead to a build on their knowledge and have the opportunity to get to get attracted to the use of VR in tourism. know each other. This will eventually affect the behavioural intention to use VR.

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BAFE056:
**A STUDY ON CONSUMER ACCEPTANCE TOWARDS APPLICATION
OF ARTIFICIAL INTELLIGENCE IN HOSPITALITY INDUSTRY**

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Abstract

Artificial intelligence has been expanded and grew in a rapid rise at the commencement of 21st century. This has brought up a big advancement that leads to a big revolution towards all the industries especially to the hospitality industry. It also plays an important role in particularly during the Covid-19 pandemic in order to reduce close contact among consumers and staff. The main purpose of this research is to investigate the factors that influence the willingness of consumers to accept the application of artificial intelligence in the hospitality industry which include expected performance, perceived interactivity and trust. The Technology Acceptance Model is being utilized to illustrate how the extrinsic variables of useful and ease of perception that bring impact on the intrinsic variables which include the beliefs, attitudes and intention as well as result to the user acceptance and adoption of the system. In addition, to explore further the target respondent of this research which is the Malaysian consumers who might have the experience to communicate with the artificial intelligence devices in the hospitality industry. There are 160 respondents who participated in this research. Majority of the respondents of this study are between 18 years old to 30 years old which is made up of 93%. The outcome of the research indicate that expected performance and trust are significant factors to the consumer acceptance towards the application of artificial intelligence devices in the hospitality industry. The future study will cover bigger sample size and respondents above 30 years old.

Keywords: Artificial intelligence, hospitality industry, technology acceptance model, expected performance, trust

INTRODUCTION

At the commencement of 21st century, artificial intelligence has been expanded and grew in a rapid rise. This brings up a big advancement and leads to a big revolution towards all the industries especially to the hospitality industry. During this Covid-19 pandemic, artificial intelligence also acts as an important role in the particular industry. The goal of this research is to investigate the antecedents that influence the willingness of consumers to accept the application of artificial intelligence in the hospitality industry.

In this digitalization era, technology growing extreme fast in this 3C's era. Artificial intelligence and robotic science is emphasized and has been suffocating into different kind of domain. For example, autonomous vehicles have been developed in the transportation industry (Maurer et al., 2016), educational cobots and smart classrooms in the education industry (Timms, 2016), Medical Decision-Support System had been developed in the medical industry (Hengstler, 2016). On the other hand, Samala et al. (2020) defined artificial intelligence as the ability of the computer systems to carry out human intelligent task and activities. As stated by Ruel and Njoku (2020), artificial intelligence brings a big benefit to improve our daily tasks to be more effective and efficient. Thus, the

business outcomes will become better and the proficiency from technological competencies and sentimental skills as well as inventive skills will be improved (Ruel and Njoku, 2020).

The fundamentals of the hospitality industry is the interaction and “serving” between human in nature (Bavik, 2020). As stated by Bavik (2020), the main goals of the hospitality industry are to provide authentic care and create a pleasant memory for their customers. Therefore, the customer satisfaction and quality of services are strongly emphasized in the hospitality industry. By adopting artificial intelligence in the hospitality industry, the service providers are able to provide the services with consistent quality to the consumers (Yang et al., 2020).

Research Problem

Human touch is one of the important element which is concerned by the consumers in the hospitality industry. The feeling of uncomfortable, panic, nervous and timid will arise in the mind of consumers since their technological knowledge and skills are limited, and they will resist to use technology (Ivanov, 2017). This is due to the interaction with artificial intelligence is considered inadequate as it is unable to act human intelligence thoroughly.

In addition, safety and security is one of the issue that should be considered for the application of artificial intelligence in the hospitality industry. According to McCartney and McCartney (2020), there are several issues that often happen in the cyber-crimes of hospitality industry such as identity fraud, information theft, and silent attack via advanced persistent threats. Hence, the variables of trust in this research is used to understand the willingness of consumers to accept the application of artificial intelligence in the hospitality industry.

Research Objectives

The research objectives are as below:

1. To investigate the relationship between expected performance and consumer acceptance towards artificial intelligence in the hospitality industry.
2. To investigate the relationship between perceived interactivity and consumer acceptance towards artificial intelligence in the hospitality industry.
3. To investigate the relationship between trust and consumer acceptance towards artificial intelligence in the hospitality industry.

Research significance

This research is aiming to assist the management of the service providers to have a better understanding on the concerns of consumers about the application of artificial intelligence in the hospitality industry. This is due to the artificial intelligence has become more important in the hospitality industry in this digitalization era, especially during the Covid-19 pandemic in order to reduce the close contact among consumers and staff.

This research also hopes to provide the background of interaction between society and technology. It investigates how the artificial intelligence has been applied and the factors that influence the willingness of consumers to accept the application of artificial intelligence in the hospitality industry which include expected performance, perceived interactivity, and trust. The services providers in Malaysia are able to implement artificial intelligence in the process of service delivery more successful as this research helps them to have a better understanding on the consumer acceptance and the issue which the consumers are concern.

LITERATURE REVIEW

Technology Acceptance Model

The basis of the Technology Acceptance Model which is the rational behavior theory has been initiated by Fishbein and Ajzen in the year of 1975. It was originated from social psychological at first, and typically used for the explanation and prediction of the decision making process. The Technology Acceptance Model illustrated that how the extrinsic variables of useful and ease of perception bring impact on the intrinsic variables which including the beliefs, attitudes, and intention,

as well as result to the user acceptance and adoption of the system. Since then, Technology Adoption and Utilization Integration Theory, a model which is more effective and powerful had been developed by Venkatesh and Davis in the year of 2000 in the explanation of adoption behavior, as well as analyze and illustrates the process of useful cognition formation in the system use. It is a hybrid model that had combined the Theory of Reasoned Action, Social Cognitive, Planned Behavior, as well as Model of PC Utilization, Motivation Model, Task Technology Fit, and the Innovation Diffusion Theory. There are four core concept are comprised in this theory which include the performance expectancy, effort expectancy, social influence, and contributing factors, as well as four alignment variables such as gender, age, experience, and voluntary. (Zhong et al., 2020)

Expected Performance

According to Tsourela and Roumeliotis (2015), Patil et al. (2020), as well as Loureiro et al. (2018), expected performance can be defined as the extent to which the adoption of technology will provide benefits to the consumers in performing certain activities. It also refers to the degree of an individual perceive and trust the application of technology that will enhance the individual's performance and productivity (Kiat et al., 2017). There are some researches shows that the performance expectancy is the strongest factors to predict the beliefs and intentions of consumers to accept the application of artificial intelligence (Patil et al., 2020).

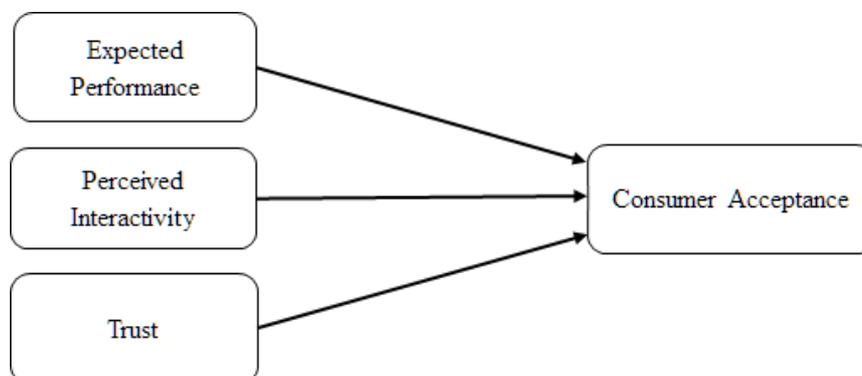
Perceived Interactivity

Christou et al. (2020) stated that the robots in the hospitality industry is not only provide information for the consumers, but also need to interact with the customers. The general definition of "interactivity" refers to something that occurs or take places between two parties and to the facts that both parties have to be active (Janlert and Stolterman, 2017). Furthermore, it also can be defined as the user of a certain system that engages and interacts with the system through "orders" and "responses". According to Janlert and Stolterman (2017), interactivity also refers to an action which happens between the user and artificial intelligence or computer system. This concept has been used in various disciplines and fields, and sometimes more formally developed, as well as used as a daily language in other fields.

Trust

Trust can be defined as the behavior of self-assure assumption that one's susceptibility to injury or attack in an insecure situation will not be utilized. Fernandes and Oliveira (2020) mentioned that trust also refers to the belief of user towards the reliability of artificial intelligence. The complexity of trust in the circumstances of artificial intelligence is higher due to it is not only about the technology and brand, but also the purpose and process of adopting artificial intelligence (Ameen et al., 2020). Pizzi et al. (2020) stated that trust is able to reduce the consumer resistance, and increase the willingness of consumers to follow the instruction of the artificial intelligence devices.

CONCEPTUAL FRAMEWORK



The relationship between the expected performance and consumer acceptance.

According to Gursoy et al. (2019), there is a positive relationship between the expected performance and the willingness of consumers to accept the application of artificial intelligence in the hospitality industry. Besides that, Boes et al. (2015) indicated that the expected performance of artificial intelligence devices has a positive influence on the consumer's intention to use. The expected performance of the artificial intelligence devices is strongly affect the emotion of consumers towards the utilization of artificial intelligence devices (Gursoy et al., 2019). This is due to the communication barriers may be will occurred between consumers and artificial intelligence devices by the adoption of artificial intelligence devices during the process of service delivery which will lead to the consumers have to put more effort to communicate with the artificial intelligence devices (Gursoy, 2019). The willingness of consumers to accept the application of the artificial intelligence devices is higher when the consumers have positive emotion.

The relationship between perceived interactivity and consumer acceptance.

There is a positive relationship between the perceived interactivity and consumer acceptance towards the application of artificial intelligence in the hospitality industry. The consumers will be motivated and willing to accept the adoption of artificial intelligence when there is a great experience during the interaction with the devices (Fernandes and Oliveira, 2020). Other than that, the study of Fernandes and Oliveira (2020) also stated that there are 86 per cent of consumers are more prefer to interact with the human agent through artificial intelligence based system. However, the research of Fernandes and Oliveira (2020) indicated that the perceived interactivity may not always be the crucial factor that affect the willingness of consumers to accept the application of artificial intelligence in hospitality industry. This is due to there are some of the consumers who are not really concerned about the interpersonal interactions or human touch, and this group of consumer are willing to accept the application of artificial intelligence without any negative feelings (Fernandes and Oliveira, 2020).

The relationship between trust and consumer acceptance.

The study of Pillai and Sivathanu (2020) had developed a hypothesis which is the perceived trust has the positive influence on the intention of consumers to accept the adoption of chatbots in the tourism industry. Other than that, trust is mainly underlined on the perception of consumers regarding to protection of their privacy, as well as security and quality of information provided by the artificial intelligence devices (Pillai and Sivathanu, 2020). The consumers are providing their confidential information to the artificial intelligence devices in order to perform some activities such as make a payment for their orders by using a self-service machines in the restaurant. Besides that, the study of Fernandes and Oliveira (2020) also mentioned that the trust has a positive effect to the willingness of consumers to accept the adoption of artificial intelligence directly.

RESEARCH METHODOLOGY

Quantitative research method and descriptive research have been applied in this study to investigate the willingness of consumer acceptance towards the application of artificial intelligence in the hospitality industry. Descriptive research is used to describe the willingness of consumers to accept the application of artificial intelligence in the hospitality industry. The main target population of this research is the Malaysian consumer who are above 18 years old regardless of race and level of education. This group of people is suitable in this study due to they are the consumer who are live in Malaysia, and might aware that the artificial intelligence devices are entering hospitality industry as well as have the experience to interact with the artificial intelligence devices. Therefore, the willingness of Malaysian consumer to accept the adoption of artificial intelligence devices has been studied in this research. The sampling frame in this research is the awareness of the Malaysian consumers that the artificial intelligence devices have been launched into the hospitality industry. Other than that, the consumers who have the experience of interact with the artificial intelligence devices is the another sampling frame in this study. There is no specific sampling location due to the questionnaires were distributed through online due to the Movement Control Order (MCO). Convenience sampling has been applied in this research. The process of collecting the primary data is time consuming; however, it is able to provide more accurate and the latest information about the consumer. In this research, 160 survey questionnaires had distributed through online to collect the primary data. Secondary data assists to have a better understanding about the willingness of

consumer to accept the application of artificial intelligence in hospitality industry, and it is obtained from the online sources and online databases of UTAR library such as Emerald Management e-Journals Collection, Science Direct and others. There are three measurements of independent variable are measured in this research which are the expected performance, perceived interactivity, and trust, as well as a dependent variable which is the willingness of consumer to accept the application of artificial intelligence in the hospitality industry. Multiple regression analysis has been applied to investigate the impact of independent variables which include expected performance, perceived interactivity, and trust towards dependent variables which is the willingness of consumers to accept the application of artificial intelligence in the hospitality industry.

DATA ANALYSIS

There are almost 200 sets of questionnaires were distributed to the Malaysian consumers and 160 had been collected. Majority of the respondents in this study are between 18 years old to 30 years old which stand for 93%. Other than that, there are 5% of the respondents are between 31 years old to 40 years old, and 2% of the respondents are between 41 years old to 50 years old. Most of the respondents in this research are made up of female which are 51.9% while there are 48.1% of the respondents are male. Majority of the respondents in this research are made up of female which are 51.9% while there are 48.1% of the respondents are male. Most of the respondents in this study are Chinese. There are 79.4% of the respondents are Chinese, and 10.6% of the respondents are Malay. Moreover, 9.4% of the respondents are Indian. There are 0.6% of the respondents are from other ethnic groups such as Iban. The respondents in this research are Bachelor Degree holders whereas 21% of the respondents are Diploma holders. Besides that, there are 11% of the respondents are secondary school holders while 1% of respondents hold other education levels such as Master Degree. The monthly income of majority of the respondents which is made up of 64% are below RM1,000 as shown in Table 4.4 and Figure 4.4. Furthermore, the range of salary for 24% of the respondents are between RM1,000 to RM2,499. There are 6% of the respondents gain the salary range of RM2,500 to RM3,499 per month. Besides, there are 2% of the respondents earn the salary between RM3,500 to RM4,499 whereas the salary for 4% of the respondents are above RM4,500. Upto of 68.1% of participant are aware that the artificial intelligence devices are entering into the hospitality industry while there are 31.9% of the respondents do not aware that the artificial intelligence devices are entering the particular industry. Almost 70.6% of the respondents in this research has encountered with the artificial intelligence devices or robots in the hospitality industry whereas there are 29.4% of the respondents did not encounter with artificial intelligence devices or robots in the hospitality industry. there are 65.6% of the respondents have a great experience when interact with the artificial intelligence devices whereas there are 2.5% of the respondents have a bad experience during the process of interacting with the artificial intelligence devices or robots. Besides that, there are 3.8% of the respondents do not have the experience of interact with the artificial intelligence devices. There are 27.5% of the respondents in this research skip this question due to they do not come across with the artificial intelligence devices, and there are 1 respondent which is 0.6% indicated that the improvement is still needed for the artificial intelligence devices. Cronbach's Alpha reading for this study record a ranged from 0.814 to 0.889 which is also means that there is a well reliability for the 4 construct set up in this research. Multiple Regression Analysis indicated that 43% of the variations of consumer acceptance towards the application of artificial intelligence in the hospitality industry can be explained by the independent variables which are expected performance, perceived interactivity, and trust. Besides that, the independent variables of trust has the strongest impact on the willingness of consumers to accept the application of artificial intelligence in the hospitality industry since the standardized Beta is 0.393 at the significant level of 0.000.

Hypothesis Testing

Constructs	Significant Value	Results
Expected Performance	.000	Accepted
Perceived Interactivity	.402	Rejected
Trust	.000	Accepted

Source: Developed for this study

H_1 : There is a significant positive relationship between expected performance and consumer acceptance towards the application of artificial intelligence in the hospitality industry.

Based on the Table 1, the significant value of expected performance (0.000) is lower than p-value of 0.05. This has proved that the expected performance has a significant relationship on the willingness of consumers to accept the application of artificial intelligence in the hospitality industry. Therefore, H_1 is accepted.

H_2 : There is a significant positive relationship between perceived interactivity and consumer acceptance towards the application of artificial intelligence in the hospitality industry.

As shown in Table 1, the significant value of perceived interactivity is above the p-value of 0.05. This has indicated that there is no significant relationship between perceived interactivity and the willingness of consumers to accept the application of artificial intelligence in the hospitality industry; thus, H_2 is rejected.

H_3 : There is a significant positive relationship between trust and consumer acceptance towards the application of artificial intelligence in the hospitality industry.

Table 1 shows that the significant value of trust is 0.000, which is below the p-value of 0.05. This has proved that trust has a significant relationship on the willingness of consumer to accept the application of artificial intelligence in the hospitality industry; hence, H_3 is accepted. In this research, expected performance has the strongest positive relationship with the consumer acceptance towards the application of artificial intelligence in the hospitality industry which is 0.566 compare to other variables.

CONCLUSION AND DISCUSSION

Artificial intelligence devices are spreading and grow rapidly in the hospitality industry, and this has leads to the increase of the investment from the service companies for the development of artificial intelligence in order to increase their efficiency and reduce their cost. Therefore, this study is very useful for the management of the service providers in Malaysia who may premeditate to apply the artificial intelligence devices or robots for their business operations. This is due to this research is able to help the companies to have a better understanding on the willingness of Malaysian consumers to accept the adoption of artificial intelligence in the hospitality industry. Besides that, the companies from the particular industry are also able to avoid the waste of resources, and maintain or increase the profit. Other than that, it is useful for the companies to remain or increase their competitiveness and improve their service quality in order to maintain a good customer relationship. Based on the findings, expected performance and trust have significant positive relationship with the willingness of consumers to accept the application of artificial intelligence devices in hospitality industry. Therefore, the service providers should pay more attention on the performance towards the artificial intelligence devices in order to increase the level of trust of the consumers.

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BAFE059:
**LEVERAGING HUMAN RESOURCE MANAGEMENT PRACTICES TO
IMPROVE JOB SATISFACTION AMONG FEMALE EMPLOYEES
DURING THE COVID-19 PANDEMIC**

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Abstract

The Covid-19 pandemic has drastically affected economies, societies, organisations and employees globally. To reduce the rapid spread of the Covid-19 virus, movement restrictions and social distancing measures have been implemented and this forced the organisations to transform their conventional work practices to a new norm of working environment. Hence, both employees and human resource managers faced considerable challenges as employees need to adapt to the new work practices with the least supervision and communication, and the human resource managers must ensure that employees can perform effectively and efficiently during the pandemic. Female employees are essential in contributing to economic growth especially in developing countries like Malaysia. They are facing excessive challenges during the pandemic as the social-cultural norms expecting them not only to take charge of the household chores but also be the caregivers for their children and elderly whilst clocking in the normal working hours. These challenges adversely affected them; thus, they are seen to be less satisfied with their job when compared to their male counterparts. From March 2020 to March 2021, female labour force participation in Malaysia has declined by 0.3 percentage points. This study aims to investigate to what extent human resource management practices can improve the job satisfaction level of this vital group of employees. A survey questionnaire will be distributed to the respondents to gather data for this quantitative research. Structural equation modelling will be employed for data analysis. The implication of this study could provide guidance to the human resources managers to implement successful human resource practices to enhance job satisfaction among female employees during this ongoing global pandemic.

Keywords: human resource practices, job satisfaction, Covid-19, female employees

INTRODUCTION

The outbreak of the Coronavirus disease (Covid-19) has affected many people's lives and livelihoods around the world. Many businesses are facing existential risk and economic activities are affected as they need to comply with the social-distancing measures and work-from-home policies during the lockdown periods to curb the spread of the virus. The directive of restricted movement has lowered the organisations' productivity as the entities lack the capacity and means to allow production while employees are at home (Nyanga & Zirima, 2020). This is not only affecting the profits of the businesses but also the benefits and salaries of the employees.

Covid-19 pandemic has changed the routine work practices to the online or virtual environment and employees are required to work from home (WFH), to navigate conflicts with team members virtually for team projects, to supervise their subordinates from a greater distance than usual. Furthermore, the social distancing measures have obstructed the social connections among the employees which adversely affecting their mental health (Kniffin et al., 2021). Due to the pandemic, employees are forced to put in extra effort to adapt to the changes in the working environment and working practices.

It is indeed a great challenge for human resource managers to handle their workforce with the restrictive moments and social distancing measures in the workplace. Some of the challenges include ensuring all their employees stay safe and healthy in performing their tasks effectively and efficiently in the workplace; to reskill the workforce to perform online tasks; to ensure all employees remain motivated and satisfied to boost up their productivity (Sulaiman, Ahmed, & Shabbir, 2020).

Covid-19 has significantly affected the job satisfaction of employees as it reduces employees' salaries in some instances, affects job security, employment opportunities and increases employee stress (Nyanga & Chindanya, 2020). Job satisfaction is significant in enhancing employees' performance (Shaju & Subhashini, 2017), which in turn, assist the entities in achieving their objectives. Human resource managers today are expected to formulate and execute human resource policies and practices that can generate the employee competencies and behaviours that the entities require to achieve their strategic goals (Dessler, 2020). The employees' behaviour at work often depends on how they feel about their job.

During the challenging pandemic environment, many employees have shifted to work remotely with less direct supervision and less clarity of job expectation which may lead to higher work pressure and lower satisfaction among employees especially those who have set higher internal standards for themselves to produce more (Venkatesh, Ganster, Schuetz, & Sykes, 2021).

Covid-19 has affected the service-related occupations critically and it is more likely to bring greater occupational risk to female employees because they tend to be employed in positions that are more directly affected by the pandemic, for instance, in restaurants and hospitality sectors (Alon, Doepke, Olmstead-Rumsey, & Tertilt, 2020). Furthermore, the closure of childcare centres and schools have severely affected the working mothers who need to take care of their children and perhaps the elderly during their office hours. Working from home often result in employees having no clear boundaries between work and personal life, which affects work overload, which increase the level of stress (Liu & Lo, 2018) and anxiety and affects job satisfaction. This scenario is particularly applicable to the female employees as they need to play multirole during the pandemic period as they work from home. However, female employees do play an important role in contributing towards national economic development especially in the manufacturing, service, health, education and hospitality sectors (S. N. Kamaruddin, Omar, Muda, Saputra, & Ismail, 2017).

Hence, human resource managers play a very essential strategic role, through their dedicated practices, in reinforcing the organisational and personal relationship, engaging, and motivating the workforce towards a positive behaviour to enhance job satisfaction and work productivity to achieve strategic competitive advantages (Manuti et al., 2020).

Research Problem

A recent study reveals that during the pandemic, female employees are less productive and less satisfied with the job than men (Feng & Savani, 2020). The dissatisfaction and job burnout may cause the employees to have the intention to leave the employment (Lu & Gursoy, 2016). In 2020, there were unprecedented global employment losses of 114 million jobs compared to 2019 and the employment losses were higher for female employees (5.0 per cent) than for male employees (ILO, 2021).

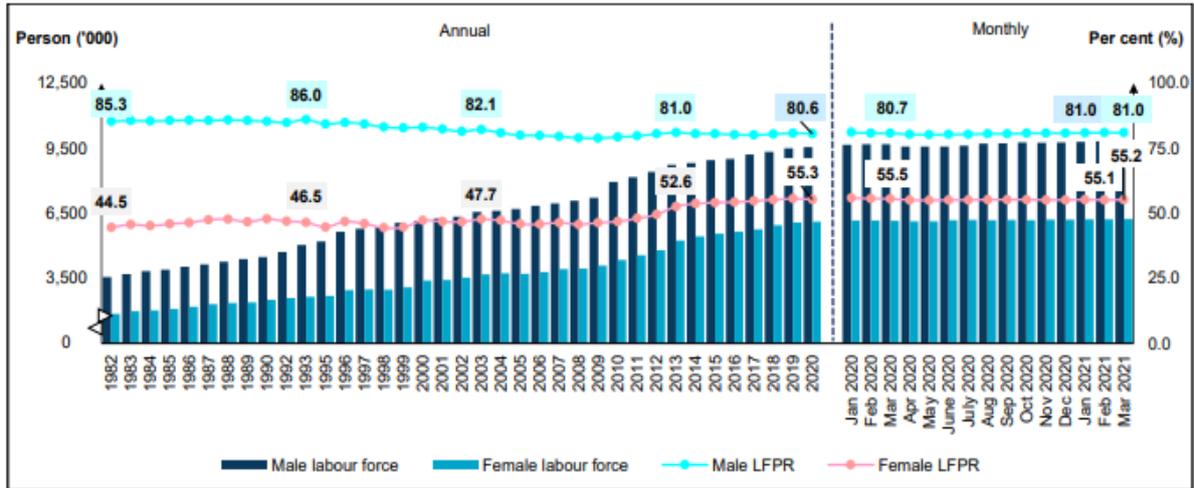
Female employees are facing new challenges during the Covid-19 pandemic when working from home. The social-cultural norms and beliefs expect that women are responsible for household chores and are caregivers, thus, most of the additional housework in terms of additional grocery shopping, cooking and cleaning during the pandemic are borne by women. This unequal distribution of house chores may lead to their inability to contribute effectively to their employed work (Uddin, 2021). The closure of schools and unavailable of day care centres have made it even more difficult for female employees, especially working mothers, to juggle between managing the children's online studies, taking care of the children during office hours, and fulfilling the organisational expectations.

Relating to the on-demand work environment, about one-third (29%) of the female employees who feel that they always need to be available and if they are unable to do so may burden their team members who can work off-office hours and this may affect their career progression unfavourably

(Deloitte, 2020). Furthermore, female employees are more affected by the loss of income and unemployment due to economic depression caused by this pandemic.

According to the Department of Statistics Malaysia (2021), the total number of the labour force in March 2021 was 16.08 million persons and the number of people employed was 15.33 million; the labour force participation rate for males was higher than that of the female (81.0 per cent as compared to 55.2 per cent) and for year-on-year comparison, the male labour force participation rate has increased by 0.3 percentage points whereas there was a decline of 0.3 percentage points in female labour force participation (Figure 1). This may imply that female employees are more affected by the loss of income and unemployment due to the pandemic.

Figure 1: Labour force and LFPR by sex, 1982 - 2020 and January 2020 – March 2021



Source: Department of Statistics Malaysia, Labour Force, Malaysia, 2021

Previous studies conducted on female employees in Malaysia emphasised motivation, time management, and organizational climate in affecting job performance (Kamaruddin et al., 2017; Kamaruddin et al., 2021). Less attention has been focused on using human resource management practices to enhance job satisfaction for this vital group of employees in Malaysia.

Research objectives

The purpose of this study is to examine to what extent human resource management (HRM) practices can improve job satisfaction among female employees in Malaysia during the Covid-19 pandemic work environment. The objectives of this study are:

1. To examine whether compensation and reward management has a significant effect on job satisfaction among female employees during the Covid-19 pandemic in Malaysia
2. To investigate whether safety and health management has a significant effect on job satisfaction among female employees during the Covid-19 pandemic in Malaysia
3. To determine whether the training and development programme has a significant effect on job satisfaction among female employees during the Covid-19 pandemic in Malaysia

LITERATURE REVIEW

Job Satisfaction

Job satisfaction is the essential feeling of employees toward their job. The definition of job satisfaction has been developed since 1931 by Fisher and Hanna from a single perspective of affection, (i.e., the positive affective evaluation on the job) to multiple perspectives of affection and cognition which include the evaluation of working conditions, opportunities and output (Zhu, 2013).

Various definitions of job satisfaction have been arising during the years, for instance, job satisfaction can be referred to as the attitude and feelings an employee has regarding his or her work (S. M. Ahmed, Tolera, & Angamo, 2013); it is also referred to as the positive affectivity such as the high enthusiasm and enjoyable involvement that the employees have towards their work or the negative affectivity which is indicated by distress, edginess and un-enjoyable involvement concerning their job (Said & El-Shafei, 2021). According to Tomažević, Seljak, & Aristovnik (2014), employees' satisfaction covers the perceptions beyond the job itself and it includes other aspects such as autonomy, job security, the reward and promotion system, the possibilities of professional development, work-life balance and attitude of the public, etc.

Job satisfaction can be affected broadly by environmental factors or individual factors. The environmental factors include those factors relating to the industrial environment, organisational environment, working environment, political environment, and economic environment; whereas, the individual factors include the demographical characteristics, the capabilities and the perceptions of the individuals (Zhu, 2013). According to Hanaysha & Tahir (2016), firms with a good organisational environment that enable their employees to demonstrate empowerment practices and to provide training to enhance their employees' skills and competency can increase the job satisfaction of their employees. Likewise, organisations that are prepared to increase the motivation given to their employees have a positive impact on the job satisfaction level of their employees (Rosalia, Mintarti, & Heksarini, 2020). Other studies suggest the fostering positive employee relations can stimulate job satisfaction (Bulińska-Stangrecka & Bagieńska, 2021) and the improvement in occupational health and safety issues in the organisation can also bring positive effects on job satisfaction (Ahmad & Sattar, 2017). Jarupathirun & De Gennaro (2018) show that employees' demographical features and their working experience can affect employees' level of job satisfaction and they assert that older age employees and employees with more years at an organisation tend to have a higher level of satisfaction towards their job.

Employees' job satisfaction is crucial for the growth and existence of an organisation, especially during the covid-19 pandemic. Employees who are satisfied with their job when their needs are fulfilled tend to perform better (Mira, Choong, & Thim, 2019) and they tend to be more loyal to the organisations and these will reduce the staff turnover rate (A. Ahmed, Zaman, & Khattak, 2017). Job satisfaction can also enhance the employees' quality of work-life and minimise absenteeism when organisations implement effective safety policies and a conducive work environment (Gopinath, 2016b).

Human Resource Management practices

Human resource management (HRM) is a process of establishing strategies, policies and practices that affect all aspects of human resources to achieve the desired organisational objectives (Armstrong & Taylor, 2020). The practice in HRM involves the activities related to employing and managing people in the organisations such as resourcing, human capital and knowledge management, organisational development, training and development, performance management, reward management, the well-being of employees and employees' relations management (Armstrong, 2010). Occupational health and safety practice is also incorporated into human resource management as part of the organisational responsibilities to improve the working conditions for their employees (López-Fernández & Pasamar, 2019).

HRM practices are used by organisations to facilitate innovations, to build up good relationships between employers and employees, to motivate and retain employees to operate effectively for the survival of the organisations (Tan & Nasurdin, 2011). Practices such as providing employees with training, better rewards and bonus appraisal and empowering them to perform, can enhance their satisfaction with their job and which in turn, increase their job performance (Rodjam, Thanasrisuebwong, Suphuan, & Charoenboon, 2020). Gopinath, (2016b) confirm that HRM practice of health and safety management can improve the employees' satisfaction and help employees to improve their work-life quality, which in turn, will reduce absenteeism.

Covid-19 has severely affected employees, their work practice, and the workplace globally. This may influence their feelings towards their job as they fear the lack of the competencies required

in the new working pattern; the uncertainty of the fair compensation and rewards as well as the fear of contracting the disease and transmitting it to their family members. Thus, this research focuses on three HRM practices, namely, compensation and reward management, safety and health management and training and development that could influence the job satisfaction of female employees during this challenging period.

Compensation and reward management

Compensation is the reward an organisation gives to the employees in exchange for their work or services contribution to the organisation (Henderson, 2006). Rewards to employees can either be financial rewards like wages and salaries rise, bonuses and allowances, or non-financial rewards such as appreciation and recognition, promotions and career advancement (Malik, Butt, & Choi, 2015). A well-established compensation and reward management can be the best predictor of job satisfaction, for instance, if the employees are compensated by their productivity and performance and rewarded with promotion in recognition of their contribution, would, in turn, lead to higher employees' job satisfaction and better performance (Gopinath, 2016a). Employees with repetitive nature of work, lesser responsibilities and creativity tend to have higher satisfaction towards their job when there is an increase in the financial rewards and once they have contented with their pay, they may expect more non-financial rewards to enhance their job satisfaction (Bustamam, Teng, & Abdullah, 2014). Similarly, Rosalia, Mintarti, & Heksarini (2020) assert that compensation such as wages or salaries, professional allowances, temporary benefits, incentives, health benefits, pension funds and vacation allowance, given to employees are not attractive enough to improve their job satisfaction and work productivity; management requires to reward the employees according to their performance to improve their job satisfaction and performance.

Effective rewards management can be used as a strategic tool to foster employees' satisfaction and to encourage them to work more productively to achieve organisational goals (Tănăsescu & Leon, 2019). During the pandemic condition, remuneration plays an important role in improving the employees' job performance as many employees are very concerned about their remuneration and benefits which can directly affect their living, thus, fair and sufficient remuneration can improve job performance (Sembiring, Fatihudin, Mochklas, & Holisin, 2020). Wolor, Susita, & Martono (2020) suggest that organisations should reward employees who dare to work in shifts during pandemics to motivate them to perform better. Likewise, Kurnia, Azizah, & Suhendra (2020) indicate that financial compensation in terms of overtime compensation, food allowance, additional quota to support facilities given to employees who are working from home beyond the normal working hours during the pandemic can improve their job performance and job satisfaction.

Safety and health management

Safety and health management is one of the essential practices in HRM as employees health and safety concerns not only can affect costs and profits of the organisation (Dessler, 2020), they can also influence the satisfaction level and work productivity of the employees (Perera, 2019). Employees suffering from health issues tend to have an adverse perception of their ability towards their work and this can reduce their gratification derived from their job and subsequently affecting their work productivity (Berardelli et al., 2019). According to Tarcan, Hikmet, Schooley, Top, & Tarcan (2017), an increase in employees' burnout level in terms of exhaustion, weariness and low emotional energy towards their work can negatively affect their job satisfaction. Hence, well-established safety and health programs can assist employees to understand the means to maintain their physical and mental health and to minimise their risks in exposing them to various work-related hazards and crises, which in turn, can boost up their job satisfaction (Ghoudarzi et al., 2019).

Covid-19 is a workplace hazard (Carlsten et al., 2021) and employees who are required to report to work at their workplace during the pandemic are exposed to a high risk of contracting this disease. For employees who are confirmed or suspected of contracting the virus may fear the consequences of infection, feel lonely and bored during quarantine which may adversely affect their mental health (Xiang et al., 2020). Hence, a good safety and health plan and clear preventive measures, for instance, to provide masks, protection materials and sanitisers in the workplace can help the employees in reducing their stress level and build their trust in the organisation (Hamouche, 2020). Furthermore, organisations can establish enforceable safety standards in the workplace to

mitigate the risk of transmission and communicate transparently the workplace transmission rate to foster employees' trust (Ramos et al., 2021).

Training and development

Training is essential in human resource management as it can improve employees' knowledge, skills or attitudes to perform their job successfully (Vasudevan, 2014). Training can assist the employees in improving their skills and competencies to overcome any shortcomings so that they can perform effectively and efficiently to achieve organisational objectives (Hanaysha & Tahir, 2016). Providing training to employees and implementing career development programs in the organisations can reduce the employee's dissatisfaction and minimise their likelihood to leave the organisations (Alolayyan, Alyahya, & Omari, 2021).

According to Elnaga & Imran (2013), it is important for an organisation to continually provide training and development to close the gap between staff actual performance and expectation. Hence it is a task of human resources management to plan appropriate training consistently to allow the staff to acquire a new way of doing their routine work and be productive. Appropriate training to the staff will enable to company to move closer to their organizational goals as well as development for human capital in terms of behaviour and personal knowledge. It is a broader concept and long-term mission for an organisation to grow holistically (Nassazi, 2013).

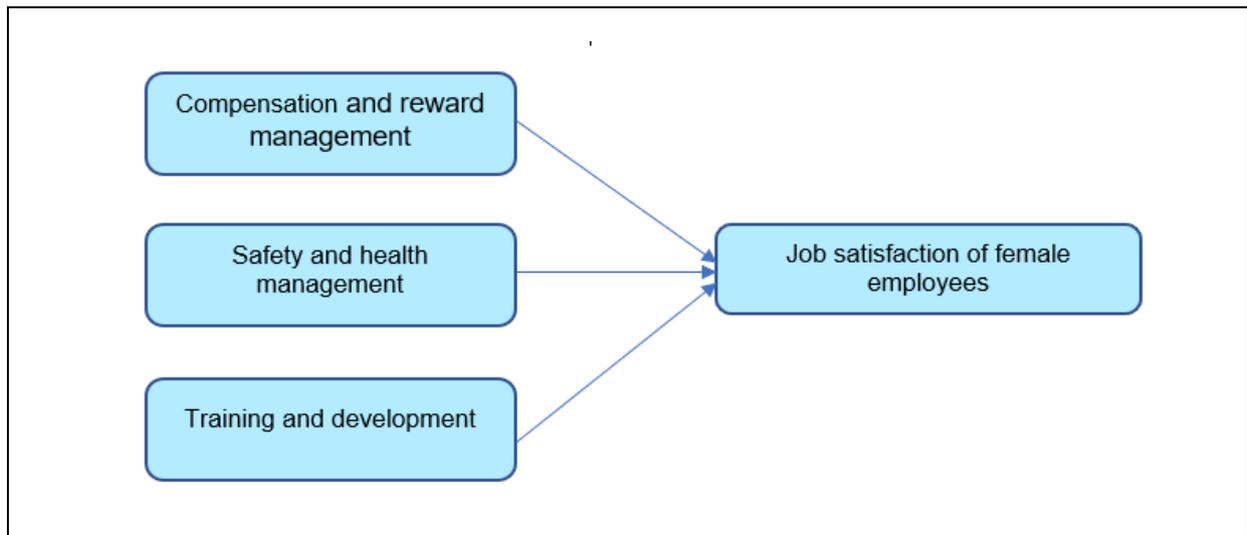
According to Asim (2013), training can reduce the frustration at the workplace due to being unable to perform the task correctly, minimise the error, as well as a waste of resources, derive from lack of skill and latest technology. When the employees can achieve what they are aiming for, it will become positive energy to motivate them to perform much better. Hence it can reduce staff turnover rate and recruitment costs. Providing proper training and development to the employee will directly create better job satisfaction as they feel company value their contribution and they able to gain additional skill when working in the company.

The virtual working environment during the pandemic has forced the employee to learn new skills and place more reliance on information technology. Some employees even developed stress as they never worked long hours in a virtual environment with minimum or no guidance (Feng & Savani, 2020). The employees need to quickly adapt to the new norm - from getting the necessary hardware, learn the fundamental information technology skills and transforming to a paperless and contactless environment momentarily. Consequently, the support in terms of training and development to employees could assist employees to shift smoothly to the new norm and thus improve job satisfaction.

CONCEPTUAL FRAMEWORK

A conceptual model is constructed based on a review of past empirical studies. In this study, the job satisfaction of female employees is the dependent variable (DV). The variables that are expected to influence the job satisfaction level are compensation and reward management, safety and health management, and training and development (i.e. the independent variables). A conceptual framework is constructed for this study and is depicted in Figure 2 below.

Figure 2: Proposed Conceptual Framework



RESEARCH METHODOLOGY

This study employs the quantitative approach to examine the important phenomena of the human resource management practices that could impact job satisfaction among female employees in Malaysia, especially during the Covid-19 pandemic work environment. The variables within the human resource management practices to be investigated in this study are compensation and reward management, safety and health management and training and development.

A survey questionnaire will be used in this study to reach out to the respondents. The electronic questionnaire will be employed where respondents could either scan the QR code or the link provided by the researchers. Given the current pandemic work environment, this method to solicit responses is efficient in terms of time and cost. To ensure a higher response rate from respondents, convenience sampling will be applied. A brief explanation will be attached to the questionnaire to explain the purpose of this academic study and that all details collected will be kept anonymous.

The primary data collected will be analysed by utilising the structural equation modeling (SEM) to investigate the relationship between these variables on job satisfaction among female employees during the Covid-19 pandemic in Malaysia.

CONCLUSION

In light of the Covid-19 pandemic, many firms are facing the risks of survival and they are required to adopt rotational or remote working practices to continue their businesses. These new norms of work practices isolate the employees and limit their social bond with their colleagues. This could contribute to the depression or deterioration of the employees' mental health. The unprecedented pandemic has affected not only the financial resources in the organisation and the organisational performance, but it also affects the human capital in the organisation. Female employees are facing greater challenges in this changing working environment as they are required to have the competencies in using the technologies for remote working, coping with the multiple tasks of cooking, cleaning, and caregiving in addition to achieving the organisational expectations during the lockdowns and working from home. Their work productivity and level of job satisfaction are seen to be lesser as compared to their male counterparts. This may be one of the reasons for the decline of 0.3 percentage points in female labour force participation from March 2020 to March 2021. To overcome the job dissatisfaction of female employees, human resource managers may require relooking at their management practices to enhance employees' satisfaction to achieve the organisational goals and competitive advantage. Thus, this study aims at examining the extent of HRM practices in improving job satisfaction among female employees in Malaysia during the Covid-19 pandemic work environment.

The three HRM practices, namely, compensation and reward management, safety and health management, and training and development are believed to have a direct link to the income, competencies and safety and health for female employees and thus, have an impact on the job satisfaction level during the pandemic. The study utilises the quantitative approach and the survey questionnaire to collect data and employs SEM to analyse the data collected.

The findings of this study have significant implications for human resource management in understanding the factors that can improve female employees' job satisfaction during the global pandemic. In addition, organisations and policymakers could use the outcomes of this study to build a strong relationship with female employees and enhance their job satisfaction and work productivity to boost female labour participation for economic development in Malaysia.

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BAFE061:
**A STUDY OF READINESS FACTORS OF MILLENNIALS TOWARD
EMERGING SMART TECHNOLOGIES IN MALAYSIA: MOVING
TOWARD SOCIETY 5.0**

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Abstract

Society 5.0 (super-smart society) envision a profound change of social system concentrating on balancing the technology advancement and resolution of social problems that enable synergy between human and machine. The advanced smart technology developed from Industry 4.0, including the Internet of Things (IoT), artificial intelligence (AI), blockchain technology, robotics and big data analytics (BDA) that bring improvement in human living by removing the hierarchy of region, age, gender and linguistic and enable tailored products and services based on diverse personal and potential needs. However, the transition of society would not be without difficulties, a huge amount of information from sensors are accumulated in cyberspace that certainly brings the concern on how it affecting the individual living. This research applied a quantitative approach to study the overall perspective of millennials toward smart technology in Malaysia by examining the factors that motivate and inhibit them toward the penetration of smart technologies in their working and daily life. This research examines readiness based on Parasuraman's Technology Readiness Index (TRI) model by using multiple item-scale to assess the psychometric state of these targeted populations. Subsequently, Smart PLS 3 is employed for data analysis of which is a prominent software for Partial Least Squares Structural Equation Model (PLS-SEM). This research concludes with theoretical, practical implications and suggestions of future research direction which contributes to technological readiness study in Malaysia and given further understanding for the development of Society 5.0.

Keywords: Society 5.0, Super-Smart Society, Technologies Readiness, Social Adoption and Acceptance

BAFE063:
CAREER CHOICE FACTORS OF YOUNG MALAYSIAN ADULTS

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Abstract

The main objective of this research was to study the relationships of salary, family influence, peer influence, and interest toward career choices among young adults in Malaysia. Career choice is essential for young adults to consider and plan before graduating or being involved in any industry by knowing their strengths, weaknesses, and interests. Wrong career choices could also be due to lacking self-awareness of career needs, expectations, direction, and prospects for their long-term development. This research data was collected by using survey questionnaires with a closed-ended question and five-point Likert scale. There are 213 sets of questionnaires received from the young adults studying or working in the Klang Valley. This research use PLS analysis to test the hypotheses of this study. The results revealed that family influence, interest, and salary positively affect career choice; On the other hand, the survey results indicate that peer influence has no significant effect on career choice. The research results are beneficial for the companies, young adults, and government to understand the significant factors influencing the career choices among young adults. This study is beneficial for companies and employers on how to recruit and retain talented employees. On the other hand, the government could provide counseling programs and career guidance for the career choices among young adults to better the training and development programme in Malaysia.

Keywords: Career choice, Young adults, and Employment

INTRODUCTION

It is usual for young adults to face career choices for their future betterment and career prospects (Mberia & Midigo, 2018). Firstly, most of them do not understand their strengths, weaknesses and interests. Many choose the wrong career without realizing their interest, requirements for their future advancement, lack of experience or career counseling, and advice or influence by friends or parents (Njeri, 2013). Adolescence is a period when young minds are susceptible to the influence by others. Thus, the role of parents may be crucial to shape and influence their children's career choice (Hashim & Embong, 2015). Parental expectations may pressure young adults to choose the wrong career path desired by their parents. In some cases, parents may push their children towards a career in a family-owned business, where the youngster will take over the firm in future.

Career planning is a lifelong process for a person to manage his own work life. Good career planning involves knowledge about the work environment, what is going on in the real world, and personal details. The working world changes continuously, so young adults should learn and adapt to this unpredictable demands of the job market to avoid being sidestepped by society. Career planning can help young adults to be prepared to join the workforce, manage and anticipate changes and trends in the workplace for career development ('Career development,' 2012).

An employee who underperforms or joins a wrong profession in the career path will impact an organization, waste resources, and reduce the firm's competitiveness in the industry (Ahmed, Sharif & Ahmad, 2017). Trading Economic (2018) reported unemployment rate in Malaysia decreased from 3.3%

in 2014 to 2.7% in 2015 and increased to 3.5% at the start of 2016. This rate remained constant hovering around 3.4% to 3.5% until the 2017-year end. Therefore, unemployment was higher in 2017 than in 2015. One of the significant factors for this high unemployment rate is young adults who did not plan appropriately for their careers before entering the job market. Career decision planning could have helped decrease the unemployment rate as young adults who have a better idea of what they are trying to pursue will seek a suitable career path and reduce turnover in organizations. High turnover rates could negatively impact a company by damaging its reputation and increases the costs for retention and training programme for the new employees (Sinniah & Kamil, 2017). Furthermore, unemployment could hamper the nation's economic growth since young adults are the primary human resource to support and sustain the country's future competition with other countries.

The career choice of young adults is often affected by different factors. Besides influences from family and friends, salary is the most important criterion for some individuals that attract them to a profession. Research indicates that perceptions of future benefits coming from a career such as higher income are among the most crucial factors influencing a person in South Africa (Ahmed, Sharif & Ahmad, 2017). However, some other people have a different opinion where they prioritize their career based on interest. Njeri (2013) noted some cases in which people enroll in a particular field but discover that they are not interested in that area after some time. The reason, of course, may be due to other factors that had influenced the young adult, like family or peers.

Some research conducted in Malaysia had only focused on students coming from a single institution (Muhamad, Salleh & Nordin, 2016), and hence unable to represent the broader perspective of other young adults. Moreover, recent studies on this area still lack and are primarily done in other countries. Therefore, the past studies are unable to reflect the current situation in the Malaysian context. This study aims to investigate the opinion of other young adults in Malaysia. It identifies the critical factors such as salary, family influence, peer influence, and interest that attract young adults into a specific industry. The results would be helpful to guide young adults in making the right career choice.

LITERATURE REVIEW

Career Choices

Career choice is the process of managing specific challenges about job search and employment transition (Ling, 2008). Career choices can also refer to the broad opportunities for a lifelong vocation (Olamide & Olawaiye, 2013). For young adults, career choice is an essential factor that helps determine a suitable job in the future. A suitable career can also improve a person's socioeconomic status, lifestyle and relationship with others.

Some studies define career as a set of sequential attitudes and experiences about work that an individual acquires throughout one's work life. In addition, choices refer to selecting or separating a preferred option from all the available alternatives (Abbasi & Sarwat, 2014). Career choice is developing into a significant area of research that is gaining interest from researchers.

Salary

Salary is the amount paid by an employer to an employee for the worker's services, for example remunerations based on hourly, daily, weekly, monthly, or piece meal work (Moy & Lee, 2002). Additionally, remuneration paid to an employee is referred to the compensation or fee made by an organizational for the job done by their staff (Heathfield, 2017). Nowadays, most young adults pursue and demand unrealistically high salary without checking on the company's background before accepting a job. There is also a tendency for young adults to switch their jobs when a high salary has been offered to them, regardless of the profession or industry they will join.

According to Price (2011), research done in the nursing industry is supposed to help people, but the attractive salary persuaded it. It is the main attractive factor for an individual. Salary is the critical element used in human resource management to retain talented employees. The study by Muhamad, Salleh and Nordin (2016) found that among all factors investigated, the salary was the main factor of choosing a career for young adults. Young adults are concerned about getting a protected salary and definite employment based on the current economic conditions.

In contrast, some other studies demonstrated salary to be not significant in affecting the career choice of young adults. For example, research by Mirela and Ion (2015) showed that only 1.68% of the study respondents indicated that income was the key reason for choosing a career in education. For them, motivation and self-development are the critical consideration that encourages their choice of career. Another study by Eiland, Flowers, Anurkar, O'Brocta, Prabhu and Medon (2010) found that salary was not a significant factor that motivated graduate students to select the pharmacy profession as their career choice. Therefore, the hypothesis is proposed as below:

H1: Salary is related to the career choice of young adults.

Family Influence

Family influence is the guidance and information provided by member(s) of the family, either directly or indirectly, which influences the career choice of young people (Kniveton, 2004). In Kaiz and Akhlaq (2017) study, family members, such as parents, played primary influencing roles on their young adults on career choices. Parents provide guidance, advice, and counseling throughout the whole life of their children. Fresh graduates may face the dilemma to choose a career due to a lack of experience with society. At the early stages of a young person's life, their career perceptions are prone to be influenced by their family members (Adams, 2014). Parents may give personal advice and information on different occupations and help clarify specific necessary competencies, challenges and risks associated with some types of careers. Sometimes, parents may also put emotional pressure on the type of career chosen by their children based on what they perceive to be suitable for the youngster.

Addullah and Asma (2015) study showed that 70% of graduated students considering accepting a new job tend to seek their parents' opinions before accepting a job. The reason is probably due to the young adult's preference to consult parental approval and support for accepting the offer. The young generation in rural areas usually will see advice and conform to their parental wish; this could be due to young adults being entrepreneurial and taking over the businesses if their family currently was operating a business. On the other hand, parents may discourage their children from becoming entrepreneurs if the parents themselves have undergone painful circumstances in operating their businesses (Mtemeri, 2017).

However, some researchers found that family has the most negligible influence compared to other factors like peer influence and role models. For example, the study by Njeri (2013) showed that the average mean score of family influence on the career choice of young people was only 1.86, which was substantially lower than the influence of role models (3.1), peer influence (2.3), and gender factors (2.3) Thus, it is suggested that:

H2: Family influence is related to career choice of young adults.

Peer Influence

Peer influence can be considered the influence exerted by friends that convinces an individual to change his beliefs, values and behavior to conform to the group norms (Wanyama, 2012). Under the influence of peers, a person will be motivated to act in a way accepted and valued by that peer group ('Peer Pressure and Influence,' 2018). Njeri (2013) noted that peer influence could significantly impact the choice of career by young people. A young adult can learn from peers by collecting their advice when planning for one's future career and reaching a leadership position in the chosen area of the individual's career. Peers having varied interests and backgrounds can help broaden the mindsets of young adults. As a result, it could lead a young person to think in different ways and understand the world from a different perspective.

Some young adults may make wrong decisions about their career choice due to bad experiences, peer pressure, ignorance of family advice, or perceived prestige of specific jobs (Shumba & Naong, 2012). They may base their decisions on information obtained from peers without verification causing them to pursue the type of career that is not suitable. In contrast, Njeri (2013) observed that although young adults tend to be easily influenced by their peers, they are mature enough not to be negatively affected by peers lacking in the interest of discipline.

Research shows that parental influence is more incredible than peer influence regarding the young adults' career choices (Hashim & Embong, 2015). The authors argued that youngsters are more likely to listen to their parents' instructions and advice than their peers, even though peers could provide valuable advice to them. However, it is less impactful and less meaningful compared to what parents provide. The view is further supported by Kimiti and Maria (2012) who found that the career chosen by young adults were not significantly affected by their peers. Career guidance offered by teachers and parents is more likely to influence career choice among young adults. Nevertheless, it is proposed that:

H3: Peer influence is related to career choice of young adults.

Interest

According to Omari (2014), "interest" draws attention or triggers a person's curiosity. Interest can also be something one cares about that is essential and invokes cheerful feelings in a person (Harackiewicz & Hulleman, 2010). An individual may pick up interest from a young age from their parents, learning from school, influence by friends, or their own daily life experience. When an individual engages in different activities, the personal reactions and feedback received about one's performance may affect the person's perceptions and shape his interests. As a result, it could influence the young adult's career choice.

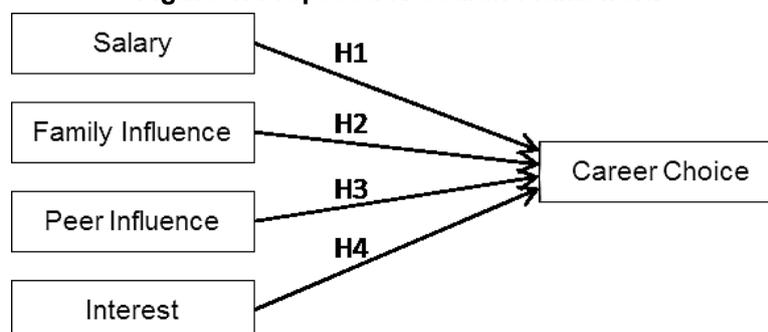
Research by Mberia and Midogo (2018) shows that interest plays a significant role in the career choice decision of young adults. Interest indicates the selection of a future career, and the young adults' abilities will show up in the career they choose subsequently. People who succeed in their chosen career field are because the occupation is suited to their interests and abilities, and most of these were formed during their middle school years (Adams, 2014). Another study by Afidatul Asma (2015) also found a positive relationship between interest and career choice. Their study showed that 80% of the respondents desired an enjoyable and fulfilling job, and there is satisfaction from achieving targets at work. As most people work 8 hours every day, from 9 am to 5 pm, they may feel bored dealing with the daily routine tasks in the same environment. Thus, interest and passion for the job may affect the future career chosen by young adults.

Other studies demonstrated that most young people choose their careers without relating them to interest (Olayinka, 2005). It has been argued that young adults treat their future career as a survival tool on which they rely on the income from their jobs for the sustenance of livelihood. Thus, the salary and benefits offered by the company are the main factors that affect the career chosen by young people instead of personal interest. This argument is supported by Edwards and Quinter (2011), who noticed that learning experience and advancement availability are more important than personal interest. The findings indicate that interest is of lesser importance in career choice decisions among young adults. Based on the discussions above, it is suggested that:

H4: Interest is related to career choice of young adults.

CONCEPTUAL FRAMEWORK

Figure 1: Proposed Research Framework



RESEARCH METHODOLOGY

Research Design and Procedure

Quantitative data was collected using survey English questionnaires with close-ended questions in a five-point Likert scale. The questionnaire is divided into two parts. Section A consists of 6 questions relating to the general information of the respondents on their demographic details. Section B contains 25 questions to determine the effect of each factor on the career choice of young adults in Klang Valley. Respondents were requested to select the best answer based on their opinion, from 1 (Strongly Disagree) to 5 (Strongly Agree).

Two hundred and twenty sets (220) of questionnaires were distributed online to working young adults residing in Klang Valley. The target populations are young adults between the age range of 18 to 35 years old. This population is chosen because they are starting to develop a career path. They also can make their own career choices. Therefore, their response is crucial to determine the factors that will influence career choices of young adults. In total, only 213 responses were found to be valid and retained for analysis.

DATA ANALYSIS

Descriptive data analysis was conducted through the use of SPSS version 27. Then, SmartPLS 3 (Ringle, Wende & Becker, 2015) was used to validate the measurements and test the hypotheses. As suggested by (Chin, 2010), the two-step procedure was followed to assess the research model. Firstly, the measurement model is evaluated for reliability, followed by convergent and discriminant validity. Secondly, the structural model is examined for the strength and direction of the path relationship.

Descriptive Analysis

Demographic Profile

In terms of gender, the respondents comprise 48% male and 51.2% female. As for age, 49.8% of the respondents are between 18 to 23 years old, and 18.8% are between 30 to 35 years old. For ethnicity, most of the respondents are Chinese (63.8%), followed by Malay (17.4%), and others. Regarding the respondents' income level, 42.7% fall into the income level group of less than RM2,000 per month whereas only 1.4% earn more than RM10,000 per month. For highest level of education attained, 47.9% of the respondents held a degree while 4.2% had STPM or foundation level. Finally, 39% of the respondents worked in the service industry and 2.3% were involved in the chemical, finance, or construction industry.

Inferential Analysis

Measurement Model Evaluation

Table 1 shows composite reliability values ranging from 0.786 to 0.932. As the values are more than the minimum threshold of 0.70, they indicate high internal consistency reliability within each construct (Nunnally, 1978).

Next, convergent and discriminant validity of the research model were evaluated. The assessment of Convergent validity using average variance extracted (AVE) values. As per table 1, all AVE scores are above the lower limit of 0.50, which supports the convergent validity of the items in each construct (Fornell & Larcker, 1981).

After this step, it is followed by an assessment of discriminant validity between the constructs whereby the AVE square root of a construct must be more than its correlation with other constructs (Fornell & Larcker, 1981). From table 2, the off-diagonal values are less than the AVE square root along the diagonal, thus establishing adequate discriminant validity between each construct in the model.

To evaluate the structural model, we checked for issues with collinearity and model relationships. In order to assess the collinearity between constructs, the variance inflation factor (VIF) was used. For this research, the inner VIF range from 1.100 to 3.094. Since all inner VIF values fall below the threshold of 5, they indicate no major collinearity issues. The path model presented in Figure 2 and the related results from the hypotheses testing are in Table 3.

Table 3: Hypotheses Test

The findings from table 3 show that family has a significant influence on the career choice of young adults. The significance value of family influence is 0.048 which is less than the p-value of 0.05. Therefore, H1 is supported. The following result also shows that there is a significant relationship between interest and career choice. The significance value of 0.004 is much lesser than 0.05. Thus, it provides support for H2.

In contrast, the statistical results for the relationship between peer influence and career choice of young adults are not significant. The p value of 0.056 is higher than 0.05. Hence H3 is not supported. Nevertheless, the last results indicate that salary is significantly related to career choice of young adults. Since $p = 0.000$, which is smaller than 0.05, the results support H4.

Research Design and Procedure

Quantitative data was collected using survey English questionnaires with close-ended questions in a five-point Likert scale. The questionnaire is divided into two parts. Section A consists of 6 questions relating to the general information of the respondents on their demographic details. Section B contains 25 questions to determine the effect of each factor on the career choice of young adults in Klang Valley. Respondents were requested to select the best answer based on their opinion, from 1 (Strongly Disagree) to 5 (Strongly Agree).

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Inferential Analysis

Measurement Model Evaluation

Table 1 shows composite reliability values ranging from 0.786 to 0.932. As the values are more than the minimum threshold of 0.70, they indicate high internal consistency reliability within each construct (Nunnally, 1978).

Table 1: Construct reliability and validity

	Composite Reliability	AVE
Career choice	0.825	0.612
Family Influence	0.894	0.738
Interest	0.786	0.649
Peer influence	0.932	0.775
Salary	0.839	0.723

Next, convergent and discriminant validity of the research model were evaluated. The assessment of Convergent validity using average variance extracted (AVE) values. As per table 1, all AVE scores are above the lower limit of 0.50, which supports the convergent validity of the items in each construct (Fornell & Larcker, 1981).

After this step, it is followed by an assessment of discriminant validity between the constructs whereby the AVE square root of a construct must be more than its correlation with other constructs (Fornell & Larcker, 1981). From table 2, the off-diagonal values are less than the AVE square root along the diagonal, thus establishing adequate discriminant validity between each construct in the model.

Table 2: Discriminant Validity

	Career choice	Family Influence	Interest	Peer influence	Salary
Career choice	0.783				
Family Influence	-0.184	0.859			
Interest	0.188	-0.001	0.805		
Peer influence	-0.164	0.351	0.107	0.881	
Salary	0.279	0.035	-0.015	0.007	0.850

Structural model evaluation

To evaluate the structural model, we checked for issues with collinearity and model relationships. In order to assess the collinearity between constructs, the variance inflation factor (VIF) was used. For this research, the inner VIF range from 1.100 to 3.094. Since all inner VIF values fall below the threshold of 5, they indicate no major collinearity issues.

The path model presented in Figure 2 and the related results from the hypotheses testing are in Table 3.

RESULTS OF THE RESEARCH MODEL

Figure 2: Path Model Results

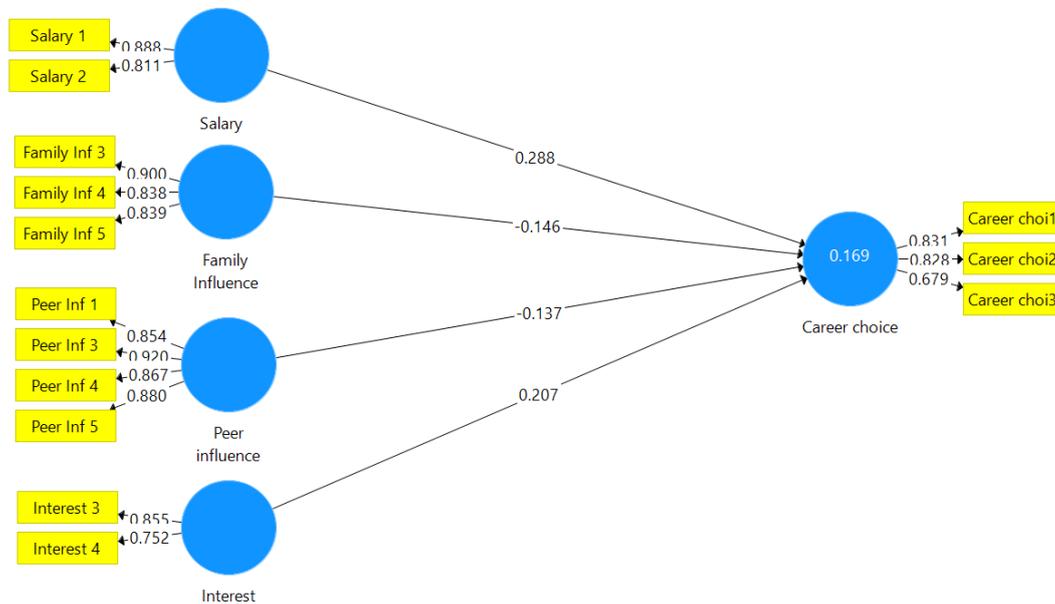


Table 3: Hypotheses Test

	Coefficient	Standard Error	T value	P Values	Supported
Family Influence -> Career choice	-0.146	0.073	1.981	0.048	Yes
Interest -> Career choice	0.207	0.071	2.902	0.004	Yes
Peer influence -> Career choice	-0.137	0.072	1.912	0.056	No
Salary -> Career choice	0.288	0.078	3.690	0.000	Yes

The findings from table 3 show that family has a significant influence on the career choice of young adults. The significance value of family influence is 0.048 which is less than the p-value of 0.05. Therefore, H1 is supported. The following result also shows that there is a significant relationship between interest and career choice. The significance value of 0.004 is much lesser than 0.05. Thus, it provides support for H2. In contrast, the statistical results for the relationship between peer influence and career choice of young adults are not significant. The p value of 0.056 is higher than 0.05. Hence H3 is not supported. Nevertheless, the last results indicate that salary is significantly related to career choice of young adults. Since $p = 0.000$, which is smaller than 0.05, the results support H4.

CONCLUSION AND DISCUSSION

The study was done by Demagalhaes, Wilde, and Fitzgerald (2011) proved that intrinsic and extrinsic factors are the critical factors influence an individual career choice among students and practitioners. Total of 62.2% of the practitioners graded salary as the vital consideration, whereas students ranked salary as 51.9 % and in the second top priority in their choice. The importance of salary as the career choice was further supported in the research by Baines (2009); the mentioned salary was ranked as the top 3 most influencing factors for Asians when it comes to career choices. Also, besides looking into the job status, reputation, career perspective, and self-development in the careers choices, financial security in terms of salary will be the primary consideration and preference to accept an offer. A high salary is eventually an attractive factor for recruitment, and it becomes a critical element in employee career choices.

The results of the research supported family have a significant influence on career choices. However, the influence of family is unlike for each family due to the family culture, norms, and practices, young adults might try to choose different professions from their parents. The research by Alphonse (2016) proved that family would not affect the career choices for family members, such as their parents, relatives, or siblings, for job selection for the future career path. Each family with different culture, educational background, family structure, degree of freedom and parenting styles shall determine the parental involvement in a child's future career choice. Hence, Bates, 2015 argued that the influence in a family on the career choice, either positive or negative, leads to the differences in an individual's career choices.

The results indicated there is no significant relationship between peer influence and career choices. The study of Ausman, Javed, Ahmed, Samad, Pour, Mathew, Shaikh, Al-Sharbatti and Sreedharan (2013) might support this result, showing that peer influences do not have any impact on the career choice in the medical industry. Kimiti and Mwova (2012) supported the findings; these researches highlighted that peer influence has not impacted and influenced individuals regarding career choice among young adults. The guidance from schoolteachers could be one determinant affecting students' career choices. The statement was supported by Hellen, Stella and Omare (2017) where these researchers have agreed that peer influence is not the main factor influencing career choices.

In the research by Alexander, Holmner, Lotriet, Matthee, Pieterse, Naidoo, Twinomurizi & Jordaan (2010), the interest of an individual is directly related to an individual career choice and goal setting for career choices. Wolsey (2015) supported this; the individual will follow their interest to select their career path in the long run, then basing on security and financial benefits. The research by Gavo (2014), indicated that 98 % respondents agreed that personal interest leads to final decision-making for their career choice. It becomes the most crucial determinant and measure of job selection. The findings were supported by the conclusion made by Mberia and Midigo (2018), in their research found that interest has a strong influence in determining the career choices of young adults.

This study able to provide guidelines and directions for employers on the recruitment policy and talented retaining programme. Employers could incorporate these factors into their job assessment, interview, and evaluation for recruitment, promote productivity, and motivate firm performance. It may guide young adults to plan and decide their career path earlier for future career prospects. Government and human resource authorities could promote career advancement programmes, allowing young adults understand their needs and preference in their career path and reducing the country's unemployment and turnover rate.

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BAFE066:
**THE ROLES OF WORKPLACE FLEXIBILITY AND CAREER
DEVELOPMENT ON WORK-LIFE BALANCE AND ITS IMPACT ON
WITHDRAWAL BEHAVIOR AMONG MALAYSIAN NURSES: A
THEORETICAL MODEL**

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Abstract

With the prevalence of COVID-19, flexible working practices have gained wider appliance ever before. With these practices there are repercussion to it. This paper has three objectives. First, it seeks to develop a theoretical framework that encompasses the roots of work life balance. Second, it sheds light on the outcomes of workplace flexibility and career development into work life balance. Third, it introduces these challenges on withdrawal behaviors among Malaysian nurses. Five hypotheses and a proposed conceptual framework is developed to investigate the relationships between the four variables present in this research project. Withdrawal behaviour studies are till lacking in this country and especially down among nurses. Extensive literature review done to formulate the hypothesis with the hope of future research into the field.

Keywords: Work life balance, Workplace flexibility, Career Development, Withdrawal behavior, Nurses in Malaysia

BAFE067:
**BEYOND THE DICHOTOMY OF IN-HOME VS. OUT-OF-HOME:
FISH CONSUMPTION ADOPTION BARRIERS AND
THE DESIGN OF THE SBCC PROGRAM**

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Abstract

This conceptual paper proposes an integrative fish consumption typology using occasion-based segmentation to replace the dichotomy of in-home vs. out-of-home consumption. The benefit of this new integrative typology is that it improves the effectiveness of the Social Behavior Change Communication (SBCC) community education program. This SBCC framework suggests targeting the community with homogeneous problems to achieve better internalization of education messages. With wider penetration of information technology, consumers now heavily rely on digitalization in every aspect of their lives, including purchasing a fish meal. Furthermore, during the COVID-19 pandemic, consumption outside the home has become limited. Purchasing points that were originally located away from home have been replaced with mobile application online platform service purchasing points. The term “out-of-home consumption” has become generic and is no longer sufficient to explain the complexity of fish consumption behavior. This study proposes four types of fish consumption, combining cooking and consumption location, namely (a) cooked and eaten at home; (b) cooked at home, eaten outside the home; (c) cooked outside the home, eaten at home; and (d) cooked and eaten outside the home. The new integrative typology of fish consumption will be helpful for anyone considering solving problems of adoption barriers in specific communities. With an integrative typology of fish consumption, mapping the adoption barrier issues becomes more relevant and contextual. Knowing each consumption type barrier may help researchers design a more relevant and contextual community education SBCC program. Furthermore, the effectiveness of such a program would be measurable.

Keywords: Fish consumption, typology, social behavior change communication (SBCC), community education, adoption barriers.

INTRODUCTION

Indonesia is the country with the second-largest fish catch and cultivation in the world. The Food and Agricultural Organization (2016) stated that Indonesia’s total fish production is 23.2 million tons per year. However, only about 20% of Indonesia’s fishery production potential has been utilized (Ministry of Marine Affairs and Fisheries, Republic of Indonesia, 2017). Unfortunately, as a country classified as the highest fish producer in the world, Indonesia’s fish consumption status (54.5 kg/capita/year) is still relatively low. This figure is even lower than neighboring countries, such as Malaysia (70 kg/capita/year) and Singapore (80 kg/capita/year) (Widria, 2019). Therefore, the government needs to optimize the level of fish consumption to stimulate the fisheries sector and to improve the nutrition and intelligence of Indonesian children (Al-Lawi et al., 2019).

With the growing strategic role of fisheries in Indonesia, community education activities supported by the government to increase fish consumption have become central. Despite the government and fish-industry association efforts at implementing educational activities, a significant

target audience still has not linked the program to its adoption problems, and numerous barriers to consumption remain (Maulana et al., 2019). This segmentation is helpful in clustering consumption adoption barriers. However, the literature on adoption barriers still limits the typology of fish consumption to a dichotomy based on where the fish is eaten, namely in home vs. out of home.

One example for a study in home fish consumption is Maulana et al. (2019), who identified a 7-tier-based adoption barrier to in-home fish consumption, which linked problems between interaction points. Further, the behavioral-based segmentation variables of cooking skills and childhood experience were uncovered as the differentiators that divide customers into a few types with homogeneous adoption issues (Maulana, 2020). Meanwhile, the Mandal et al., (2021) study explores how the impact of the COVID-19 pandemic affects fish consumption at home. Health beliefs and socio demographic have also been discussed as factors influencing fish home consumption (Samoggia & Castellini, 2018).

While studies on in-home consumption accumulate, out-of-home fish consumption is still under-researched, especially in developing countries. Several studies that have discussed out-of-home consumption discuss the factors that can prevent someone from consuming fish outside the home. Pérez-Cueto et al.'s (2011) study in Spain and Poland shows an increasing trend of fish out of home consumption associated with increased awareness of healthy food even when consuming outside the home. Meanwhile, Lee et al. (2012) linked fish out of home consumption with perceptions of food safety in restaurants.

Out-of-home consumption is closely linked to habitual culinary food experiences in which fish menus become a fancy choice for middle-to-low-income consumers. In contrast with in-home fish consumption, where most housewives as the leading actors have similar journeys/paths, the consumer journey varies in out-of-home consumption. More actors are involved in the out-of-home journey, including family, restaurant attendants, street-kiosk owners, and social media content creators.

Besides culinary experience, new research into out-of-home fish consumption would benefit from an understanding of the macro environment. With the broader penetration of information technology, consumers now heavily rely on digitalization in every aspect of their lives, including purchasing fish meals. Furthermore, during the COVID-19 pandemic, consumption outside the home has become limited. Purchasing points that were initially located away from home are being replaced with mobile application online platform service purchasing points. Therefore, the term "out-of-home consumption" has become generic and is no longer sufficient to explain the complexity of fish consumption behavior. The dichotomy of in-home vs. away-from-home consumption needs to be revisited.

LITERATURE REVIEW

In-Home vs. Out-of-Home Fish Consumption

Previous studies have used different terms to describe consumption location, although they have the same meaning. Saksena et al. (2018) used food-at-home consumption, rather than in-home consumption. Meanwhile, food-away-from-home is an alternative to out-of-home consumption (Richards & Mancino, 2013; Saksena et al., 2018). However, some studies still use the term out-of-home consumption (Lachat et al., 2009; Lorenz & Langen, 2017). Another term, eat-out-from-home also appears. This term refers to buying food outside the home, whether it is eaten on the spot or enjoyed at home (Ramlawati et al., 2018).

The difference between the two types of consumption (in-home vs. away-from-home) is has five aspects: (a) consumption frequency, (b) orientation, (c) knowledge required, (d) perceived cost, and (e) involvement. The contrast between these fish consumption context will assist researchers in the exploration of insights about adoption barriers (Table 1).

Table 1. Differences Between In-Home and Away-from-Home Fish Consumption

	In-Home Consumption	Away-from-Home Consumption
Consumption frequency	Frequently	Occasionally
Orientation	Nutrition and health	Lifestyle
Knowledge required	Cooking skills, presentation at dinner table	Fish type, price, menu variation
Perceived cost	Low to high	Generally high
Involvement	Individual	Individual and business owners

Social Behavior Change Communication (SBCC) Framework

SBCC is a strategic thinking framework that uses the themes of advocacy, behavior change communication, and community mobilization to encourage and manage change in society. While the conventional method uses a macro approach through mass media that convey messages directly to individuals, SBCC focuses on integrating intermediary media and interpersonal communication. The basis of the SBCC is Ajzen's (1991) Theory of Planned Behavior (TPB). The focus of TPB is the relationship between knowledge, attitudes, and desires. TPB explains that behavior is the result of the interaction of these three variables. It focuses on systematic planning, design, implementation, monitoring, measurement, and evaluation

The design of educational activities and interventions must consider three factors that can support the sustainability of behavior change: (a) communication effectiveness, (b) accommodating the environment, and (c) accessibility. These three factors help to ascertain whether the behavior promoted by educational activities can be carried out as quickly as possible by the targeted community members. If the organizers promote behavior change with practical and easy-to-understand communication methods, then the knowledge of individuals will increase, and their attitudes will also be more positive. However, if the surrounding environment is not accommodating and the willingness of individuals to adopt the behavior is not taken into account, then the chances of the behavior change sustaining will be low.

Transfer of knowledge and new perspectives to society is not an easy matter. Behavior is a manifestation of several internal (the genetic, physical, and biological conditions of humans) and external factors (the physical and social environmental conditions around the individual). These factors interact and elicit responses in the form of thoughts and actions within the individual (Bateson et al., 2000).

The complexity of individual behavior is not the only challenge for organizers of educational and intervention activities. It should be noted that society is not a unified whole, but a collection of individuals, each of whom has different characteristics (Sunarto, 2005). Differences in characteristics, interaction patterns, and hierarchies between individuals are essential variables in knowledge transfer efforts because each response will differ.

Behavioral-Based Segmentation

Although there has been much discussion about the importance of using behavioral factors, many researchers and marketers still implement grouping based on demographics and psychographics. For example, research on organic food adoption (Thorsdottir et al., 2012) can be based on ethnicity, age, income, and education level (Tan et al., 2015). Segmentation based on demographics and psychographics is often ineffective, because the basis of the grouping is more about who participants are than what they do or think (Urbancokova et al., 2020).

Behavioral segmentation refers to grouping all the consumers into homogeneous groups based on their mutual buying behavior patterns or problems. Behavioral variables commonly found include benefit sought, frequency of purchase or consumption, occasion, purchasing habit, customer journey stage, user status, and attitude toward product or service (Goyat, 2011; Kimiloğlu et al., 2010; Lemon & Verhoef, 2016). There are several advantages to grouping customers based on behavior, one of which is that the campaign program can be customized. Understanding the exact needs or problems of groups means that more relevant solutions can be offered.

Research that has explained behavioral segmentation has focused on the 7-tier-based adoption barriers to fish consumption in Indonesia (Maulana et al., 2019). The general theme in this study is that consumer complaints are expressed in the term 'it's complicated', which describes the blocking attitude to people's desire to include fish on the menu in their homes for their families. These findings integrate those of previous studies on various inhibiting factors that were investigated separately. For example, lack of knowledge about the health benefits of fish was discussed by Olsen (2004), while fish access/supply issues were raised in the research of Alemu and Adesina (2016) and Trondsen et al. (2003). Quality and handling problems concerning fish were addressed by Birch et al. (2012) and Brunsø et al. (2009). Altintzoglou et al. (2011) discussed the complications of fish consumption for housewives, including the challenge of convincing children to consume fish.

The uniqueness of Maulana et al.'s (2019) research is the discovery of different levels of barriers to in-home fish consumption that are interrelated with each other. Solving problems at one level is not enough, and if the obstacles at the previous level have not been resolved, they will continue to block attitude and intention.

CONCEPTUAL FRAMEWORK

The New Integrative Typology of Fish Consumption: Occasion-Based

The literature review identified two significant variables linked to the consumption behavior that, when combined, portray four types of different fish consumption occasions. The variables are cooking point and consumption point. In home and away from home are still being used, but they must be linked to each other to make them contextual. The discussions should not only be about where the food is consumed, but it also where it is cooked. It is also necessary to consider the purchasing channel or purchasing point, whether online or offline/physically located at the food outlet.

The existing adoption barriers map of fish consumption in the literature focuses on the consumption of Type 1 (in home) and Type 4 (out of home). This paper has identified a new research gap: barrier problems in consumer segments Type 2 and Type 3 (Figure 1).

		Fish Consumption Point	
		At home	Away from home
Fish Cooking Point	At home	Type 1 Cooked and consumed at home	Type 2 Cooked at home but consumed away from home
	Away from home	Type 3 Cooked away from home but consumed at home	Type 4 Cooked and consumed away from home

Figure 1. *Types of Fish Consumption Behavior based on Consumption and Cooking Point*

A description of each type of fish consumption follows, and then there is a discussion on adoption barriers captured from past studies.

Type 1: Cooked and Consumed at Home

This type refers to in-home consumption behavior. Various adoption barriers dominate the literature, including price perception; smell when cooking fish; difference in safety from meat (Brunso et al., 2009); price; concerns regarding the origin; concerns about freshness; difficulty in evaluating seafood (Birch et al., 2012); sensory barriers; convenience and quality barriers (Badr et al., 2015); personal, social, and environmental barriers (Lorenz & Langen, 2017); and 7-tier adoption barriers: interaction points, childhood experience, and cooking skills (Maulana et al., 2019). Further research on fish consumption behavior is still ongoing and continues to build on previous studies. The benefit of consumption at home (healthier and more intelligent children) is part of the motivation for this study.

Type 2: Cooked at Home but Consumed Away from Home

This type discusses how fish become the choice of housewives for lunch for schoolchildren, for the husband's office, or for family weekends and holidays as a picnic lunch, for example. The decision still involves family members because they are the ones who will enjoy it. There are still few studies that discuss barriers to and fish preferences for consumption outside the home. Therefore, this research is opening a new avenue for research studies in the future.

Type 3: Cooked Away from Home but Consumed at Home

In this type, there are two sub-segment. First is the purchase of takeaway or eat-out fish dishes, which consumers must collect from the food outlet. The second type is purchasing fish dishes through mobile apps, where consumers interact with food outlets using online delivery platform services. Understanding fish consumption behavior of this type is critical because of the growing food sales through online delivery. Answers are needed for questions such as the barriers consumers face when choosing not to cook at home regarding their preferences for fish menus. To date, there are few specific studies on fish consumption for Type 3; therefore, researchers can fill this gap. An exciting result from Ramlawati et al. (2019) in her study of what she called eat migration culture behavior found that one of the adoption barriers in this type is accessibility.

Type 4: Cooked and consumed away from home

This type refers to a traditional fish consumption typology, namely away-from-home consumption, such as dine-in or eat-in activities in restaurants and other food outlets. Research on adoption barriers for this fish consumption type is widespread, including barriers in the field of portion size and diversity meals (Vandevijvere et al., 2009), taxes on food (Richards & Mancino, 2013), food safety, word of mouth (Lee et al., 2012), food neophobia and environmental attitudes (Smith et al., 2017), and attitudes to and knowledge about fish (Perez-Cueto et al., 2011).

Design of a Contextual SBCC Community Education Program

The availability of the new integrative typology of fish consumption provides a new understanding of the similarities and differences between types of consumer segments. This typology is helpful as a guide for the organizers of the community education program because it can assist them in designing more effective and efficient programs. For example, one of the programs related to efforts to increase fish consumption is the 'Gemarikan' SBCC program. The Indonesian government initiated this program to increase fish consumption at the household level. This program was initiated in 2004 and is still being implemented. The activities carried out in this program are divided into two parts, namely (1) image-building activities and (2) brand activation activities. The first activity is to increase awareness of the importance of fish, increase knowledge about the benefits of fish, and increase interest in cooking fish for families. The second activity is more practical and action-oriented, namely direct and concrete interaction. This activity is dominated by face-to-face and interactive events.

If programs to increase fish consumption previously only focused on changing consumer perceptions about fish, through this typology, it can be illustrated that in types 3 and 4, it is about consumer perceptions and knowledge and factors from fish food menu providers. The right education program for the suitable types 3 and 4 is to place the restaurant owner as of the program's target. While types 1 and 2 are still targeting consumers.

The targeted community will get the direct benefit after the adoption of the new approaches. The following are examples of contextual community education programs that are adapted to adoption barriers in each type of consumer segment. While such education programs to increase fish consumption previously (Types 1 and 2) only targeted consumers, through this typology, we can see that in Types 3 and 4, the target audience of the education programs is broader than just consumers. It also covers restaurant owners and other fish meal providers (Table 2).

Table 2. *Typology of Fish Consumption, Barriers, and Program Examples*

Consumer Segment	Adoption Barriers	Contextual Community Education Program Examples
Type 1	Barriers at the 7-tier point of interaction Lack of childhood experience Lack of cooking skills	Intelligent flashcard game Social media for fish meal recipes School event and sampling/tasting
Type 2	Takes too long for cooking preparation Fishy and messy inside the lunch box	Cookbook: ideas for lunchbox Fish fillet introduction and promotion
Type 3	Expensive Not familiar with the meal Messy appearance due to simple packaging	Targets restaurant owner: Social media campaigns Education for ideal packaging
Type 4	Portion size is too small: expensive Diversity meals Food safety Attitudes and knowledge about fish varieties	Targets restaurant owner: Combined menu with rice and/or veggies Attractive and clear menu catalogues Open kitchen Posters in stores

CONCLUSION AND DISCUSSION

Research Implications

This study provides an opportunity for further researchers to fill the research gap. Moreover, it reminds us of the importance of finding each segment's homogeneous barrier problems before offering solutions. The new integrative typology of fish consumption will be helpful for anyone considering solving problems of adoption barriers in specific communities. By identifying the location variables in cooking and eating, we learn that each occasion-based segmentation type consists of homogeneous adoption issues. More knowledge of consumption barriers via a more holistic map would help researchers to design a more relevant and contextual community education SBCC program. Furthermore, the effectiveness of such a program would be measurable and easily trackable.

This study serves as the initial stage of and the basis for further research on the investigation of barriers to fish consumption that are specific and contextual. With the proposed integrative typology of fish consumption, which is more relevant than existing models, the mapping of adoption barrier issues and, at the same time, their solution becomes sharper. Fish consumption adoption is not simple, but its complexities can be explained when appropriate guidelines such as those provided in this study are adopted. To build a holistic and comprehensive overview of fish consumption adoption barriers, we should use the same basis, the same typology. More researchers are invited to fill in the gap in the literature.

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BAFE068:
**THE IMPACT OF GREEN INTERNET OF THINGS (IoT) ON SERVICE
BASED MNCs FIRM PERFORMANCE. MEDIATING EFFECT OF
SMART HUMAN RESOURCE MANAGEMENT(SHRM)**

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Abstract

The term Smart Human Resource Management (HRM) has become the buzz word within the emerging business field and its significance in driven the Service Based MNCs firm performance. Smart HRM and Green IoT has become a hot topic in recent research since the awareness of environmental, social, and economic well-being among the organization and the employees within the firms. Organizations adapting to Smart HRM and Green IoT drive Human Resource professionals, Information Technology professionals make certain fundamental changes on their daily operations to suit the innovation, and to fit the business. Grounded with the Resource Based View (RBV), and Dynamic Capabilities Theory (DCT), this research aims to focus the impact of adoption Green IoT on service-based MNCs firm performance, and the mediating effect of Smart HRMT on green IoT and service-based MNCs firm performance. Using disproportionate stratified random sampling, data will be collected from a sample of managerial staff of multinational corporations to test the hypotheses.

Keywords: Firm Performance, Smart HRM, Green IoT, Service-Based; MNCs

BAFE070: BEHAVIOUR CHANGES FOR CONSPICUOUS CONSUMPTION IN THE NEW NORMAL ERA

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Abstract

Conspicuous consumption plays significant roles in daily life of modern consumers and has been a key driver of global economy. However, Covid-19 has severely disrupted the economy and triggered profound changes in consumer behaviours. Digital interaction through social media and virtual meeting have become the new norms, replacing most of physical interactions. This paper sets out to address issue of behaviour changes for conspicuous consumption in the new normal era, particularly in relation to self-identity, psychological association and brand association. Limited literatures are available in this specific area as covid-19 pandemic is still relatively new. A conceptual framework was developed and addressed using qualitative study, employing a focus group discussion with respondents experiencing in conspicuous consumption – both prior to Covid-19 pandemic and in the new normal era. The findings suggest that the new normal has affected consumers to slow down conspicuous consumption by buying less frequently or buying less expensive brands, and partially shifting their spending into area of health, sustainability and environment. However, conspicuous products are still relevant, as peers pressure continues to strongly affects conspicuous consumption, and conspicuous products perceived to enhance self-esteem and self-identity. Psychological association and brand association observed contributing strongly to conspicuous consumption. Additionally, conspicuous signalling has been shifted into digital, particularly through social media and virtual meeting. This study implies for marketers to adapt their strategy and campaign into the new attitudes of conspicuous consumption.

Keywords: Conspicuous consumption, new normal era, self-identity, brand association, psychological association

INTRODUCTION

The term conspicuous consumption was first introduced by a Norwegian-American economist and sociologist Thorstein Veblen (1899) in his publication of "The Theory of the Leisure Class". He criticized the neoclassical theory of consumption in which people do wasteful spending to show off and expose wealth (Trigg, 2001). Instead of maximizing the utilizations of the products, Veblen (1899) suggests that individual's preferences on conspicuous products consumption are determined socially in relation to the individual hierarchical position. This differentiates conspicuous products from routine or regular products, where conspicuous product's satisfaction comes not merely from the material utilization, but more from explicit comparisons to others when consuming goods, services and leisure in an effort to portray actual and inspirational status (Fitzmaurice, 2015).

Several theories exist as to explain the reasons why individuals consume conspicuously. Some theorists suggest that it is due to the competitive nature of individuals as the ownership of luxurious goods expresses the superiority of the possessors and their status in society over the non-possessors (Zahirovic-herbert & Chatterjee, 2020). Veblen's conspicuous consumption involves the display of "pecuniary strength" and hence social standing in a competitive social system. Some other theorists claim that it is due to the insecurity of individuals that drives them to consume conspicuously as people use luxury goods to hide their personal insecurities and they believe their conspicuous

products possessions define their public image and mask their shortcomings (Zahirovic-herbert & Chatterjee, 2020).

The original idea of conspicuous consumption that Veblen (1899) introduced was based on the evolution of a leisure class to display their wealth and status. Development of wealth, particularly since the second half of 20th century has been driving evolution of conspicuous consumption across all social classes (Trigg, 2001). Furthermore, recent globalization has made access to conspicuous goods available to almost everyone all over the world. At the same time, rapid development of information and communication technology (ICT) has made possible for people to instantly see trend in life style happening across the globe, which they can then easily pick and choose to follow the trend by attaining items from all over the world to create a greater compatibility between their identity and who they want to identify with (Bojic, 2020). This phenomenon has been a critical driver for consumerism that positively affects the economy growing.

Unfortunately, the latest unexpected and sudden Covid-19 pandemic has drastically affected our society – both economically and socially. Echegaray (2020) argued that this may be the end of conspicuous consumption – as people spend most of their time isolated or at a distance from others; status symbol may change or display signaling may lose importance. Display becomes irrelevant when no physical meeting occurred. However, is physical display likely to be replaced by status symbol that can be communicated online, such as through social media or virtual meeting? – a phenomenon of new norms? Similarly, economic hardship caused by Covid-19 pandemic – such as rising unemployment, less income, economic uncertainty – may influence people to stop or reduce spending on unnecessary items such as conspicuous products.

This paper therefore builds a theoretical framework to help understanding influence of self-identity, psychological association and brand association as antecedents on conspicuous consumption, and changes in conspicuous consumption behaviour in the new era, by answering the following research questions:

- RQ1: In the new-normal era, to what extent were the behaviours' changes in conspicuous consumption?
- RQ2: In the new-normal era, to what extent do perceived importance of self-identity, brand association, and psychological association influence conspicuous consumption?

The rest of the paper is organized as follows: the theory of conspicuous consumption, the influence of self-identity, psychological association and brand association to engage on conspicuous consumption are analysed based on past researches. The impact of new-normal era due to Covid-19 pandemic on changes of behaviours in conspicuous consumptions is also analyzed based on recent literatures. A proposed model is presented after that to help exploring and answering the research questions. The research method is then introduced, followed by analysis and its implication. Finally, the results are summarized and limitation is presented.

LITERATURE REVIEW

Theory of Conspicuous consumption

Conspicuous consumption is defined as the purchase of goods or services for the specific purpose of displaying one's wealth or as a means to show one's social status, especially when the goods or services publicly displayed are too expensive for other members of individual's class (Kenton, 2020). The definition refers to consumers who purchase expensive items to display wealth and income rather than to cover the real needs of the consumers. These consumers use such behaviours to maintain or gain higher social status.

Veblen's (1899) theory of Conspicuous consumption was developed further by another American economist, James Duesenberry, who introduced the concept of "bandwagon" or "demonstration" effect in 1967. Bandwagon effect denotes a tendency of an individual to acquire a particular style, behaviour or attitude because everyone else is doing it, resulting perceived public opinion thus gains the quality of a self-fulfilling prophecy (Rüdiger Schmitt-Beck, 2015). James Duesenberry claimed that individuals purchase goods and services are to preserve their self-esteem and keep up with societal expectations (Zahirovic-herbert & Chatterjee, 2020).

While originally Veblen's context of conspicuous consumption was in general theory of social stratification, in contrast, in 1990s Wilson argued that conspicuous consumption is a source of self-expression of democratic, individuality, creativity and pleasure (Edgell, 1992). Douglas Holt later suggested that postmodern conspicuous consumption no longer rests upon acquiring consensual markers of status, but upon consumers' attempts to create lifestyle and self-identities (Fitzmaurice, 2015). Juliet Schor also argued that consumers, regardless of their class positions, consume conspicuous products that are compatible with self-image to present and signals their self-image visible to others. She therefore found that women are more likely to buy expensive lipstick – as it is publicly applied – than facial wash (Bronner & de Hoog, 2018).

Additionally, the growing educational and entrepreneurial status and reference groups have reinforced middle class consumers' need to belong within a peer group or a team of professionals who expressed their taste and occupational identity through distinguishable consumption lifestyles or conspicuous consumption (Fitchett, 2012). This increases a more market orientation society and subsequently increases the significance of status driven consumption. This aspirant middle-class are the status seeking consumers who enjoy consuming a variety of luxury goods so as to position and establish themselves within an elite professional class.

Furthermore, urbanization, fluids social relationships and the breaking down of traditional concepts such as education, social class and occupation – have stimulated the dynamics of competitiveness and emulation (Fitchett, 2012). This evolution generates imitators from the working class who found gratification in commodity culture and the reconstruction of their self-identity via conspicuous consumption. The increasing availability of mass credit card and other massive consumer credit or loan facilities have further shaped consumer society and liberated individuals' desire to acquire additional status symbols through conspicuous consumption.

Currently, Conspicuous consumption practices have been widespread across the world and across socio-economy classes, in which business organizations produce a wide range of status based products and strategies so as to meet a growing consumer demand for social status, distinction and differences (Fitchett, 2012). This trend of consumption has been penetrating further to developing countries, including Indonesia. At the same time, marketers adapted their strategies and campaigns by developing and promoting products which position them closer to aspiration of social groups where information and communication technology development has enabled this campaign and promotion reaching consumers worldwide in real-time.

Self-Identity

Self-identity is defined as the degree of which an individual consider oneself as a valued, capable and worthy person (Mittal, 2015). Components of self-identity include physical, psychological and social attributes – which can be influenced by the individual's attitudes, habits, beliefs and ideas (Weinreich, 1988). Additionally, Carl Rogers (1974) believed that self-identity was made up of three different parts: ideal-self which refers to person an individual wants to be; self-image which refers to how an individual sees him/herself including attributes like physical characteristics, personality traits, and social roles; and self-esteem which refers to how much an individual likes, accept, or value him/herself that can be impacted by a number of factors including how others see him/her, how others think the individual compared to others, and the individual roles in society (Cherry, 2021).

Carl Rogers (1974) further argues that self-identity is not always perfectly aligned with reality, self-identity is said to be congruent when it is aligned, and self-identity is said to be incongruent when there is a mismatch between how an individual sees him/herself (self-image) and who he/she wishes or ideal self (Cherry, 2021). Self-identity is found in the capacity to keep a particular narrative going and has to be routinely created and maintained in reflexive activities of an individual (Weinreich, 1988). Therefore, the motives that persuade individuals to engage in conspicuous consumption can be affected by the same motives that help them build their identity in society.

Modern consumers purchase conspicuous products as a way of expressing an emotional and psychological need and constructing their self-image and building self-concept (Bojic, 2020). This is aligned with the fact that as the standard of living increased in the past half-century, much of current

consumption does not happen because of its product utility, but it encompass person's uniqueness expressed through individual's values, attitudes and opinions (Fleming, Monique A. Petty, 2000).

Brand Association

Brand symbolism is what the brand means to consumers and the brand spectrum of feeling they experience in purchasing and consuming a product (Paurav, 2008a). When an individual interacts with other member of a society, they learn the responses and attitude of others towards the symbolic meaning of brands, and thus their consumption behaviour of brand is influenced by other people (de Chernatony & McDonald, 2012).

Paurav (2008) argues that people generally associate their individual image with purchasing behaviour patterns, and their choices of brands are frequently influenced by their individual image. As conspicuous consumption can display certain status through acquisition in order to express self-identity, showing an interactive effect between consumer's self-image and brand image therefore is an essential factor influencing it (Paurav, 2008a). This explains phenomenon such as why some office ladies buy LV bag on instalment plans, or some junior executives spend large portion of their salary for Gucci shoes – as these LV and Gucci brands are not merely for indulgences or just make vanity – they are part of a new social protocol where their identity and self-worth are determined by the visible brands they wear. (Husic & Cicic, 2009).

Escalas (1998) introduced a concept of self-brand association (SBA) as the degree to which consumers combine the brands with self-identity, and consumers spontaneously match their self-image with the brand-image. SBA therefore plays an important role in purchase decision of conspicuous goods as people tend to purchase brands that are mirroring to themselves (Li et al., 2019). Hence, consumers purchase of conspicuous goods not only to establish their success and identity, but also to assimilate with the reference group that they consider compatible with identity.

Psychological Association

Previous researches suggest several psychological factors influence intention to engage in conspicuous consumption such as showing who I am, symbol of success, symbol of pride and enhance my image (Paurav, 2008a). This may affect consumers to purchase certain brands in order to obtain self-fulfilment, sense of belonging, security, self-respect, warm relationship with others, being well respected, and sense of accomplishment – reflecting conspicuous consumption is a consequence of consumer desire to signal wealth (Paurav, 2008a).

Prior research also identified consumer needs in uniqueness. When consumers purchase conspicuous products to satisfy their need for uniqueness, the product value increase as its perceived uniqueness increase, or in other words consumers could value a product less when more consumers own it (Marilynn B. Brewer, 1991).

Bandwagon effects can also be an essential factor influencing conspicuous consumption. The bandwagon effect describes a situation where consumer purchase products because others are buying the same products (Rüdiger Schmitt-Beck, 2015). Thus, if possessing conspicuous consumption is viewed as socially appropriate, an individual as a good member of the society may have to subscribe to fit in with this behaviour.

Covid-19 and New Normal Era

As people apply tight health protocol due to Covid-19 pandemic, people tend to spend most of their time isolated or at a distance from others – a status symbol may therefore change or display signalling may lose importance (Echegaray, 2020). Display becomes irrelevant when no physical meeting occurred. However, as meetings and social interactions migrate to digital and social media, display or status symbol may also be expressed through digital and social media and becomes new social norms. Echegaray (2020) further argues that economic hardship (such as rising unemployment, no savings and reduced income) and everything from home practices (such as work from home, school from home, and leisure from home) may dismiss unnecessary materialism such as conspicuous consumption.

Hong (2020) argues that in the presence of universal alienation such as what's happening in Covid-19 pandemic time, consumption may be not as conspicuous as before, which essentially signifies the demise of status symbols in the traditional sense. He therefore suggests that values and practices that signal opulence conspicuousness will be replaced by practices and modes pertaining to less or inconspicuous consumption and lifestyle – such as generosity, altruism, psychological and physical wellness, new aesthetics, and financial wellbeing. He argues controversially that social media will become truly social in the sense that sensationalizing and bragging about food eaten, clothes worn, activities done, and places visited will have a very small place to be.

As a comparison to changes in conspicuous consumption during Covid-19 pandemic – conspicuous consumption during economic recession could be considered. Joseph C. Nunes, and Xavier Dreze (2011) offer perspective of segmentation, where recession has led wealthy consumers to adopt more subdued for status: consumer low in their need-for-status don't use conspicuous consumption that reflect taste rather than signal status, therefore they postpone or reduce conspicuous consumption; conversely, high need-for-status consumers still feel a need to do conspicuous consumption, particularly if they are from high socio economy class with less impact from recession.

CONCEPTUAL FRAMEWORK

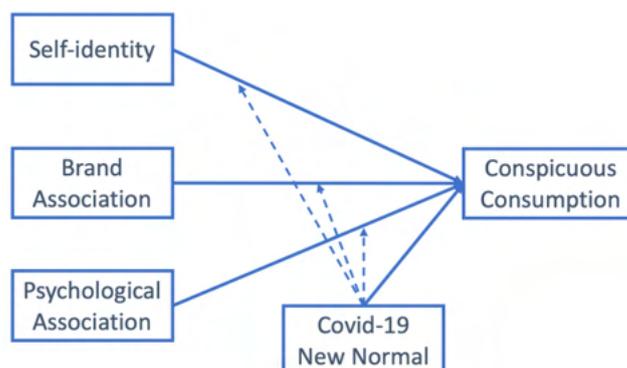
To help understanding the behaviour changes for conspicuous consumption in the new normal era, and the influence of self-identity, brand association, and psychological association on conspicuous consumption – a theoretical model was developed as in figure-1. This theoretical model was then used to answer the research questions.

Prior studies have shown relationship between self-identity and conspicuous consumption. (Bojic, 2020) argued that conspicuous consumption can create something artificial for an individual in order to achieve ideal self, resulting in increased purchases of luxury goods. Huang & Wang (2018) investigated the relationship between self-identity (social identity) and conspicuous consumption in China, and found that migrant's workers' conspicuous consumption is mainly driven by the bandwagon effect to associate with aspiration group, differing from those more privileged consumers.

Past studies have also shown relationship between brand association and conspicuous consumption. Paurav (2008a) found in a study involving middle aged consumers that brand association is a crucial importance in influencing conspicuous consumption. Abdolvand & Reihani (2013) in their study among young people also showed that brand association significantly affects the consumption behaviour of luxury products. Indeed, Paurav (2008) and Abdolvand & Reihani (2013) studies also suggested relationship between psychological association and conspicuous consumption.

Several studies have suggested the influence of Covid-19 on conspicuous consumption. Echegaray (2020) suggested that as people spend most of their time at home with no physical interaction with others, display has no relevance which therefore affects conspicuous consumption. Echegaray also suggests that economic hardship during Covid-19 pandemic have influenced people to avoid unnecessary materialism which gives impact to conspicuous consumption.

Figure 1: Proposed Conceptual Framework



RESEARCH METHODOLOGY

Sampling Design

Research for this paper was conducted in greater Jakarta area in January 2021. During this period, this area was still in the middle of Covid-19 pandemic where restriction of social and economic activities has been applied since beginning of the pandemic in March 2020, causing people spend most of their time at home for work, social and leisure by leveraging digital and communication technology.

The study involved a qualitative research methodology to gather consumers' behaviour, needs and insight – as qualitative research is important in collecting narratives, observations and experiences. (Langford & May, 1994) suggest that qualitative research investigate phenomenon more thoroughly as it is concerned with discovery and directed towards a more in-depth perspective on the ways people understand and manage their day-to-day situations in particular setting. Therefore, qualitative study seems to be a particular relevant way of understanding social behaviours. A virtual focus group discussion (FGD) using zoom with six respondents was set-up, as having group discussion gives good dynamics and insights to answer the research questions.

Sampling of 6 respondents from greater Jakarta were recruited applying a convenience sampling method with premise that the participants chosen had experiences with conspicuous consumption in the last one year and available for a focus group discussion as per schedule. The choice of convenient sampling for this research is also based on knowledge that the respondents know they could provide valuable insight and information on conspicuous consumption. Samples were drawn to obtain coverage of age (25-55 years), gender (100% female), education (university graduates and above), working professional or entrepreneurs and income level (monthly IDR 25 million and above). Table-1 shows characteristics of the respondents participating in the focus group discussion.

Table 1: Respondents participating in the FGD

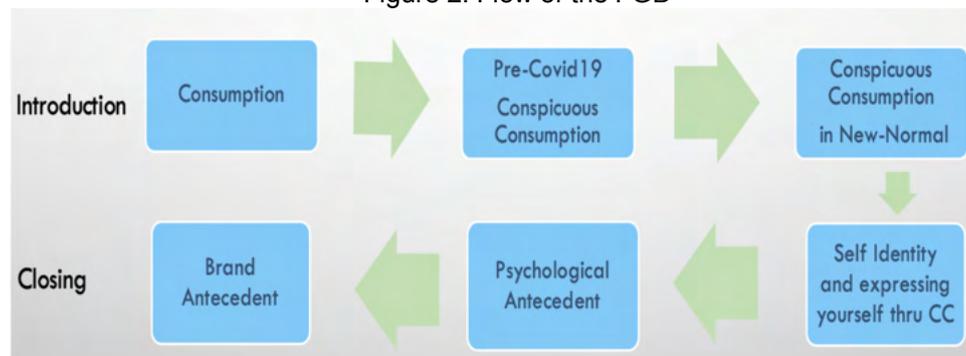
Initial	M/F	Age	Education	Employment	SES Class	Profile	Orientation toward Conspicuous Products
CL	F	41	Master degree	Professional, a senior manager in MNC	A	Top 5% income group, a mother with kids, very active in various social and professional groups, highly concerned with appearance, elegant and highly fashionable; extrovert	Always at the top of the wave, be the first to have a new release, actively displaying conspicuous products, enjoy being reference for the group, easily associated with certain products and brands. Dares to be unique and different
JB	F	37	Graduate + Profession	Professional, a manager in MNC	A	A mother with kids, active in few professional groups, medium concerned with appearance, a fashion follower; introvert	Actively follows trends of her group, not the first nor the last one to buy. Does not aggressively display conspicuous products, but does not confident not to possess what the other group members have
OC	F	45	Graduate + Profession	Professional, an executive in MNC	A	A mother with a kid, active in several social and professional groups, highly concerned with appearance, highly fashionable, extrovert	Amongst the first to follow the fashion trend within her groups, confidence in displaying her conspicuous product, willing to invest for brands she wants, sometimes become fashion reference for others
DP	F	51	Master degree	Successful entrepreneur, a former executive in MNC	A	A wife with no kid, active in selected social and professional groups, medium concerned with appearance, fashionable, introvert	Less concerned with what others possess or wear. Confident with what she believes and likes in fashion (ethnics, naturals). Willing to invest if the product or brand aligned with she believes in
DV	F	27	S1 + Profession	Digital entrepreneur, focus on fashion business	A	A mother with kids, active in social groups, highly concerned with appearance, a fashion follower; extrovert	Actively follows trends of her group, amongst the first to follow fashion trend in her groups. Confidently displays conspicuous products. Perceived high peer pressure. Willing to sacrifice saving or other spending for conspicuous products.
JP	F	33	Graduate	Entrepreneur, food and beverage industry	A	A mother with a kid, highly active in social media and professional groups, highly concerned with appearance, a fashion follower. Extrovert	Being one of the first to follow the latest trend in fashion. Enjoy displaying conspicuous products. Less confident to be different in fashion, tends to feel high peer pressure. Feels an outsider if not following trends of her group

Research Procedure

Semi-structured discussion guide for the FGD was developed to provide direction and a reference on information to gather from the respondents, but at the same time it still allows flexibility to adjust aligned with dynamics of the discussion. Figure-2 shows flow of the discussion. The discussion was divided into five major parts.

- The first part examined consumers' behaviours on purchase and consumption.
- The second part probed into consumers attitudes on conspicuous consumption prior to Covid-19 pandemic.
- The third part examined the same issues as in the second part, but in the set-up of Covid-19 new-normal era. This part includes getting insights on consumer behaviour changes in conspicuous consumption in the new normal era.
- The fourth part examined deeper into self-identity and how consumers' attitude in expressing self-identity through conspicuous consumption in the new normal era
- The fifth part probed into psychological association towards conspicuous consumption in the normal era using several psychological items
- The sixth part probed into brand association towards conspicuous consumption in the new normal era

Figure 2: Flow of the FGD



DATA ANALYSIS

The data collected from FGD was first cleaned-up to get the essential information. This information was then analyzed to draw important insights in several aspects based on theories we employed in this study. The results of the study are structured following logic of the two research questions described in the introduction.

Behaviours' Changes for Conspicuous Consumption in the New Normal Era

As people apply tight health protocol due to Covid-19 pandemic, people tend to spend most of their time isolated or at a distance from others, therefore status symbol may change and display signalling may lose importance (Echegaray, 2020). Consequently, display may become irrelevant when no physical meeting occurred. However, as meetings and social interactions migrate to digital and social media, display or status symbol may also be expressed through digital and social media and becomes new social norms.

Echegaray argument above is consistent with the findings, where most respondents in the early stage of lock-down felt no value of purchasing conspicuous products – as no physical interaction with others to show off, and no more peer pressure. However, interaction (and therefore the show-off and peer pressure) migrated quickly into digital and social media. Consequently, conspicuous consumption rapidly transformed through digital and social media as well. This suggests that conspicuous consumption is still relevant for consumers, but the display is shifted mainly into digital. CL shared her experience as follow:

“In the beginning of lock-down, I seem to lose my conspicuous shopping appetites as I had no avenue to show it off. But It didn't take long when everybody started to get digitally connected and through social media. Virtual live started to revive almost perfectly imitating our social life, so did my conspicuous consumption was reborn. It's funny, sometimes I wear semi-formal dress that I just bought at home. I know my picture and video spread and reach wide audience digitally. This makes me fulfilled.”

Another experience was shared by respondent JB:

"In the new era, despite I wear a mask all the time when I go out – I continue applying my expensive brand of lipstick. Even though my meetings and social interactions are mostly virtual now, I still apply the same make-up and wearing proper clothes or suits as before. It gives me comfort and confident as I need to be consistent in displaying who I am".

Hong (2020) argues that in the presence of universal alienation such as Covid-19 lockdown, consumption may be less conspicuous and suggests that practices signalling conspicuousness will be replaced by practice related to health, social and environment. Experiences shared by respondents support Hong's argument that there seems to be less conspicuous consumption in the new normal, but they believe that it may be temporarily and may eventually come back when the situation is back to normal. Respondent OC shared her experience and view:

"In the new normal, I hardly go out for work, attending social events or for leisure – I noticed that my shopping attitude towards conspicuous products is less intensive than before. I still buy some conspicuous products that I used to buy to keep me in the same waves with my peer, but I have less pressure to be always at the top of the waves".

Respondent DV shared her experience differently:

"In the new normal era, I am still very active in doing my business and in my social activities – though it is mostly through digital and social media. I feel that I still need to keep my image and my status by displaying conspicuous products that I have been attached with. However, I recognize that the economy is bad now and it has affected my financial situation as well. Sometimes, I compromise it by using a second brand that is less expensive, yet it still offers similar image to represent who I am. I will be fully back to the first brand when the situation is back to normal".

Hong's (2020) argument that practice of signalling conspicuous consumption in alienation may be shifted more to health and environment is consistent with the findings as expressed by respondent JP:

"I used to be quite lazy to do outdoor exercises and I do not like cycling. During new normal, my social group started to follow cycling trend and did regular trip together almost every weekend. It seems that I had no choice not to buy a bike in order not to miss the regular group activities. After a while, I realized that they use a specific brand of bike – I then purchased the same that costs me several times more expensive than the previous one. Currently, my social life in biking has been expanded to a broader network – guessed what, my new bike costs me more than ten times of the first one."

Respondent OC shared a similar experience:

"Stay at home makes me more aware of the situation in my house as I have more idle time. I found that in several group of my social media, people sharing pictures of their collection of decorative plants – looks cool. I started to follow the trend. I realized that there is also trend in certain types of expensive plants, so I also have it. It becomes my new hobby now, regularly I take pictures of my collection and sharing it in social media. I take certain angles in taking photos of my decoration plant, to show my front and back yards, living room, kitchen, and even bedrooms. At the end, I keep spending for decorating my house to show off virtually".

Fitchett (2012) argues that the growing middle-class consumers need to belong within a peer group or a team of professional who expressed their taste and group identity through conspicuous consumption. Indeed, the finding suggests that peer pressure continues to be an important influencing factor for conspicuous consumption in the new normal era. All respondents had experiences purchasing conspicuous consumption due to peer pressure such as shared by respondent CL:

"I am still happy with my iphone, as it is not very old model, it functions well, still looks good and I bought it quite expensively not long time ago. In fact, I am resistant to replace it as my valuable data is stored there. However, all of my inner clicks recently have purchased the

latest model, except me. This makes me feel like an outsider, a stranger. One incident during lunch (which I rarely had since the pandemic) with them, when everybody played with their new iphone while eating was enough to force me to finally buy the same iphone”.

Perceived Importance of Self-Identity, Brand Association, and Psychological Association on Conspicuous Consumption in the New Normal Era

Mittal (2015) defines self-identity or self-esteem as the degree of which an individual considers oneself as a valued, capable and worthy person. Weinreich (1988) suggests that self-identity is found in the capacity to keep a particular narrative going and has to be routinely created and maintained in reflexive activities of an individual. Therefore, the motives that persuade individuals to engage in conspicuous consumption can be affected by the same motives that help them build their identity in society. Most of the respondents claim that possessing prestigious products or brands plays an important role in constructing and enhancing self-identity. They suggest that a new identity can be constructed or existing identity can be enhanced by conspicuous consumption. Respondent JB shared her experience as follows:

“When I was still relatively at a junior position in the office, my lipstick was just a simple local brand. My office bag was also just a medium brand with only 1-2 collections. Now as a senior manager in the office, my appearance has to reflect my position as people should be impressed with what I wear or use. Now I am very specific with brand of lipsticks I use, and collection of shoes and bags I have that representing my position and status”.

Self-congruity theory states that various products and brands are perceived as reflecting the consumer's personality traits (Tatt, 2010- cited in Bojic 2020). Modern consumers purchase conspicuous products as a way of expressing an emotional and psychological need and constructing their self-image and building self-identity (Bojic, 2020). Despite consuming conspicuous products because of its utility, they consume conspicuously to encompass individual's uniqueness expressed through values, attitudes and opinions (Fleming, Monique A. Petty, 2000). Therefore, in making choice or preference, consumers assess it from congruence between self-identity and conspicuous products or brands – as the image of the conspicuous products or brands will reflect and represent person's self-identity. This is consistent with the finding, such as shared by respondent CL:

“Sometimes I purchased something just to show-off to others. I enjoy the reactions they give to me, but not necessarily from using the product itself. Therefore, I may use it only once or twice for show-off, and after that I never use it again. Additionally, I am consistently engaged with certain product (ladies bag) even its specific model (the classic one) from brand X – as I feel it reflects of me and what I want to be perceived i.e. classy and elegant. I buy this kind of product almost everytime a new one released, and I keep it for long to use. When I wear or use it, I feel very comfortable, confident and satisfying”.

Paurav (2008) study indicates that consumers' buying behaviours of conspicuous brands is affected strongly by personal factors, particularly “who I am” and “enhance my Image”. He suggests that this phenomenon also provides an insight into how consumers want to be seen while using conspicuous brands. Indeed, this is consistent with the finding where all respondents associated the luxury brands they use with “self-image” and “who I am” that they want to be perceived by others. Respondent CL shared her view and experience:

“I am a fanatic of a limited edition of brand Z. I just feel that the brand is true of me (“gue banget”). People know about this, so every time a new edition is released, I can be sure that I am among the first one to possess, though sometimes the price does not make sense. New normal may slow down me a bit in hunting for it, but I will definitely not change to other brands just to save money – they are not me”.

Paurav (2008) further argues that a product is usually consumed as an instrument in improving self-concept and describes a particular image that represents how they wish to be perceived by others. He also suggests that a consumer's self-concept is a strong predictor for conspicuous consumption products in comparison to others, therefore we can predict that consumers would have higher tendency to buy conspicuous products which are targeted towards their actual self-concept. This is consistent with the findings as shared by respondent DP:

"I would consider myself as a high supporter of green and sustainable environment. I am proud with the rich cultures from various ethnics we have in Indonesia. I want people know who I am in this regard, therefore I display it into products I choose and wear consistently in my daily life – such as a local ethnics knitwear, etc".

CONCLUSION AND DISCUSSION

Referring to the first research question regarding behaviour changes for conspicuous consumption, this research found that in the new normal era, conspicuous consumption is still relevant, yet the display is mainly shifted into social media and virtual interaction. Consumers also tend to be less conspicuous by buying less frequently or buying less expensive brands, but they believe that this may be temporarily and may eventually come back when the situation becomes normal. Practices of signalling conspicuous consumption found to be partially shifted more to health and environment. The finding also suggests that peer pressure continues to be an important influencing factor for conspicuous consumption in the new normal era.

On the second research question regarding perceived importance of self-identity, brand association, and psychological association on conspicuous consumption – the study found that even in the new normal era, possessing prestigious products or brands plays an important role in constructing and enhancing self-identity. Consumers preferences on products and brands are found to be assessed from congruence between self-identity and conspicuous products or brands. Additionally, consumers also found to associate the luxury brands they use with "self-image" and "who I am" that they want to be perceived by others. Finally, consumers found to have higher tendency to buy conspicuous products which are targeted towards their actual self-concept.

This research manages to provide a new understanding in behaviour changes, and perceived importance of self-identity, brand association, and psychological association on conspicuous consumption in the new normal era. This understanding may be used as insights for marketers in conspicuous products to shape their marketing strategy in the new normal era. As this research explored profound changes in consumer attitudes due to Covid-19 pandemic, for a similar research in the future, a longitudinal study is suggested to better capture attitude changes.

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BAFE071:
**THE ROLE OF INTELLECTUAL CAPITAL AND SOCIAL CAPITAL IN
DIGITIZING CULTURE-BASED MSME FOR THE MODIFIED
ONBOARDING PROGRAM OF MICRO SMALL MEDIUM
ENTERPRISES (MSMEs)**

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Abstract

Micro Small Medium Enterprises (MSMEs) have a strategic role in accelerating economic growth. This strategic role has increased since the Covid-19 pandemic. This is especially felt by the people of the Province of Bali, who before the pandemic depended a lot on the tourism sector. One of the programs from Bank Indonesia is onboarding MSMEs. This program is one of Bank Indonesia's efforts to educate MSMEs and empower MSMEs through digitizing MSMEs. The implementation of this program still faces various obstacles. The problems include human resource problems, infrastructure and information system problems, networking problems and social and behavioral problems. Based on resource-based theory and stakeholder theory, this problem can be reduced by developing intellectual capital and social capital. This study wants to empirically examine the role of human capital, structural capital, relational capital, and social capital in the digitization of culture based MSMEs in the modified onboarding MSME program. This research was conducted in the Province of Bali. Data collect using a questionnaire. Hypothesis testing was carried out using the Partial Least Square. The result shows that structural capital and social capital has positive effect on the modified onboarding MSME program. Meanwhile human capital and relational capital don't have significant effect on the modified onboarding MSME program. This study finds that employees of MSME still have not combined their abilities and knowledge optimally which could have been triggered due to low employee satisfaction with the company. Therefore, the role of government is very important in achieving the objectives of modified onboarding.

Keywords: Intellectual Capital, Social Capital, MSME, Modified Onboarding MSME

BAFE072:
**INTELLECTUAL CAPITAL FOR IMPROVING THE PERFORMANCE
OF PUBLIC LISTED STATE-OWNED ENTERPRISES
IN THE DIGITAL SOCIETY ERA**

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Abstract

The shift from the industrial revolution 4.0 to the era of Digital Society 5.0 requires companies to develop strategies to optimize their resources. One way to optimize company resources is by developing intellectual capital. Intellectual capital is needed to improve the performance and competitiveness of the company, especially in the era of Digital Society 5.0, including Go Public SOEs companies which consist of various sectors that play an important role in Indonesia's development. Study of intellectual capital development in SOEs Go Public companies in entering the era of Digital Society 5.0 is still limited. This study aims to fill this gap. The data used is secondary data on the Indonesia Stock Exchange and analyzed quantitatively. Results show that intellectual capital has a significant and positive effect on company performance. This means companies must pay attention to intellectual capital in the era of digital society 5.0. The element of intellectual capital that has the greatest influence based on this research is human capital, while the element of structural capital has no significant effect on the company's performance. The results of this study are also in line with the resource-based theory where SOEs must maximize their competitive advantage to compete in the Digital Society 5.0 era. Go Public SOEs must continue to develop and maintain their intellectual capital. In addition, Go Public SOEs should not only acquire, maintain, and strengthen their intellectual capital but also need to make plans to increase the speed and quality of innovation to improve their performance.

Keywords: Intellectual Capital; SOEs Go Public Performance; Digital Society 5.0; Resource-Based Theory.

BAFE074:
**ANALYSIS OF RESEARCH TRENDS IN COSMETIC PRODUCTS
USING R**

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Abstract

Cosmetic products, include make-up such as, lipstick, eye liner, foundation or eye concealer, and any products that are used for cleaning or perfuming the human body parts such as body wash, shampoo or perfume. The markets for cosmetics in general are lucrative, with global beauty market value amounted to about US\$750 billion in 2020. In line with this industry trend, research on cosmetic products are gaining a lot of interest among researchers in the recent times. However, thus far, there is a lack of research that reviews the literature on cosmetic products. To fulfil this gap, this study analyses literature on cosmetic products using bibliometric method, specifically R software. The purpose of this research to determine the trends in cosmetic products literatures. To achieve this objective, the study analysed journal articles in Scopus database that are published from 1955 to 2020. The analysis generates publication trends and main themes of research in cosmetic products, over time. Implications for future research and recommendations for managerial practices are provided.

Keywords: cosmetic products, bibliometric analysis, trends in research, R software

BAFE075:
**SIMILARITY CONFUSION IN FROZEN SILVER CATFISH FILLET
MISLABELLING AND THE IMPACT ON DECISION POSTPONEMENT**

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Abstract

Fish are being mislabelled and passed off as more expensive or even sustainably caught species; as happened in Indonesia. The affordable frozen local silver catfish fillet called 'patin' was labeled as a dory, the expensive wild-caught fish. This study provides empirical evidence enabling similarity confusion conditions for frozen silver catfish fillet mislabeling to lead to negative impacts on misleading future branding for 'patin' the local fish. This study was conducted using an ethnography approach in two big cities, Jakarta and Semarang. We find that consumers are not aware of these mislabelling issues. They do not realize that the product names stated in the packaging label as a dory refers to 'patin'. Lack of awareness and understanding leads to consumer confusion. Surprisingly, however, apparently, it does not result in decision postponement towards frozen local silver catfish fillet repurchase, unlike previous research. It is found that consumers still want to purchase the products in any fish name because the children like it, and they see the value of 'patin' fillet as practical, tasty, and healthy. They like the name because it reminds them of premium dory fish served in restaurants. This finding, however, cannot be used to justify the existence of this bordering illegal misperception. Government and industry association leaders should resolve the ongoing chaos and establish a firm terms' standardization for frozen fish fillet based on local silver catfish as 'patin'. The regulation will encourage local brand building and protect consumers from buying overcharged fish products.

Keywords: Mislabelling, similarity confusion, silver catfish, decision postponement

INTRODUCTION

Mislabelling is a form of fraudulent practice to increase sales by labelling a product incorrectly or misleadingly. Seafood mislabelling is one of the most practised food frauds globally, as much as 8% of seafood products (Luque & Donlan, 2019). Mislabelling is done by deliberately labelling a product that includes overstated, exaggerated, or even wholly incorrect claims. Mislabelling practices harm conservation and sustainability causes, besides obvious consumer damages. (Blanco-Fernandez et al., 2020; Kroetz et al., 2020).

Many previous academic studies on seafood product mislabelling failed to mention silver catfish products, while the silver catfish is the most mislabelled seafood product (Warner et al., 2016). There are 18 distinct labels from around the world given to this species. The most common mislabelling in Indonesia is to label the said local silver catfish as "dory fish", attracting consumers who think of premium dory fish served in restaurants.

People are declaring that the local frozen silver catfish are indistinguishable in taste and texture from the original. However, the original John Dory fish carries a hefty price tag, which is far more expensive than local silver catfish (Nurriddha, 2017). Dory fish in the market is prevalent as fancy meals sold in fancy restaurants, such as Fish and Chips. People in the food and beverage industry exploit such similarities by utilizing the dory fish label to increase the product value, for instance, by bringing affordable fish and chips to the table.

Consumers are most harmed by such labelling fraud since they must pay a premium for a cheap product. Most restaurants in Indonesia avoid mentioning silver catfish even though it being the meal's main ingredient. Pre-packaged frozen fish fillets sold in supermarkets use the dory fish label for 'patin', a local silver catfish fillet. The importance of bringing up the mislabeling topic is due to the potential of local silver catfish to be cultivated and marketed as widely as possible, and promote it as healthy and practical fish products domestically. Such mislabelling will harm the brand-building process in the long term. Through the Ministry of Marine Affairs and Fisheries (MMAF), the Indonesian government focuses on local silver catfish as the prime fish to develop. The labelling fraud, can hamper the fish branding initiatives.

Walsh et al. (2007) revealed that increased consumer confusion causes decision postponement and decreases brand loyalty. They identified three underlying dimensions of the consumer confusion model: similarity confusion, overload confusion, and ambiguity confusion. This study on frozen silver catfish fillet mainly refer to similarity confusion. Walsh et al. (2007) define similarity confusion proneness as "consumers' propensity to think that different products in a product category are similar in vision and function". It has been years since the dory fish name was being utilized for marketing in Indonesia. It is time for industry associations to being complicit, also issued a warning toward the method for being against marketing ethics.

As an effort to promote local silver catfish so they can compete globally, The industry association launched a brand under the name "Indonesian pangasius" in 2018. (Safitri, 2018). It seems to be the right way as many countries worldwide used the Latin name for the fish, pangasius, to label their products. Such a situation creates multiple problems. Adding the confusion of current local fish mislabelling as dory fish, pangasius being introduced as the fish name in the market. In total, there are three different names for the same fish, they are (1) Pangasius sp., (2) Dory Fish, and (3) the well-known name "Ikan Patin" (Bahasa Indonesia for Silver Catfish). Pre-packaged silver catfish are circulating in supermarket outlets and online shops at e-commerce platforms.

In branding, the product or category name opened the door for the consumer to purchase the product. (Kotler & Keller, 2012). Consumers will decide between brands only after understanding the product category to choose the best choice. If a housewife who decides her family menu never heard of the product category name, the family will not hear about it, let alone buy it. All the stakeholders, from producers, industry associations, and lawmakers, need to study local silver catfish fillet marketing. Society needs to be informed that the farmed local silver catfish and not the wild-caught john dory fish dominate the market. If not solved, it could halt the pre-packaged silver catfish fillet brands to expand. The brand must standardize the naming to prevent further confusion in marketing communication and education.

With that background, more research is needed to know the depth of consumers' knowledge on pre-packaged frozen fish fillet labeling. Do consumers aware that the products they have been buying are the local silver catfish and not the original john dory fish? How aware are they of mislabelling, and how does this impact their decision postponement when they realize the fraud? Academic contrubtion of this study include the empirical generalization of Walsh framework (2007), which said the positive relationship between similarity confusion and decision postponement. Results of this study will also guide MMAF and industry associations in finding the solution for local silver catfish branding, particularly brand naming.

LITERATURE REVIEW

Mislabelling

Previous studies have discussed the mislabelling of seafood, including fish. Research conducted by Helyar et al. (2014) found that mislabelling of seafood products occurs due to the increasing consumer demand for them. Mislabelling that happens is the failure of traceability which raises concern about sea conditions. The worries about sea conditions have led to many initiatives addressing potentially destructive fishing practices by preventing illegal, unreported, unregulated (IUU) fish products. One of the many initiatives is requiring catch labels to mention the species name throughout the distribution chain. It is found that mislabelling is usually found on cheaper alternatives.

Reilly (2018) also researched mislabelling that falls under food fraud in the fisheries sector. Fish fraud is when fish are placed illegally in a market to defraud customers, usually for economic

gain. There are several types of fraud in the fish sector, including intentional mislabelling, overglazing, overbreeding, species substitution, and the unreported use of water-binding agents for weight gain. Species substitution is a type of fraud where low-priced species replace high-priced species, usually for economic gain, or conversely, high-priced species are presented with low-priced species to avoid taxes.

Mislabelling also occurs in sushi restaurants across the UK. According to research conducted by Vandamme et al. (2016), labeling practices in British restaurants lag behind those in the research sector. The study investigated the accuracy of seafood labeling in sushi bars and restaurants across the UK to screen for samples of tuna, eel, and other products marked as 'white flesh' and found several mislabelling incidents. Consumers are facing choices without knowing the potential of devastating their health, economy, and environment. To this day, the selling of endangered species like tuna and eel continues without providing adequate information to consumers.

Mislabelling also occurs in organic food products, which causes consumer confusion. Monier-Dilhan (2018) researched the impact of food labels on consumers' willingness to buy organic food. In the context of competition between national brands and private brands through public quality labels, willingness to pay for a quality label is reduced when combined with other labels on the same product. The results show that leading national brands have better value than store brands. A study done by Kuchler et al. (2020) related to natural and organic food labels shows that consumers experience confusion regarding natural and organic claims.

One of the concerning mislabelling practices in Indonesia is labeling dory fish on local silver catfish products, either in packaged frozen fillets or ready-made food in restaurants and cafes. Warner et al. (2016) report that catfish is the most mislabelled fish meat globally because it is cheap, easy to cultivate, and quickly processed to resemble other fish meat (Warner et al., 2016). Even though various government institutions and industry associations have called for stopping mislabelling catfish, many producers continue to do so.

Maulana et al. (2019) found that fish fillet product is one of the solutions in reducing the complexity consumers face in consuming fish meat. Fish fillets can overcome 2 (two) main complexities in consuming fish meat, namely (1) the difficulty of processing fish meat that smells fishy and has a lot of small bones, and (2) the difficulty of keeping fish meat fresh.

Consumer Confusion

Walsh et al. (2007) identified three dimensions underlying the consumer confusion model: similarity confusion, overload confusion, and ambiguity confusion. The research found that consumer confusion is tied tightly to decision postponement and decreased brand loyalty. Similarity confusion is the tendency of consumers to think that various products in a product category are similar both visually and functionally. At the same time, a series of very similar stimuli can also cause similarity confusion (Walsh et al., 2007). An example of this set of stimuli is an advertisement, a store environment, or a product. Similarity confusion implicitly states that consumers heavily rely on visuals to brands.

Wobker et al. (2015) study related to consumer confusion in retail products found that the increasing number of products and services caused shopping to become more complex. The rising complexity confuses customers and influences their purchase behaviour, which may cause them not to buy the product—indicating that product quality certification and consultation with sellers are needed to assist consumers' decision-making.

One way for customers to prevent confusion is by social networks. A study in technology, namely consumer confusion in the computer market, was conducted by Leek & Kun (2006). According to said study, the increasing complexity of technology becomes the leading cause of confusion for customers. The most common solution that customers rely on is through words of mouth from friends or relatives who have interacted with the product.

A study conducted by Tjiptono (2014) highlighted another customer confusion in the technology market. It shows that young consumers experience confusion due to the influence of word of mouth, trust, and consumer satisfaction with the smartphone market. The study examined three

dimensions of consumer confusion, namely similarity, overload, and ambiguity confusion. Each of these dimensions has different implications for consumer behaviour. Such as the availability of an excessive amount of smartphone brands which causes overload confusion. Due to the increasing amount of information, customers tend to ignore a lot of information, leading to a purchasing decision based on incomplete information.

Long before that, Mayer et al. (1993) conducted a study related to health products and found a lack of consistency in the terms used. More consumers purchase a product because of the claims on the packaging. When a food product has a healthy label, consumers expect the product to have all the healthy attributes. Zečević' & Koklič (2019) study related to food health indicates that consumers' purchase of healthy food depends on motivation, knowledge, and opportunities. In addition, a lot of information is not in line with consumers' understanding of what constitutes a healthy attribute.

Decision Postponement

The ideal condition that brands desire to create is when their consumers have a smooth sailing customer journey from the beginning until the end without hesitation in choosing the brand. However, oftentimes when making a purchase, consumers are faced with doubts that create decision postponement. One of the reasons is that when deciding to make a purchase, consumers are often faced with various options and considerations that cause consumers not to make a decision instantly (Walsh et al., 2007; Walsh & Mitchell, 2010).

The consumer product purchase process undergoes several stages. It is often based on many considerations, especially regarding a high-involvement product, which creates a high risk when a wrong decision is made. However, the interesting thing is, even in low-involvement product purchases, decision-making in purchasing a product is still affected by particular considerations that still may lead to decision postponement (Alarabi & Grönblad, 2012; Singh & Sarma, 2018).

Decision postponement has become a critical problem because it happens before making a decision to buy a particular product. When faced with decision postponement, the consumer could repeat the purchasing process from the beginning, which may lead to product or brand replacement (Amirhoseini et al., 2018). Apart from that, decision postponement also could create a negative impact on that brand. When consumers cannot determine what product they would buy, consumer loyalty towards that brand has declined (Iqbal et al., 2014; Alarabi & Grönblad, 2012; Singh & Sarma, 2018).

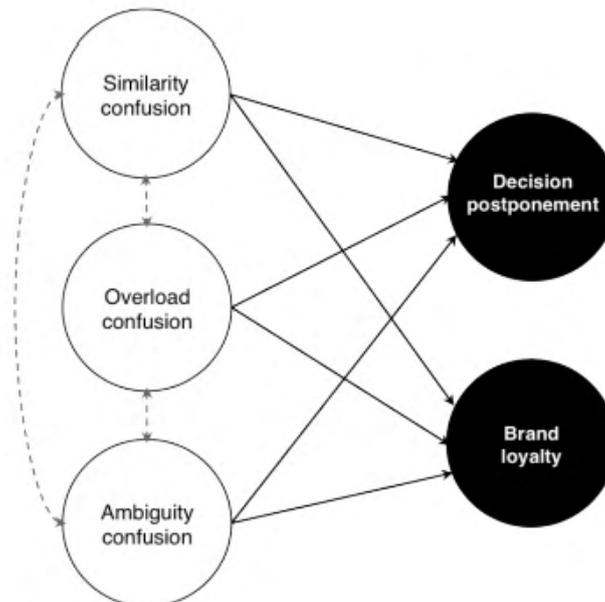


Figure 1. The Consumer Confusion Proneness model (Walsh et al., 2007)

RESEARCH METHODOLOGY

This study implements ethnographic research, which is a qualitative approach to understand how far consumers' perception and knowledge regarding mislabelling packaged Local Silver Catfish

fillet has gotten. According to Brewer (2000), ethnography in the qualitative study aims to find out various complex problems in mislabelling the fish mentioned above, which concerns the attitude, behaviour, values, culture, and lifestyle of consumers. Ethnographic research could help in describing the stories to identify daily life problems (Coulon, 1995; Lassiter, 2005).

This research is conducted in two big cities, which are Jakarta and Semarang. Jakarta was chosen due to its significant fish consumption, and in general, the people are used to fillet fish, also considering the large amount of various silver catfish menu that is available in restaurants. Meanwhile, Semarang is chosen as a comparison due to its low fish consumption and curiosity in how far consumers' perception towards the naming of the fish.

There are several series of qualitative techniques that are used in this research. Some include netnography, literature review, observation, focus group discussion, and in-depth interview. Netnography, according to Kozinets (2015), provides guidelines to further observe discussions in online communities, online forums, and everything that could be recorded in computer-mediated communications. Netnography creates the possibility of gathering important data or information that could be done through effective communication with the available online communities and is often not too obtrusive. Netnographic techniques that are done in this research include online forums, websites, and social media platforms that aim to give an in-depth depiction regarding consumer perspective as described in Table 1. The types of online communities that are the object of the research are the culinary community and the fishery community.

Table 1. Online resources for netnography

List of online forums	List of online news platforms	List of websites	List of social media
Kaskus.co.id	Detik.com	Zomato.com	Twitter
Fishyforum.com	Klikdokter.com	Pergikuliner.com	YouTube
Femaledaily.com	Kumparan.com	Tripadvisor.com	
	Tempo.co	Cookpad.com	
	Tirto.id		

In this study, the research subject is the consumers and has an enormous scope, including outlet vendors and restaurant waiters. To gain additional insights regarding the consumer perspective on their knowledge of fish frozen fillet products, observation is done in some shopping locations, including traditional markets, supermarkets, outlets, and restaurants, which are the go-to spots for upper-middle-class citizens. During observation, unstructured interviews are conducted with (a) 26 outlet vendors (16 in Jakarta, 10 in Semarang), (b) 8 restaurant waiters (5 in Jakarta and 3 in Semarang), also (c) 36 Consumers (24 in Jakarta and 12 in Semarang). Table 2 describes the outlet names, both in Jakarta and in Semarang.

This research focuses on the middle upper-income classes because they are considered to have been consuming silver catfish often enough in restaurants or cafés in menus. Therefore, they have enough experience. Due to the apparent research scope, the purposive sampling method is chosen by picking predetermined respondents with specific characteristics. The picked respondents for the in-depth interview and focus group discussion are stay-at-home or working mothers aged 25-45 years old who have kids in elementary school of age 7-12 years old. Moreover, the respondent focuses on children's health and regards fish as one of the family's protein sources. The in-depth interview was conducted with 15 respondents consisting of 8 stay-at-home mothers in Jakarta and 7 working mothers. Respondents' profiles are included in Table 3.

Table 2. Observation locations

Outlet	Jakarta	Semarang
Market	Pasar Bendungan Hilir, Pasar PSPT Tebet, Pasar Slipi	Pasar Karang Ayu, Pasar Bulu, Pasar Peterongan, Pasar Widosari
Supermarket	Food Hall Senayan City, Lotte Ratu Plaza, Farmers Market Mall Kelapa Gading, Hero PIM 1, Food Hall Lippo Mall Puri, Foodmart Primo Lippo Mall Puri, Hypermart Gajah Mada Plaza, Carefour Kota Kasablanka	Ada Swalayan, Giant Karang Ayu, Siliwangi, Galael Supermarket Sultan Transmart Telogorejo, Carefour DP Mal
Fresh Outlet	Prima Freshmart Benhil, Prima Freshmarket Kelapa Gading, Prima Freshmarket Slipi, Amen Fresh Frozen Food	Prima Freshmart Pasar Bulu, Prima Freshmart Lempersari
Out of home	Madam Delima Cikini, Beatrice Quarters, Everfresh and Fish Street Kelapa Gading	Sambal Sereh Café, Eden Resto, Kirakira Resto

Table 3. In-depth interview respondents' profiles

Initial/age/profession	Profile
WI (35) – stay-at-home	Choose fish as a source of family protein. Strive to make children liking eat fish by providing easy-to-eat fish such as dory fillets or tilapia
SO (29) – stay-at-home	Almost every day provides a menu of snapper/tilapia /carp fillets for his two children. The husband does not like eating catfish because it is soggy and wet. Catfish are more often cooked whole using soup.
ME (34) – stay-at-home	She has a pond for carp, gold, catfish, and catfish in her house. However, rarely cook catfish because her family member does not like it. In a week, usually cooked fish 2-3 times and was assisted by the housemaid.
WN (39) – stay-at-home	Almost cook fish every day. When buying fish, have two children who are often brought to choose the fish type to cook—usually tilapia, catfish, and dory fillets.
SU (43) – stay-at-home	It was used to prepare a menu of fish dishes 2-3 times a week. Fish that are more often served are whole and steaks.
NW (44) – stay-at-home	Have one child and often buy frozen fish fillets, dori, and catfish fillets for deep-fried menus. Assuming catfish and dori are different fish.
LF (42) – stay-at-home	Have three children and prefer to buy fresh fish at the market; never buy frozen fish fillets.
ST (40) – stay-at-home	Have four children and are used to eating fresh fish instead of frozen. Quite often provide whole catfish menu at home such as fillet o fish, fish & chips.
TR (28) – working	She has been making her two children consume salmon fillet or snapper since childhood. In a week, usually serves the fish menu 3-4 times
AN (28) – working	It is customary to cook fish 2-3 times per week. Often invites families to eat fish outside the home to look for menu variations that are not usually consumed at home.
KA (36) – working	Usually cook fish such as snapper, milkfish, pomfret 3-4 times per week. Serves whole fish and fillets. She did not like eating catfish because it is fishy and it is mushy.
DY (38) – working	In a week, usually cook fish 2-3 times, depending on the child's request. The cooked fish is salmon fillet and snapper. For her, she prefers whole fish.
MO (35) – working	She actively persuades her two children to eat fish. Provides whole fish (milkfish, catfish, carp), steak (tuna) and fillet (snapper).
CH (37) – working	Have two children and used to cook fish 3-4 times a week. Children prefer simple menus such as fried snapper fillet.
BE (33) – working	Cook fish 3-4 times a week in the form of salmon and snapper fillets. She used to cook fish because she had been used to it since she was little.

RESULTS

first part of this result section will elaborate on consumers' awareness regarding the available packaged frozen silver catfish fillet in the market that they recognized and experienced. Next will be the discoveries of insights regarding perception toward the commonalities and the differences between 'patin' the local silver catfish fillet and dory fillet fishes. Lastly will be how aware are the respondents of mislabelling and how far would they postpone buying such products when they know fraud has happened.

Perception towards 'patin', the local silver catfish

Consumers in general already know and recognize the name "patin" fish (which is the local name for silver catfish), especially for consumers who have already been consuming this type of fish from a young age. Local silver catfish is also one of the fish and protein source choices served at home, though not often, and is not the primary choice compared to other fish or protein sources. Some consumers that do not know much about local silver catfish think that its shape is similar to the general catfish and is a freshwater fish.

"What I know is that patin is similar to general catfish, and the meat texture is soft and also seems to crumble easily. I have heard that patin bone marrow has high protein. I rarely eat patin because my family at home doesn't really like it." (SO)

"At a glance, it looks like that catfish which has a mustache. The shape of the mouth is exactly like that. The difference is that patin is slightly larger than the general catfish. That means both are freshwater fishes, I guess." (TR)

The local silver catfish varies from small to medium, soft and savory in flavor. Consumers find processing local silver catfish to be easy. A few varieties in cooking local silver catfish include baked, wrapped with banana leaves, or made into soup. Even so, despite the convenient cooking, several consumers claim the meat to be too mushy and rich in fat content, making it easily broken if not correctly handled. Besides, the local silver catfish that the consumers know of has a distinct characteristic of smelling like mud and fish, making consumers reluctant to process and consume it. This smell of dirt can be taken into personal consideration, especially if fed to children since they are usually more sensitive to the fish's smell.

"Patin can be smelly. There's the smell of mud. (my) Children are sensitive to smells like that, and they do not like it. It is like the catfish that you know from ponds, may make you feel gross." (W1)

"It was delicious when I tried to have patin soup at the hospital, but when I have to cook it own my own it grossed me out because the fish is filled full, oily, especially on the tail" (CH)

"I usually cook it into soup or grilled; with spices the meat is even tastier. Sometimes fried fish can also be delicious" (ME)

When prompted with question about 'patin' fish, it is immediately identified as fish sold intact and alive or fresh which are commonly found in traditional markets or vegetable vendors with relatively low prices. It is seldom for them to find fresh 'patin' sold in supermarkets or outlets. In the cooking process, 'patin' is often treated as whole-fish with the reason being the savouriness of the fish can be tasted better. This results in 'patin' cuisines being rich in spices, such as steamed 'patin', the traditional soup made from this fish, or, grilled 'patin' and 'patin' full with pickled yellow spices and many more.

"There are a lot of patin fish at markets or vegetable vendors. They are usually sold intact and later cooked (by mothers). How to cook it, mostly made into soup, I guess" (AN)

"The most common ones in markets are intact patin fish, some of them are also sold alive. They are very cheap. The processing done is usually cooked with tumeric and other spices, well that's what I see for most of the time" (BE)

"It is easiest to find patin at markets or vegetable vendors because they are very cheap. I rarely see fresh patin at supermarkets. It's probably the class difference, perhaps supermarkets are for the more expensive fishes, I don't know" (WI)

"It's far tastier if patin is cook intact. Why is it? it's just more savoury. The flavours come out more, especially if made into soup" (ME)

Apart from household consumption, restaurants or stalls that provide local silver catfish menus are usually Indonesian restaurants, or ones specialising in serving varieties of fish menus. Therefore, it is shown that the local silver catfish is distinguished by traditional cuisines, dominated by spices, with great variations. The word 'patin' itself directs the minds of consumers to an intact silver catfish, which is why they do not know that the same fish exists in fillet form, stored in packages and sold at supermarkets as frozen fish fillet. Generally, consumers are not aware that local silver catfish fillets are labelled as 'dory fillet'. At least, even if consumers are aware of local silver catfish fillets, they are procured by filleting fresh, intact local silver catfish commonly found in traditional markets, not in the frozen form.

Regarding those dory vs patin, consumers still regard them as different fishes. Parents and children have different preference in eating 'patin'. Parents and elders prefer the savoury and spices-filled intact local silver catfish, while children love the floury cut fish fillets, completed with different types of modern sauces.

"For me, I prefer the intact ones, cut into big pieces for soup for instance, it is more satisfying to eat. The flavours come out better and blend well with spices. Yet, my children prefer to be practical, which is why they prefer deep-fried, teriyaki, or sweet-sour ones so they can directly eat without having to go through the hassle of removing the thorns" (WI)

According to the discoveries in Jakarta and Semarang, it is evident that the penetration of patin consumption at home is still limited. The low consumption is due to a few factors; among them are supply challenges, where most of these fish are more available in intact forms. Besides, consumers have expressed that cooking menus for silver catfish fillet tend to be monotonous, usually deep-fried, unlike intact silver catfish, which can be cooked with various spices. Once it is made into a fillet, the price is considered higher because there are undoubtedly fewer parts to consume and thus, household consumption is required to buy more compared to intact local silver catfish. There is also a perception that the consumption of silver catfish fillet may lose the sensation of enjoying entire fish preferred, especially by adults. There are also concerns regarding the nutritional value that may be reduced compared to fresh, intact silver catfish. In addition, there's a fear of suspicion that bleach or dangerous preservatives are used for the fillets to stay fresh for a more extended period.

"(I) have never seen any patin fillets sold; at least if people would like fillets, they would tell the seller to have the fish filleted. Else, the ones on the stock would of course be the intact local silver catfish. So as far as I have known you have to request the fish to be filleted if you wish to eat a fresh one" (WN)

"I think we kind of lost the sensation of eating fish with the fillet ones, because that is the art of eating fish right there. It is satisfying when you take out and separate the thorns. That's why I prefer intact local silver catfish than fillets" (WI)

Perception towards 'patin', the local silver catfish

Consumers generally have known and become familiar with dory, but when asked about the form of a real dory fish, many still cannot imagine the natural format. The reason for this uncertainty would be because a lot of the dory fish mentioned have been processed into fillets and are not intact. For that reason, in the eyes of consumers, dory identified with packaged frozen fillet fish commonly sold at supermarkets or outlets.

"I've never seen what dory fish looks like because all this time I've consumed fish fillet. just because you asked about dory fish, I searched for pictures of it. The shape looks different; this fish has thin meat, different from dory fish fillet I saw from pictures which seems thicker." (DY)

"I'm honestly not exactly sure what real dory fish looks like. The fish I see in supermarkets are always filleted. Maybe it's similar to gindara fish?" (WI)

"Dory meat is soft, thick, and white in colour. Those sold in supermarkets often have pink lines. Although, I have never seen what a real dory fish looks like." (KA)

Similar to local silver catfish, dory fish also has a soft texture and a savoury flavor. However, according to consumers, it has a bigger size, and the meat is a clean white, not yellowish like local silver catfish. Moreover, there is no fishy smell or mud because it is a seawater fish, especially in a fillet. The fillet shape makes cooking become practical. Hence, consumers do not have to bother with weeding or cleaning the fish meat. The processing time can be shorter. In addition, because it is frozen and packaged, consumers only need to clean it using water, season it or cover it with flour, and then fry it to cook it.

"Dory fish meat is thick and layered. I find it quite solid when eating; it's different to regular fish, which has thinner meat." (BE)

"The meat is white, soft; it also tastes delicious and savoury when cooked. I cook dory once in a while because it's easy to process when it's already in fillet form. I need to batter and fry it." (TR)

"I usually deep fry dory in flour because it's practical. It's practical because it's already in the form of a fish fillet when we buy it, so it's not complicated. The texture of the meat is soft, savoury, and my kids love it. Although, I don't cook dory for the house all too often." (AN)

Dory fish itself is often found in consumption outside the home. Dory has its hype because it is processed into dory fish and chips found in many places. Currently, there exist many trendy dory dishes such as salted egg dory, dory sandwich, pan-fried dory, dory barbecue, dory grill, dory with carbonara sauce, and others served by fancy restaurants or cafés. Dory becomes a fish synonymous with international food menus and comes off as a rather expensive seawater fish. It is processed in the form of a fillet. No whole dory menu has been found, unlike local silver catfish.

"I know dory from restaurant menus. I've eaten at Fish and Co, and it has a dory menu. The meat is thick, and because it was fried with breadcrumbs, it's crispy on the outside." (CH)

"Dory fish had lots of hype during the fish and chips era. Now there are many contemporary trendy menus in restaurants or cafés." (WI)

The word 'dory' in consumers' minds is associated with white fish fillets in packages. Although currently, many frozen fillet fish products circulating in supermarket outlets are labeled pangasius and local silver catfish fillets. Consumers remain somewhat unaware of this change and still consider the fillet they usually see as dory fish. This lack of awareness is due to the internalization of the term 'dory' being equated to fish fillets.

Confusion of 'patin' vs dory

The terms 'patin' vs dory still often cause confusion and misunderstandings among the public. The fact that those two fishes are the same is not widely known. Fundamentally, they assume that 'patin' the local silver catfish and dory sold in the market are two different types of fish. This assumption exists because these products are found in different locations. Some are predominantly found in traditional markets, while others are in supermarkets in a processed and packaged frozen form. Additionally, the perception of the origin of the fish - from freshwater and seawater - causes consumers' perceptions of the two types of fish to differ.

According to consumers, 'patin' is synonymous with the whole fish, whose shape is similar to catfish. This local silver catfish is processed as an entire fish and are often found in traditional restaurants or those which specifically provide fish dishes. Consequently, local silver catfish menus are usually in the form of soup or grilled, which remind consumers of typical Indonesian dishes.

Consumers view dory as a different fish than 'patin'. When talking about fish fillets, they will immediately think of dory, while talking about whole-fish processing, it is associated with 'patin'. The different association makes consumers assume that the frozen patin fillet and the frozen dory are not the same.

According to the consumers, both 'patin' and dory have soft and savoury meat. Though, 'patin' tend to have a muddy scent, mushy, crumbly, and fatty meat. In contrast, dory tends to be not fishy and has denser meat. According to the merchants and shopkeepers that sell this type of fishes, 'patin' meat has a slight yellow tint; meanwhile, dory meat is entirely white with a soft texture. Consumers also consider 'patin' as freshwater fish, while dory is a saltwater fish. Hence, a product labeled "Dory" has a higher retail price than 'patin', even if both are the same fish species. Dory is also associated with a fancy international dish served in restaurants and cafés.

"I think patin and dory are different. Dory has dense and thick meat. While 'patin' are mushy and more fishy compared to dory" (KA)

"Based on the taste and texture, both of them are soft. However, I think they are different. Dory is a saltwater fish while patin is a freshwater fish" (SO)

Dory gained its popularity when fish and chips started to gain the spotlight. Multiple varieties of dory fillet-based dishes also started to pop up. This occurrence shows that different processing method for dory and 'patin' is caused by different societal perception. Consumers perceive 'patin' as regular freshwater fish, while dory is perceived as expensive and exclusive, saltwater fish. That perception made dory meat processed in a more sophisticated, up-to-date, and diverse way.

The usage of 'patin' and dory terms are still unclear within Indonesian society. It is apparent from inconsistent terms usage for labelling frozen fish fillet products in supermarkets or stores. The inconsistent use of labels by the producers confuses the consumers. Currently, several brands/products starting using 'patin' in the packaged frozen fish fillet label. However, this study still encounter many brands that use dory fillet to label their product.

Frozen fish fillets can be a preferable option for consumers because they are considered practical and easy to cook. The product does not require the consumer to clean the fish further. To prepare the fish, consumers only need to wash and season it, hence saving preparation time. Fillet products are easier to eat because the consumers do not need to pick out the bones, unlike fresh whole fish. Despite the product's practicality, consumption of frozen fish products is still low due to concern over preservatives and the perception that frozen food has lower nutrients than fresh fish.

A new question arises when the term dory is changed with 'patin' fillet in some outlets. Currently, they perceive dory and 'patin' as different products. Consumers feel they are tricked by the producers because products labeled as dory are significantly more expensive than 'patin', the local silver catfish available in markets.

"If dory is indeed patin, it means we as consumers are being tricked. Dory fillets are expensive, while patin that available in markets are cheap" (WI)

"Patin do seem to have a lower value. As a consumer, if 'patin' and dory are the same things, then we are being lied to. Though it could be profitable for business, it is not fair for consumer like us." (CH)

Some consumers still think frozen 'patin' and dory fillet are not the same products due to their different properties. Those consumers judge it based on the thickness of meat, taste, and smell. Dory does not have a fishy smell, unlike 'patin' fish. However, they do concede that there are similarities in texture. Many consumers are not aware yet of the label change in fish fillet products. Consumers still believe that the product they purchased is labeled as dory, not 'patin' Fillet.

"I did not realize that the name has changed, I thought it is still dory. Moreover, I do not know that there is a frozen fillet form of 'patin' fish. I only know the whole 'patin' fish or cutted 'patin' fish fillet they sell in the local traditional market." (AN)

“Is this a frozen patin fillet? I am not familiar with it, I only know the fresh whole silver catfish or the one that has been cut up in the traditional market.” (KA)

The majority of the shopkeepers that sell frozen fish still assume that dory and ‘patin’ fish fillet are different products. According to them, the ‘patin’ fillet has a slight yellow tint, unlike the dory fillet. Dory fillets are also softer than ‘patin’ fillet. Based on their day-to-day experience, consumers also only look for dory fillet, not ‘patin’ fillet, because consumer want to mirror the dory menu they bought in restaurant. Misperception related to ‘patin’ and dory is still happens frequently. The misperception propagates not only amongst customers but producers, sellers, merchants, or even fish outlets. The primary reason is that there is little to no effort in denominating between whole or fillet fish.

Confusion over fish terms' utilization is profoundly prominent in the labelling of frozen fish products. Some use the term frozen ‘patin’ fillet, and frozen dory fillet. These labels' confusion is observed through various products available in supermarkets or outlets that utilize different terms. This phenomenon, in turn, influence customers' and sellers' point of view that assume that ‘patin’ the local silver catfish, dory, and pangasius are three different fish species. This assumption is inaccurate – because actually, these three fish are the same except its designation. Here is the summary of varying perceptions between the three used terms concerning the fish that can be seen in Table 4

Table 4. Summary of different perceptions

Indicator	Patin/local silver catfish	Dory
General perception	Whole fish, fresh	Fillet
Fish shape	Whole fish	Not confirmed, similar to gindara fish
Produce	Whole fish	Fillet, deep-fry
Out of home consumption	Indonesian cuisine, Indonesian restaurants, or fish-based restaurants	International cuisine, fancy restaurants or cafe
Marketplace	Market, supermarket	Supermarket, outlet
Price	Cheap	Pretty expensive
Types	Fresh-water fish	Seawater fish
Similarities	Smooth and savoury texture	Smooth and savoury texture
Differences	Muddy, mushy, yellowish, fatty, easily crumble	Relatively more solid, thick, white-coloured

From the elaboration above, it can be seen how there is gross oversight in fish terms utilization, from ‘patin’ and dory. Generally, customers assume those two terms refer to different fish; each possesses other characterizations resulting in different existing preconceptions. Customers have not realized that dory fish sold in the marketplace is the local silver catfish.

The most critical point of this research is that it yields customers' confusion about fish terms – how local silver catfish and dory refer to the same fish. In this case, customers do not recognize the similarities or differences between the two terms referring to the fish. Nevertheless, the existing customers' confusion may grow to a more significant problem that hinders the branding of local silver catfish products.

4.4. Decision Postponement

The most striking point from the study is the customers' reaction upon discovering additional information related to the fish and its terms' designation. In particular, they are informed that the frozen fillet fish that they assumed as dory fish is not a seawater fish but rather ‘patin’, the local silver catfish cultivated in the embankment. Initially, most respondents are surprised, and a tad provoked. They feel betrayed and not happy. Surprisingly, however, apparently, it does not result in decision postponement towards frozen fish fillet repurchase, unlike previous research by Walsh, et al. (2007).

When examined further, they stated that the fish and its subsequent processing might influence the product price so it justified the higher price. They prioritize the same product and its value instead, especially in the mind of cooking for their child's favourite meal. The wrong name does not deter them from stopping buying the product. It is found that customers still want to purchase the products in any fish name because the family, especially children like it, and they see the value of the

frozen fish fillet as practical, tasty, and healthy. They like dory name because it reminds them of premium dory fish served in restaurants.

Another notable detail is how the packaged frozen local silver catfish fillet is a favourite for children and teenagers since it is easier to prepare and, therefore, consume, which is very beneficial. Unfortunately, finite alternatives of food variations understood by homemade cooks resulting in monotonous cuisine. Not only that, 'patin' (aka dory) eaten in restaurants should have been more affordable given the increasing price due to exploiting dory fish labels. If the confusion over the fish label has been resolved, fish prices in restaurants may become more affordable, and many more families would afford to consume fish. In a greater perspective, it would develop the cultivation and marketing of local silver catfish in Indonesia.

To rebrand the dory into 'patin' is the next step for the business stakeholders. Socialization is required to correct the assumption that the fish they bought is not the dory, but 'patin', the local silver catfish – even though they refer to the same fish. Such mindset has been internalized for too long and is quite attached to society, which needs to be resolved. However, the result of this study provides evidence that changing the label poses little to no risk since the awareness of frozen fish fillet mislabelling is still minimal. The firm policy would accelerate adapting universalized terms for the same fish, according to ethical marketing strategies.

CONCLUSION AND DISCUSSION

This study provides clear findings that consumers are not aware of mislabeling in frozen fillet fish products, and consumers do not realize that the product names stated in the packaging label as a dory refers to 'patin'. This study implements the consumer confusion paradigm developed by Walsh et al. (2007). However, different from what Walsh et al. (2007) conceptualized, this study does not discover that consumer's similarity confusion correlates with a decision postponement.

The study discovered that consumers still want to purchase the frozen fish fillet products in any name because the family, especially children, likes it, and they see the value of the frozen silver catfish fillet as practical, tasty, and healthy. They like the dory name because it reminds them of premium dory fish served in restaurants. They did not expect that the frozen fish fillet that he thought was dory turned out to be Indonesian local silver catfish, 'patin'. Clarification of mislabeling is highly appreciated and considered a relief, as they are uncomfortable when misled.

However, the finding that the influence on decision postponement is not significant cannot be used to justify the existence of this bordering illegal misperception. Government and catfish association leaders should fix the ongoing chaos and establish a firm terms' standardization, use its local name, 'patin', as the local silver catfish. The result findings can be used as solid evidence to support the decision to rebrand frozen local silver catfish fillet in Indonesia, starting from discontinuing the product as 'dory'.

The research results yield an essential insight that may be helpful for related business players and policy-makers. Notably, naming local silver catfish as dory fish for domestic consumers confuses. Resolving confusion should raise consumers' awareness towards 'patin', and compared to John Dory, to let them decide. In the long run, we should result in greater engagement with the Indonesian silver catfish brand and products' purchasing.

To rebrand the dory into 'patin' is the next step for the business stakeholders. Socialization is required to correct the assumption that the fish they bought is not the dory, but 'patin', the local silver catfish – even though they refer to the same fish. Such mindset has been internalized for too long and is quite attached to society, which needs to be resolved. However, the result of this study provides evidence that changing the label poses little to no risk since the awareness of frozen fish fillet mislabelling is still minimal. The firm policy would accelerate adapting universalized terms for the same fish, according to ethical marketing strategies. More collaborative studies between researchers, industry players, and policy-makers are needed to understand further mislabeling impacts and design interventions to minimize mislabeling.

Although the finding of this study yields a new outlook in seeing the relationship between consumer confusion and decision postponement from different angles, future research is still required.

More marketing ethnographic studies and deeper analysis will help all know how culture and fish consumption habits influence consumers' perspectives on ongoing mislabelling practices.

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BAFE077:
**FACTORS OF RISING E-COMMERCE DURING COVID-19 PANDEMIC
IN MALAYSIA**

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Abstract

COVID-19 has impacted business operation globally and it has forced most businesses to be more innovatively in managing and sustaining their business performance. Engaging it via technology is the way forward for the business to stay relevant in the marketplace. This research framework emphasizes on the measurement of three factors; cost saving, consumer online shopping behavior and government movement control order (MCO) towards the emergence of E-commerce in Malaysia during Covid-19 pandemic. Theory of planned behavior (TPB) as well as Diffusion of Innovation Theory (DOI) were adopted as framework for this research. Through this study, convenience sampling method were used as 400 survey questionnaires have been collected from sellers in Shopee, one of the online shopping platforms in Malaysia. It revealed that there is positive correlation of cost savings, consumer online shopping behavior and government MCO restriction towards the rising of E-commerce with consumer online shopping behavior being the most significant one. SMEs could possibly consider to convert their business to online version specifically when they encounter challenges in terms of their operating costs and lower revenues.

Keywords: E-commerce, SMEs, consumer online shopping behavior, government movement control order restriction and cost saving.

INTRODUCTION

Companies commonly conducting their business operations physically whereby focused on the revenues obtained from physical stores and the management of it are bounded within the office. However, since COVID-19 infected humans globally, all these were changed entirely. Due to COVID-19 high tendency in spreading the virus swiftly, companies had updated their strategies by strengthening it through employing technology so that they could sustain their performance to still be significant in the industry. Thus far, there are already numbers of businesses adopting E-Commerce in handling their sales to the customers. Nevertheless, this trend seems thriving over the time since COVID-19 cases increased, especially in Malaysia.

According to Kurtz (2016), E-Commerce is a new way forward where businesses using online application and internet networking and it is part of E-Business. It is more on transferring the operations and business activities by adopting ICT infrastructure-where it still encompassed transfer of goods and services from business to customers and often included the communication regarding such activities. It highlighted few advantages to businesses when they moved into e-business. Among E-Commerce advantages are automated supply chain management, reliable customers' support and personalized services to the customers (Byron, Green and Doyle, 2004). It is also been implied that, in dealing with e-Commerce, consumer purchasing behaviour is rather crucial for the business in sustaining their performance. Focusing on customers' satisfaction, would ease the business to understand the areas that need further improvement.

In Malaysia, E-Commerce impacted the spending mode of the nations. Specifically, during the surge of COVID-19 cases, most businesses are forced to shut down their physical stores due to the government instruction to implement movement control order (MCO). Government MCO was enforced due to the needs to control the virus infection cases. Before the government MCO implemented,

customers used to walk-in to the business physical stores to do their spending (about 66.3% in contrast to online purchases). This could be reasoned of consumers' doubt on the safety and stability of using E-Commerce as their options to perform online transactions (Omar C. M., 2014). However, since then, online business seems to growth over the time as most business had moved to E-Commerce. They started to realised that if they don't transform into E-Commerce, business will have lower earnings or no revenue at all (Yeoh, 2020). This will lead to financial challenges in the future if business only depending on physical store. In addition to that, following the report shared by The Malaysian Reserve (2019), Malaysia's E-commerce industry had generated total of RM 12.787 billion which is quite encouraging for the small medium enterprise (SME) to commence their business via online especially during the MCO period as it brings enormous users alongside with reasonable required operating expenses.

As the way business conducting their transactions has changed during this pandemic, similarly to the consumers as they utilise their mobile devices to perform online purchases and wait for the orders to be delivered to their doorstep (Sarkar and Das, 2017). Most people are unwillingly to leave the house to purchased items they needed and as pre-caution measure, online transaction will be an alternative to it (Ahmad,2020). With this E-commerce, it is likewise allowed businesses to understand the consumers' behaviour and competently carrying out appropriate strategies to mitigate their economic downturn during this challenging time.

Consequently, this study aims to highlight on the transformation of the business to survive during the hit of this global pandemic. Three major factors that been identified as part of the study are cost savings, consumer online shopping behaviour and government MCO to be proposed to have the connections to the rising of E-Commerce in Malaysia during the COVID-19 pandemic. In addition to that, this research will provide some great insights on the factors affecting E-Commerce from the business perspective. By adopting E-Commerce into their business model, businesses are believed to be able to overcome the challenges when similar situation happened.

LITERATURE REVIEW

This section shows the review of theory of planned behaviour (TPB) and diffusion of innovation (DOI) theory as the groundwork to construct the framework model. It also highlighted generally on the TPB components as well as DOI components, specifically consumer online shopping behaviour, cost saving and government MCO and its relationship which lead to the rise of E-commerce in Malaysia.

E-commerce and COVID-19 Pandemic in Malaysia

COVID-19 had become global issue since its first case encountered in China and started to spread in other countries. Malaysia, without exception reported it first case during end of January 2020 and from March 2020, where the infected cases surged since then. With the rising cases of COVID-19 globally, it somehow had shifted the way social life and economic climate had been managed thus far.

According to WHO (2020), difficulty in breathing, fever and cough are among common symptoms for those infected by this virus. In some other cases, it can be fatal due to severity of it. In effort to curb the surging infected cases, Malaysia government had announced movement control order (MCO). All social activities including sports, educational and religious are closed down due to this MCO implementation. Furthermore, only essentials sectors are allowed to be operated during this MCO which caused others industries experiencing difficulties in maintain their level of outcomes. It left the nations with increasing numbers of jobless people and high inflation (Assessment, 2020). Business in this situation need to be more creative and innovative to strategize their business operation, by which engaging it via technologies.

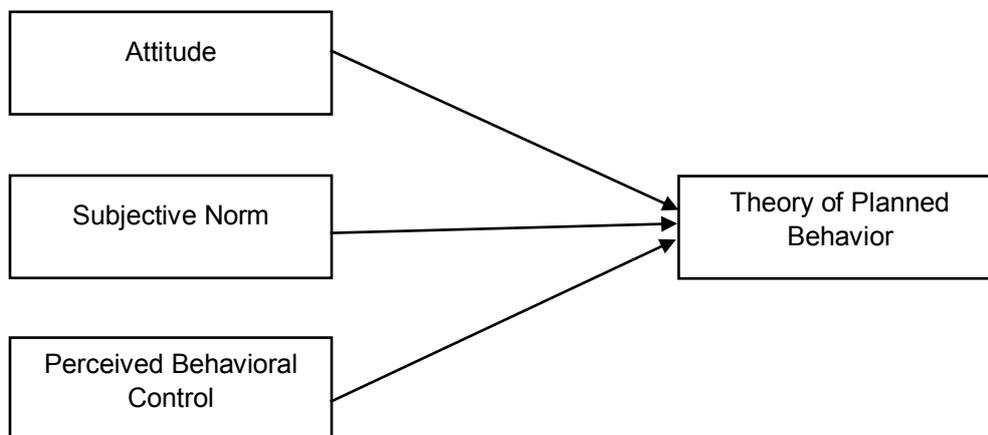
E-Commerce allows businesses to conduct their trading transactions and accessibility of information via online. It also offers some flexibility to the consumers to perform their buying transactions and obtained further details related to the transactions at any point of time (Išoraitė and Miniutienė, 2018). In favour of businesses, they may offer their products and services through the online platforms which there is no need for hassles such as stores in other country or special premises.

Malaysia is said to be the among the highest and fast in adopting E-Commerce in ASEAN region. The growth of E-Commerce is quite swift, specifically during the COVID-19 cases surging. Small medium enterprise (SME) were strongly encouraged to appropriately include E-Commerce that resulted benefits to them. For instance, the government supports in terms of technological advancement programs, and establishment of E-Commerce policies that would grant the business's opportunity to growth internationally (Hashim, 2006). Relatively, the initial cost to start conventional business is much higher compared to having it online and cashflow challenges might be the main concern by SMEs during this COVID-19 pandemic (Gupta et. al. 2018; Kamel, 2020). Adopting E-Commerce in managing their business would lessen the costs to be incurred in the business.

Review of theoretical model

This research employed Theory of Planned Behaviour (TPB) and Diffusion of Innovation Theory (DOI).

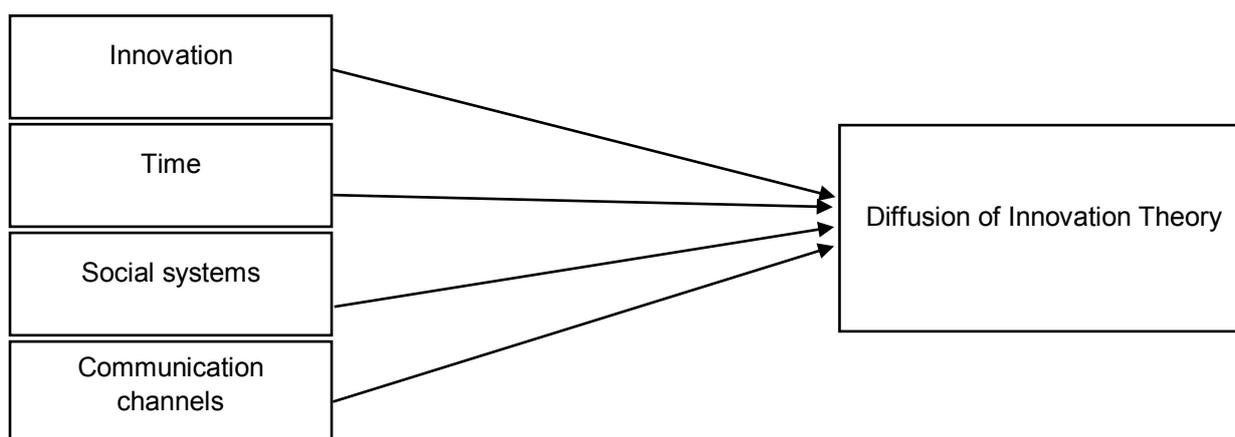
Figure 1: Components of Theory of Planned Behaviour (TPB)



(Source: Created for research)

Figure 1 above shows the components of Theory of planned behaviour (TPB) that was proposed by Azjen and Fishbein (1980). It highlighted that behaviour is determined by intentions, attitudes and subjective norms. It also elaborated that an individual may engage in specific behaviour when their perceived behaviour control and intention is higher as well as when they have more positive attitude and subjective norms (Ajzen, 1991). In this TPB model, its emphasized that subjective norms were influenced by normative beliefs however control beliefs stimulate behavioural control. In the context of this research, in order to prompt consumer in engaging with information and performing the online transactions, it is rather important to perceive favourable attitude. This resulted to efficacy of online transactions and reducing the disadvantages in adopting E-Commerce. Subjective norms refer to a consumer's normative belief that their shopping behaviour is acknowledged and encouraged by their circle of influence. TPB encompassed a direct connection among perceived behavioural regulations and behavioural accomplishment. The ease with which one can obtain the resources and opportunities required to sustain a behaviour is reflected in one's perception of control (Ajzen, 1991). Because the buyer has the skills in dealing with such irrational actions, buyers' perception of control would ease to gain the information. Lastly, control would favourably impacted product purchase since consumers wouldn't feel worry of opportunistic behaviour from an online retailer.

Figure 2: Components of Diffusion of Innovation Theory (DOI)



(Source: Created for research)

DOI is the method whereby an invention is disseminated among members of a social system over time through specific channels (Roger, 2003). There are five factors of Roger's theory and the study related to E-Commerce implementation. Relative advantage is a significant factor of innovation adoption. Trialability is the extent to which the invention can be checked, piloted and tweaked. Complexity highlighted on the degree to which an invention is considered to be difficult to comprehend and apply. The degree to which an invention is thought to be consistent with established concepts, norms, and requirements is referred to as compatibility (Roger, 2003). Observability is the degree to which an innovation's results are clear to other potential users and it is having strong connection to its adoption of E-Commerce (Hoffmann et al., 2007)

Figure 2 shows four main elements of Diffusion of Innovation Theory (DOI)-innovation, time, social systems and communication channels.

An individual who finds a notion, activity, or project novel is referred to as an innovator. Newness, singularity, value, benefits and change are all common interpretations of the innovation (Courtright & Smudde, 2009). Relative advantage, trialability, comparability, complexity and observability are five criteria that influence the degree to which creative ideas are implemented (Roger, 2003).

Time relates to originality of an innovation (as measured by relative earliest/latest adoption in the diffusion process) as well as the rate at which an innovation spreads through social network and it is generally ignored in other behavioural science studies (Roger, 2003). It insisted that one of its advantages is the inclusion of time dimension in diffusion study. The innovation process, classification of adopters and adoption rate include time dimension.

Social system is known as a set of interconnected units that work together to solve problems to achieve a common goal (Roger, 2003). Informal group, individuals and associations are examples of members in the social system. When innovation spreads throughout social system, it will influence the social structure in the social system. Furthermore, nature of the social system affects individual innovation. Therefore, the study shows that management team in an organization are responsible for the adoption of E-Commerce by Malaysian SMEs (Hussin H. et al., 2008). Jon et al. (2001) demonstrated the use of diffusion model to implement E-Commerce among SMEs in Malaysia. However, the dissemination of Roger's innovation model and the evaluation of the use of E-Commerce by Malaysia companies and SMEs are still at the developing stage. Based on Hussin H. et al. (2008), Rogers hypothesis was also introduced in this study that all five factors especially relative advantage are closely related to the implementation of E-Commerce by Malaysian SMEs.

Communication can be defined as the exchange of information amongst project members in order to attain a common understanding. Interpersonal channels could be localised or cosmopolitan, whereas mainstream media is virtually entirely cosmopolitan (Roger, 2003). Unlike mass media channels such as TV, radio or newspapers, interpersonal channels allow for two-way interaction between people.

Hypotheses development

Relationship between consumer online shopping behaviour and rising of E-commerce.

Online shopping system is a way where people perform their purchases through online in e-business industry and consumer behaviour related to this online transaction is important. This as a result of its accessibility and tailored to customers' needs. During the country lockdown, consumers behaviour might be affected and shortage of resources might be happening in the marketplace. As consumers depending on E-Commerce platforms in getting their essentials and basic daily needs, consumer behaviour in Malaysia is varied especially during this COVID-19 pandemic. (Meyer, S., 2020; Hamid, 2020; Mittal, 2013). Based on the points highlighted, H₁ is developed.

H₁: There is a significant relationship between consumer online shopping behaviour and rising of E-commerce during COVID-19 in Malaysia.

Relationship between cost saving and rising of E-commerce.

As cost is one of effective factors that caused the booming of E-Commerce, internet presently will be an alternative for the businesses to partially save their operating costs. Consumers could spend conveniently via online as it saves their time. This customer resources of cost had allowed businesses to think forward and transformed their physical stores to online platform that would enhance business's revenues as well as simplified the purchasing process done by customers (Shaheed, 2004). In addition to that, it allows business to save the cost when starting it via online business in comparison of having the business in ordinary way. There would also be lesser risk in contrast to having managing the business via physical stores (Hicks, 2020). Hence, the presented hypotheses suggest that:

H₂: There is a significant relationship between cost saving and rising of E-commerce during COVID-19 in Malaysia.

Relationship of government MCO and rising of E-commerce.

As COVID-19 hit all countries worldwide, movement control order (MCO) was enforced as a strict procedure to cease the virus from spreading further. Restriction of entrance to all foreign traveller and local movement within the country also had been imposed. Despite this regulation, there are few ways that sellers in E-Commerce can succeed during this challenging time. In the study conducted by Vase.ai (2020), 60 percent of the respondents had made more online purchases during this MCO period and big online stores in Malaysia (Mydin and Tesco) acknowledged that Malaysian are engaging more to online shopping since then. Starting from March 2020, the online users had seemed to growth and this essentially effect E-Commerce environment. These online shopping customers experienced accessibility in carrying out their online purchases and may feel safer to continue from their home even after MCO is lifted. It is rather crucial for the customers to perform online shopping with confidence (Jotham, 2020). Based on the points highlighted, H₃ is proposed as follow:

H₃: There is a significant relationship between government MCO and rising E-commerce during COVID-19 in Malaysia.

CONCEPTUAL FRAMEWORK

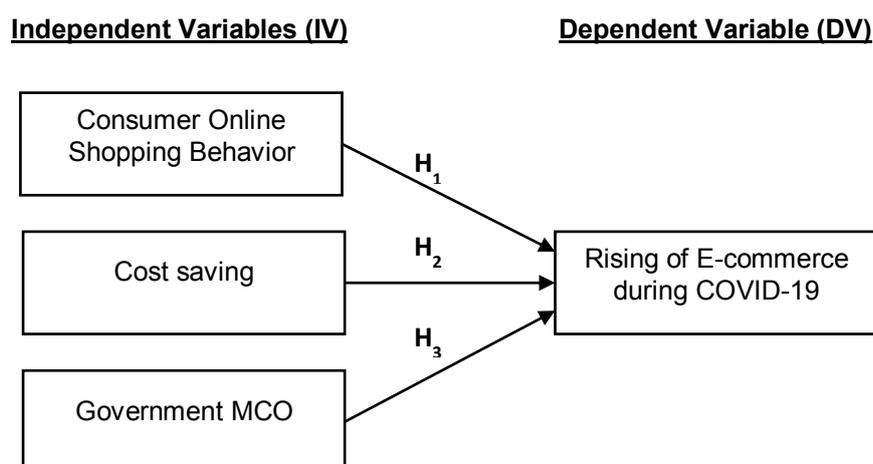


Figure 3: Proposed conceptual framework

RESEARCH METHODOLOGY

Sample and data collection

Self-created questionnaire was distributed to 400 sellers in one of the online shopping platforms in Malaysia, Shopee and convenient sampling method was adopted in this study. The questionnaires were designed on 3 sections; section A (demographic details-as shown in Table 1), whereby section B (dependent variable-consist of 10 questions) and section C (independent variables-consist of 21 questions) are designated on 5-Likert scales format with 5 ranges from 1 (strongly disagree) to 5 (strongly agree). All items included in the questionnaires were adopted from reliable sources of previous studies and adjusted to the situation of E-Commerce during COVID-19 pandemic. Consumer online shopping behaviour is adopted from Rofiq (2010) as well as Muhammad, U.S. and Nasir Uddin, M.D. (2011). For the second independent variables (cost savings of E-Commerce) is adopted from Laith, A., Hameed, A., and Yasir, A., (2012), Wu, M., Gide, E., Jewell, R., and Zhang L., (2016), as well as Zhuang, Y., and Lederer, A.L. (2003). Finally, the third independent variable-government MCO is from MCMC (2018,) You, Q., Chen, W., and Liu, K. (2014) as well as Isa, K., Shah, J.M., Palpanadan, S.T., and Isa, F. (2020).

Table 1. Demographic profile summary

Demographic variables	Category	Frequency	Percentage (%)
Age	20-29 years old	197	49.3
	30-39 years old	152	38
	40-49 years old	45	11.3
	50 years old and above	6	1.5
Gender	Male	180	45
	Female	220	55
Ethnic group	Chinese	235	58.8
	Malay	108	27
	Indian	51	12.8
	Others	5	1.5
Highest education completed	SPM	81	20.3
	Diploma	132	33
	Bachelor of degree	150	37.5
	Others	37	9.3

Occupation	Retailer	123	30.8
	Officer	93	23.3
	Student	93	23.3
	Others	91	22.8

RESULTS AND DISCUSSION

Cronbach's Coefficient Alpha were used to check the reliability of the data gathered. All the results shown in Table 2 summarise that dependent variable (rising E-commerce during COVID-19) and three independent variables (cost saving, consumer online shopping behaviour and government MCO) are at the acceptable range of reliability. As according to Cronbach (1971), value close to or above 0.7 indicated the data as reliable.

Relevant hypotheses were tested using a series of simple correlation analyses. Table 2 showed the examination of correlation matrix for consumer online shopping behaviour, cost savings as well as government MCO. The results revealed that consumer online shopping behaviour had a significant correlation with rising of E-commerce during COVID-19 in Malaysia ($r = 0.665$, $p < .01$). There is moderate positive correlation between these two, therefore, H1 is supported. Cost savings also had a significant correlation with the dependent variable ($r = 0.642$, $p < .01$), thus supporting H2. Government MCO also showed positive correlation with rising of E-commerce ($r = 0.583$, $p < .01$). Hence, support H3.

Subsequently, multiple regression analysis progressed to determine the strength of all variables that impacts the rising of E-commerce during COVID-19 in Malaysia. The regression analysis results showed that all the three variables- cost savings, government MCO and consumer online shopping behaviour accounted for 52 percent of the variance in the rising of E-commerce, $F = 142.211$, $p < .001$. Further from this regression coefficient revealed that consumer online shopping behaviour ranked the highest to significantly affect the growing in E-commerce during COVID-19 in Malaysia ($\beta = .371$, $t = 7.196$, $p > .001$), followed by cost savings and government MCO.

Table 2. Correlations coefficients for establishing variables' association.

Variables	CB	CS	MCO
AE	.667**	.642**	.583**
Sig. (2 tailed)	0.000	0.000	0.000
Cronbach's α	0.75	0.811	0.787

Note: Correlations are based on N = 400: * $p < .05$, ** $p < .01$

Table 3. ANOVA and model summary statistics.

	R Square	Adjusted R Square	Mean Square	F	Sig.
Regression	0.519	0.515	17.374	142.211	0.000
Residual			0.122		
Total					

	B	SE	β	T	Sig.
(Constant)	0.778	0.16		4.875	0.000
CB	0.369	0.051	0.371	7.196	0.000
CS	0.254	0.05	0.271	5.08	0.000
MCO	0.152	0.045	0.167	3.378	0.001

CONCLUSION AND IMPLICATIONS

The study established that there is significant relationship between consumer behaviour towards the rising of E-Commerce during COVID-19 in Malaysia. Consumers started to depend on E-Commerce platforms to obtained their needs and essentials during this pandemic (Meyer, 2020). Businesses should be more adaptable to consumers' needs and supports as E-Commerce brings

values in promoting business operations. This allows researchers to examine the changes of consumers behaviour amid and post COVID-19 situation.

Additionally, cost savings showed significant relationship towards the rising of E-Commerce during COVID-19 in Malaysia. Sellers associated their operations with online platforms as it is much more cost effective and it scaled down their investment on certain assets (Hicks, 2020). The advantages of cost savings such as lower day-to-day costs, should be utilized by the business when they venture into online platform. This could provide meaningful information for the new entrance of E-Commerce to compare some financial challenges that they might encounter between having physical stores and E-Commerce platforms.

Lastly, government MCO also revealed to have significant relationship towards the rising of E-Commerce during COVID-19 in Malaysia. During the implementation of MCO, most of economic activities are restricted to be conducted from the physical stores. In this situation, it enforced the businesses to maintain their operation via E-Commerce. This brings convenience to the businesses by which it helps them boost up their sales and reaching consumers nationwide (Bernama, 2021). Besides, it allows new business to explore advantages in adopting E-Commerce and promote awareness of E-Commerce fluidity.

This research is essentials for Malaysia to achieve better understanding on the factors that affect the rising of E-Commerce during the pandemic time. Hence, businesses could refer to this when adopting E-Commerce as part of their strategic management.

LIMITATION OF THE STUDY AND FUTURE DIRECTION

Future research could be directed to other factors than what have been discussed in this study. Researchers are strongly encouraged to proceed their future study on factors that could affect the emergence of E-commerce such as accessibility of consumer data, consumer are reachable within another states and delivery service provided by online shopping platform. In addition to that, different outcomes may be achievable if this study is based on the populations in other countries as this only focus specifically to Malaysia.

CONCLUSION

This study has achieved the main objective in exploring 3 independent variables that will impact the rising of E-commerce during Covid19 pandemic in Malaysia. The study shown that all independent variables as discussed will affect the growth of E-commerce in Malaysia in a recent time. Consequently, it can be concluded that every research objectives and questions have been achieved and answered. This study also believed in contributing beneficial information and enlighten future researchers to delve into studies related to number of E-commerce surging and the factors affecting it. Finally, it could also bring advantage to SMEs who are facing business challenges like lower revenues amount and high operating costs, through which they can consider to review on these factors to embrace E-commerce.

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BAFE078:
**DIGITAL LITERACY AND LEARNING AMONG BUSINESS
UNDERGRADUATE STUDENTS**

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Abstract

Gone are the days when digital literacy is required on working adults to perform at workplace competently. Today, digital literacy skills are essential and critical to students too. Digital literacy has increasingly become essential as most students stay home for online lessons. Malaysia announced movement control order (MCO) on 16 March 2020 and all schools are closed. All primary, secondary and tertiary students are learning from home with virtual lessons. Only businesses which provides essential services are allowed to operate during the MCO period. Thereafter, primary and secondary school children return to school on and off, depending on the Covid-19 condition. However, tertiary students have been learning through virtual lessons for the past 15 months. Thus, digital literacy are survival skills which are very critical, especially to tertiary students. In accounting student, the importance of digital literacy impacts on accounting learner and determine the possible gap between learners' self-competency and actual knowledge of digital literacy. This study proposes to investigate the digital literacy level of business undergraduate students at universities in Malaysia and examine factors affecting their use of digital technologies for learning business subjects. The findings of this study provides insights to librarians and educators who are involved in the design and conduct of digital literacy workshops.

Keywords: Digital literacy, Business learning

INTRODUCTION

The fourth industrial revolution, also referred as Industrial Revolution 4.0 (IR 4.0) underlying the digital transformation into the business world (Ghobakhloo, 2020). The IR 4.0 was introduced as an industrial digital revolution developed with advanced technology with the connection of internet and the integration with various aspects to form a new intelligent, networked and agile value chain across different industries (Abdullah, Humaidi, & Shahrom, 2020). The digital revolution offers opportunities and sustainability which change the fundamental of human way of living and working (Ghobakhloo, 2020). Thus, due to the high demand of qualified skill and knowledge workforce, educational sector required to make adjustment on how students are trained in order will ensure they are prepared and qualified for the future employment trends (Abdullah, Humaidi, & Shahrom, 2020).

According to Silber-Varod, Eshet-Alkalai and Geri (2019), due to the ever-changing educational technologies, the education instructors and learners are emphasized the need to master various of competencies, collectively term 21st century (21-C) learning skills. Referring to the Malaysia Education Blueprint 2015-2025 (Higher Education), skills and knowledge that are required to thrive in the era of IR 4.0 are digital literacy, critical thinking and problem solving (Malaysia Investment Development Authority, n.d). Therefore, digital literacy is increasingly critical as essential to succeed in any educational discipline or occupation (Murray & Pérez, 2014).

The Covid-19 pandemic outbreak has brought tremendous impacts to the world. Malaysia was one of the countries affected by this pandemic. The first wave of infection forced the government to impose the movement control order (MCO), to partial lockdown the country's socio-economies activities (Azlan et al., 2020). The non-essential sectors including schools and universities were immediately closed, and all academic activities were immediately migrated online. Professor Dr. Abdul Karim Alias, the Director of Centre for Development of Academic Excellence (CDAE) at Universiti Sains Malaysia (USM) mentioned that the rise of the e-learning and online education is no longer an option and it is crucial during this Covid-19 pandemic outbreak (Malaysia Investment Development Authority, n.d). Students are required to continue their studies at home through online learning. The Covid-19 pandemic has shown the reality and the necessity to accelerate and progressively build a "digital first" workforce (Business Today Editorial, 2020). Meanwhile, under Budget 2021, Malaysia Government announced an allocation of RM1 billion funding for reskilling and upskilling the workforce programme (Nik Nurfaqih, 2020).

No doubt, the awareness of IR 4.0 and digital transformation change the employment trend in various sectors, making industries to demand highly for knowledge workers. Workers who not only innovative and critical thinking, but possess the cognitive flexibility to work with human and also machines and robots. The employment trend and the IR development give inevitable impact to the education sector. The rise of Covid-19 as a result, gave the education sector an accelerated and adopted online or e-learning to substitute the traditional physical classroom learning. Therefore, digital literacy is considered an essential skill. The digital literacy could assist students to obtain knowledge more efficiently by utilizing the ICT technology. The Education 4.0 is developed in collaboration between learners and technology to create several innovation to serve the need for IR 4.0 (Astuti, Lestari & Bhakti, 2019). According to Shariman and Razak (2012), without the digital skills, students are unable to cope with the diverse ICT mode to access valuable information to fulfil academic need and later for employment purposes. However, students required more productive in utilize the resource wisely and in enriching ways rather than merely access digital content and resources. In this study, we examine the intention learner use technology in accounting study, the importance of digital literacy that impact on accounting learner and determine the possible gap between learners' self-competency of digital literacy and learning among business undergraduate students.

LITERATURE REVIEW

Digital Literacy

An individual who uses digital technology in his daily life, which includes using mobile phone to check email or using the search engine to find the answer to a question. However, it cannot be concluded that the individual is digitally literate as the term is wider than this aspect. According to Eshet (2002), digital literacy is defined as persons' possess complex, reasoning, psycho-motor, and emotional skills in order to work competently in digital contexts, instead of merely using the software or digital devices. Martin (2005) defined, "digital literacy as the awareness, attitude and ability of individuals to appropriately use digital tools and facilities to identify, access, manage, integrate, evaluate, analyse and synthesize digital resources, construct new knowledge, create media expressions, and communicate with others, in the context of specific life situations, in order to enable constructive social action; and to reflect upon this process" (pp. 135–136). Jones-Kavalier and Flannigan (2006) define digital literacy as an individual's ability to execute jobs effectively in a digital environment.

Meanwhile Digital Literacy High-Level Expert Group (2008) stated that digital literacy represents as a skill acquisition process because digital literacy is crucial for attaining digital ability, the confident and critical use of the information and communication technology for the purpose of communication, education, work and leisure. Similar to Ng (2012), digital literacy is defined as mixture of literacies related with the application of digital technologies. Individual who uses the subset of the electronic technology, such as, software and devices for social, leisure and education activities. As for Son (2017), digital literacy is defined as "the ability to use digital technologies at an adequate level for creation, communication, collaboration, and information search and evaluation in a digital society. It involves the development of knowledge and skills for using digital devices and tools for specific purposes" (pp. 78-79).

Digital Literacy and Business Learning

Business students with greater digital literacy have greater advantage in terms of employability upon graduation (Skoyles, Bullock, & Neville, 2019). As such, this leads to universities equipping its students with greater digital literacy skills, apart from essential soft skills, as these skills are valued by employers on top of good academic performance. However, digital literacy is not merely about business students' daily interaction with digital technologies, such as Microsoft Excel. As explained by Murray and Pérez (2014), digital literacy also refers to obtaining deeper skills and knowledge in managing, creating, collaborating tasks and analysing critically on contents through digital applications.

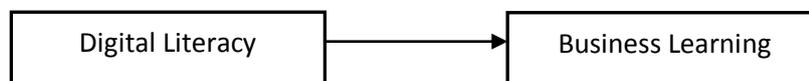
A study conducted by Nelson, Courier and Joseph (2010) in United States shows digital literacy is not just about providing students with one-credit-hour software applications course to improve students' computer application literacy. In order for the digital literacy to have greater impact and relevancy, digital literacy has to be embedded in subject-knowledge courses. According to Olszewski & Crompton (2020), students who are exposed with technologies are better equipped with necessary skills and approaches for their future working life. Digital literacy benefits students of many disciplines, such as science, mathematics, social studies, art as well as, business. However, it is those whom have the competency to make best use of technology would benefit from digital literacy (Nelson et al., 2010; Olszewski & Crompton, 2020).

As commented by Bawack & Kala Kamdjoug (2020), students with information seeking behavior highly affects the information use behavior. The information use behavior, in turn, strongly affects the students' academic performance and ability to collaborate with others. However, without the support of reliable digital information sources, these students' learning experience and academic performance would be adversely affected. This shows the importance of having reliable digital information sources to refer to. However, the access to reliable international academic databases may not always be easily available to all students, especially in several universities in developing countries (Bawack & Kala Kamdjoug, 2020).

On the other hand, most researches on digital literacy focus on the use of technology, rather than the use of the information it conveys. Students ought to be furnished by universities, with relevant skills and capabilities which allows them to seek reliable sources of digital information and use them effectively (Bawack & Kala Kamdjoug, 2020). After all, it is not the technology itself which improves the students' academic performance. Instead, it is the information use behavior which improves communication and collaboration between students which improves their academic performances. But, students' ability to plan effectively in searching and managing the vast information available online are two critical aspects of digital literacy which could not be neglected (Greene, Yu, & Copeland, 2014).

CONCEPTUAL FRAMEWORK

Figure 1: Digital Literacy and Business Learning



RESEARCH METHODOLOGY

The target population for this proposed study will be the business undergraduate students from local universities. Sampling frame is not available as the list of business undergraduate is private and confidential information to universities. In this proposed study, non-probability sampling method will be employed as sampling frame cannot be determined. Purposive sampling will be used as it helps to concentrate on people with desired characteristics which is relevant in this proposed study (Etikan, Musa & Alkassim, 2016). According to Sekaran (2003), sample size of 384 would be deemed sufficient for population more than 1 million. Thus, the data for this study will be collected by distributing 500 self-administered online survey questionnaires to target respondents, the questionnaire is consisting of five (5) parts: Part 1 – Background; Part 2 – Individual self-rating of

computing and digital skill; Part 3- Questions related to the use of digital technologies; Part 4 - Digital literacy test; and Part 5 – Factors affecting the use of digital technologies for business learning and personal views of the use of digital devices. Descriptive analysis will also be performed on the collected data.

CONCLUSION

The information about how business learners could obtain information via technologies is important for effective technologies diffusions for business learning. Such insights are particularly important to the operators in the networked media content industry for them to be able to design targeted technological communication and trainings to reach the business learners effectively. This include skills to perform information search and evaluation; creating meaningful materials and resources, effective communication in digital network, able to share ideas, resources and work with other via digital network, and awareness of safety in digital engagement. Understanding current level of digital literacy is fundamental for regulators to develop policies to supports technological interventions, such as, trainings and awareness campaign to enhance business learners' digital literacy in the respective dimensions as discovered in this study. The extent of gap discovered provide insights on the needs by policymakers to design targeted awareness campaign to minimize such gap, so that business learners are aware of their digital literacy deficiency and recognizes the needs to enhance such literacy. Besides, this study will benefit the librarians, as well as educators, who are involved in the conduct and planning of digital literacy programmes or workshops. Since employers' value these digital skills in graduates, the universities and graduates would benefit in greater employability. In turn, higher competency workforce would also benefit the country with better innovation, growth and economy.

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BAFE084:
**EMPLOYEE PSYCHOLOGICAL WELLBEING AND COVID-19 IN
MALAYSIAN PRIVATE HIGHER EDUCATION INSTITUTIONS: A
CONCEPTUAL FRAMEWORK**

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Abstract

The present era of COVID-19 has shaken the world at the individual and the organizational level. This deadly virus has a serious impact observed in the immediate and long term on every individual every corner. The most important factor that must be needed as a tool to stabilize the position of entities is employee wellbeing, as international basic principle for labors (ILO, 1984) also stated that, 'workers should be provided safe and healthy environment to perform their duties'. To highlight this serious notion, this conceptual paper aims to present the propositions by explaining different factors and their relationships through the lens of self-determination theory, empowerment theory. Through the mediating effect of empowering leadership, this study helps to explain the links between perceived organizational support, perceived family support, and person-supervisor fit on psychological well-being. We believe that enabling leadership is required to attain employee psychological well-being throughout COVID-19. This research adds to the body of knowledge about the employee well-being and COVID-19, as well as making many contributions to the literature review. To the best of our knowledge, this issue to discuss the various antecedents of empowering leadership among employees, such as perceived organizational support, family support, and person-supervisor fit, to improve employee psychological well-being during COVID-19.

Keywords: COVID-19; Psychological Well-being; Perceived Organizational Support; Perceived Family Support; Person-Supervisor Fit, Leadership Empowerment.

"If health is the essence of your brand, it all starts with taking the health of your workforce very seriously." Marnix Eikenboom, Business President, Danone

1. INTRODUCTION

Psychological (or mental health) refers to the health of one's emotions, behaviors, and social abilities. These include social issues such as the tendency to experience negative emotions in social situations, especially new workplace situations, or fear of working with new people. OSH Act (1970) is the law for the national for Occupational Safety and Health is established to protect the safety, health, and well-being of working people and to protect others from safety or health hazards related to the activities of working people. Most of the industries recently facing the occupational health and safety disaster which has an impact from personal, to national and international level in the world. ILO and OSH have provided measurements and strategies to prevent, control, reduce or eliminate occupational hazards and risks in every organization. According to ILO (1984) all workers have rights. The workers, employers, government, must ensure that these rights fulfilled and seek to establish within the organizations. All should have to maintain a good working condition more specifically. Furthermore, organizations should set human dignity on top priority and must provide the real opportunities for individuals experiences. Safety and healthy working condition which should be incline with the welfare of the workers.

COVID-19, a novel coronavirus, was widely transmitted over the world in early 2020, and the World Health Organization declared it a pandemic on 11th March 2020. The virus initially appeared in China and is nowadays one of the world's most serious health dangers (Restubog et al., 2020). In fact, since the start of the pandemic, it has already caused various emotional and practical issues faced by everyone, including disorientation, panic, great melancholy, fear of death, and increased anxiety (Adib Farhan, 2020). The governments have resorted to the lockdown because of the COVID-19 epidemic. COVID-19 social isolation (lockdown) measures were imposed mandatory in Malaysia on 19th March 2020. Except in very few circumstances, family members were not allowed to leave their homes. COVID-19 has undeniable results for millions of people's health outcomes, financial, physical, and mental well-being (Corbera et al., 2020).

Work from home in Malaysia is gaining momentum recently when the Department of Health (MOH) issued advice to the Movement Control Order (MCO) 2020 under the Infectious Diseases Prevention and Control Act 1988 and 1967 Police Act includes restrictions on all employees without services. Many have been denied access to worksites to avoid excessive contact with people (Mat et al., 2020). During the COVID-19 epidemic, the workforce and work ethic dramatically changed and continuously increased (Montenovo et al., 2020). In addition, to avoid the spread of COVID-19, organizations had begun advising their employees to work from home, which was considered practical and achievable under the circumstances. Therefore, the performance of work from home and how it will affect the employee, organization, and the business environment is prior and important to understand (Ali et al., 2020).

According to a survey by (Pirzadeh and Lingard, 2021), more than half of the organizations had more than 80% of home-based workers during the emergency of the COVID-19 epidemic and this rate has remained consistent over time. As a result of the millions of workers required to work from home in response to COVID-19, the latest remote work styles are enabled by communication through technological advancement. Workers from home, though, must have deal with the psychological stress of isolation, the physical challenges of new workplaces, commitments to organizational tasks by increasing childcare, maintaining homeschooling obligations, and concerns about elderly friends, family members who have lost their immune system (Behar-Zusman et al., 2020). Employers need to be aware of and manage employee fatigue and the levels of stress caused by the pressure to perform during an epidemic. Although the researchers (Yu et al., 2021; Restubog et al., 2020 and Knock et al., 2021) have studied about the mental wellbeing and COVID-19 in several contexts but this study aims to identify in-depth effects of COVID-19 on employee well-being within the private institutions (HEIs) in Malaysia to find the recommendations by focusing on the following, namely person-supervisor-fit, family support, organizational support, and psychological wellbeing.

According to the list updated by the Ministry of Education, Malaysia in (September 2019), there are twenty public universities, forty-seven private universities, twenty-four university colleges, and ten foreign university campus branches of (HEI) in Malaysia. While examining the statistics it can be observed that private sector institutions are contributing more to the higher education of Malaysia. Unfortunately, the psychological well-being of employees remained mostly ignored in many private sectors, institutions, hospitals, companies, and SMEs (CBC et al., 2014). Mental health and employment in HEIs require a great deal of attention. Land reform and rapid advances have increased the demand for qualified workers, resulting in increased employment (Ratanasiripong et al., 2016). Because mental health is frequently tied to, and linked to, workplace or job satisfaction, more research into employee mental health, particularly in private sector institutions, is needed (Kock et al., 2021). It's worth noting that few studies have investigated the effects of visible organizational support, tangible family support, personal-manager equality (Agarwal, 2021) and empowering leadership on psychologists' well-being is important (Piñeiro-Chousa et al., 2020).

Employee psychological well-being is often overlooked in the face of COVID-19 challenges in modern business and service industries, particularly in private sector firms. Even though the private sector is the largest contributor to the economy, but employee's wellbeing is completely ignored. This study focuses on the well-being of private university personnel as well as individual employee performance. Furthermore, this study proposed the theoretically identified factors, i.e., perceived organizational support, perceived family support, person-supervisor fit along with the empowering leadership positively improves the employees' well-being in private universities of Malaysia. Within a couple of years, only a few researchers discussed above have investigated the impact of COVID-19 and wellbeing in academia. These research papers follow the contextual analysis of the literature

review to propose the conceptual framework for fostering the well-being among the employees of private HEIs during COVID-19. The finding of the research proposed that organizational support, family support, person-supervisor fit have a positive effect on wellbeing if the empowering leadership is successfully developed. The results provide that management should be emphasized on employees and assist and empower them to achieve their goals. If the well-being of the employees should be on the priority, it ultimately improves the universities ranking.

Since December 2019, millions of people have been affected worldwide due to the deadly disease of COVID-19. W.H.O. has provided the guidelines, and the governments and health care systems have imposed the lockdown along with social distancing policies and closure of companies, institutions, and businesses to bend the COVID-19 curve downward till the innovation of drug to cure it (Anderson et al., 2020). These policies have primarily affected the work efficiency at offices, employment issues, and those who have jobs alternatively must work and study from home also increased the severe psychological problems (Rudolph et al., 2020). People who work from home face many demands of surroundings to maintain a balance between family and work, specifically if there are children in the home. Thus, this pandemic situation has led to individual work-related and personal problems which have reduced psychological well-being ultimately affect the overall business world. The present research argues that the new challenges of COVID-19 are negatively affecting the mental health of employees, can be resolved by implementing the previous studies' results (Bucker et al., 2014; Sonnetag, 2015). As, workers working from home, along with caring for children and family members at a time. Furthermore, they stay away from their close friends which have reduced their social support which is the most fundamental factor for reducing psychological well-being (Helbesleben, 2006). For example, many employees are faced with working from home as well as caring for children and reducing social contact with close friends and family members. Working from home and away from social norms reduced social support, and that is also one factor against mental health problems (Helbesleben, 2006). Along with this such work, the style has also threatened their health, their loved one's health, loneliness, financial loss, and depression (Brooks et al., 2020). Therefore, this study aimed to examine the relationship between perceived organizational support, person-supervisor-fit, and family support to the psychological well-being through empowering leadership to reduce the emotional fatigue of the workers for high performance even in every situation of a pandemic.

The structure of this research paper is as follows: first, the context of the research through the base of theoretical supportive literature followed by the proposed conceptual model. The discussions, future directions, limitations were presented to conclude the research paper.

2. THEORETICAL FOUNDATION

In this section, researchers found numerous theories, the most important of which are: self-determination theory, social exchange theory, empowerment theory, and motivational theory of lifetime development.

2.1 Self Determination Theory (STD)

The concept of self-determination (autonomy) grew out from the work of psychologists Edward Deci and Richard Ryan, who published *Self-Determination and Intrinsic Motivation* in the subject of *Organisation Behavior* in 1985. This viewpoint challenged the widely held assumption that raising people's morale is the best approach to get them to work. By identifying the psychological relaxation required for good motivation, engagement, and well-being, the concept of commitment provides a comprehensive framework for understanding the motivation of personality and personality.

The SDT highlights the importance of inclusive human relationships and social settings that promote their basic human needs for independence, efficiency, sharing, and partnerships. SDT has recently attracted attention at the neurophysiological level, implying various brain structures and functions (Legault and Inzlicht, 2013). As a result, we have developed a person-supervisor fit, social support mechanism to explain the relationship between organizational support and employee well-being, based on self-determination theory.

Furthermore, according to Atwater and Dionne (2007), "there is a relatively meager study in the relevant literature that focuses on the obviousness of equality as it applies to equality between

leaders and followers" (p. 183). Another motivation theory is the motivational theory of life span development in which people could achieve their developmental goals and used to promote development across different areas and sustain diverse goals of different employees (Heckhausen, 1997; Heckhausen & Schulz, 1993; Heckhausen, Schulz, & Wrosch, 1998 and Schulz & Heckhausen, 1996). People who follow the appropriate and specific goals and make efforts to attain their goals are the most successful for an organization (Kay & Heckhausen, 2015). This idea has consequences for long-term objectives, health, and happiness (Kay & Heckhausen, 2015). However, governance and power differ from sector to sector and even at the individual level, people organize their administrative efforts to benefit the profession's development in unique ways (Shane and Heckhausen (2019). As this study investigates the relationship between employee supervisor fit, empowering leadership, organizational support, and psychological well-being through this theoretical lens. As a result, we believe that the relationship between organizational support and employee well-being can be increased if there is empowering leadership. It could be because they will stay with the organization's management rather than looking for other jobs if an organization resembles their personality. We also investigate the indirect effect of organizational support, person-supervisor fit on psychological well-being through empowering leadership, thus mediating this relationship, and examine the indirect effect of organizational support, person supervisor fit on psychological well-being through empowering leadership, thus mediating this relationship.

2.2 Empowerment Theory

The concept of empowerment is one of the finest strategies to promote people's interests. According to Robbins et al. (1998), empowerment tries to identify personal and political barriers and forces that perpetuate injustice by providing suggestions for social segregation and oppression. Furthermore, empowerment finds successful techniques for eliminating oppression and achieving social justice, as well as providing value-added frameworks for promoting human rights and freedoms. The empowerment vision acknowledges inequity and injustice (Budeli, 2012) and seeks to assist oppressed people. Employees of private institutions have the power to guarantee that their life and work are efficient and socially just. Using empowerment theory to improve staff empowerment and institutional performance is a good idea. Employees will feel more motivated in their organizations if HEIs' leaders or managers empower them, which will help increase the organization's product quality.

3. EMPIRICAL LITERATURE REVIEW AND PROPOSITION DEVELOPMENT

3.1 Psychological Wellbeing

As the prior study has shown, the notion or problem of well-being is frequently disregarded and discussed in detail. Six measures were discussed by most of them (Roscoe, 2009; Hettler 1984; Adams et al. 1997). The perceived wellness survey, which encompasses the following six dimensions of health: physical, emotional, social, mental, intellectual, and spiritual, is one of the most well-known and acknowledged measures for measuring health (Adams et al. 1997). The excessive fragmentation of mental size into emotional, psychological, social, and spiritual components is a critique of this method; nonetheless, these ideas are often misunderstood (Dod et al., 2021).

Hettler's Hexagon model of wellness, on the other hand, has six separate dimensions: physical, emotional, social, intellectual, spiritual, and professional. The concept of well-being is broad and almost lifelike. In their approach, Hooker et al. (2021) looked at eight social ideals. According to Linton et al. (2016), mental well-being (happiness and emotional health), social well-being (social and community relations), psychological well-being, jobs, and work (doing activities for passing time), physical health (physical quality work and performance), and personal circumstances are all aspects of well-being (environmental and economic pressures and concerns). Physical health can be linked to the current state of the human mind, and mental health can be described by cognitive capacities and mental confusion, which are determined by a variety of biological, social, and economic factors. Well-being and happiness are directly linked to social and emotional health because of recognition, social interactions, and employment (WHO 2018; Lee et al., 2018 and Kock et al., 2021).

3.2 Empowering Leadership

Empowering leadership is the process of increasing the performance of members of an organization by recognizing and removing problems that cause inefficiency through organizational

practices or strategic strategies (Conger & Kanungo, 1988). Hard labor alone demonstrates one's capacity to plan and choose the best activities to attain one's objectives and performance. Furthermore, Conger & Kanungo (1988) elaborates that empowerment is a process that affects subordinates' beginnings and moral performance. Empowerment strategies can also motivate subordinates to persevere in resolving any issues that arise in the workplace. According to Thomas and Velthouse (1990), mental capacity has four dimensions of perception i.e., impact, ability, perception, and free choice. Employees' impact on their work is referred to as an impact. People that are empowered believe they have a say in their workplace. Competence refers to a person's ability to perform specific tasks using their knowledge and skills. People that are empowered have faith in their abilities to complete their tasks. Quinn and Spreitzer (1997) claimed that empowered employees would regard their work as a significant part of their lives and would be concerned about their work. Individual responsibility for initiating and planning actions in a manner that is regarded as appropriate is known as self-determination (Dewettinck and Van Ameijde, 2011). It implies that strong people are free to choose how they carry out their duties.

3.3 Perceived Organizational Support

Employee psychological well-being improved when organizational ideals were aligned with employee views, and employees felt supported by the organization (Kristof Brown et al., 2005). Employees like this idea since it makes their work more efficient (Holland, 1985). Employees change their behavior following the emotions evoked by the organization's equality (Chatman, 1989). As a result, the organization should focus on organizational assistance to get the highest workplace performance results (Elfenbein and Reilly, 2007). Several physical and psychological outcomes are discovered to be influenced by organizational support balance (Astakhova, 2016). Job satisfaction, job search, national selection, and behavior are some of the essential results of organizational support equality (Kristof-Brown et al., 2005; Biswas and Bhatnagar, 2013). Employee motivation, strength, effort, persistence, and involvement all benefit from organizational assistance (Hamstra et al., 2019).

3.4 Perceived Family Support

Family support can affect psychological, moral, and physical well-being by providing social support (e.g., loving provision, counseling, and care) as well as a hardship (e.g., conflicts, criticism, overwork). Stress and social support are important components of psychological wellbeing (Pearlin, 1999), which claims that stress can negatively impact mental health while social support can provide protection. Previous research (Thoits, 2010) has shown that stress is harmful to one's health and well-being and that problems with family members are a type of stress. Social support can help you cope with the negative effects of social stress and it can also help to feel better by boosting your self-esteem, which includes positive feedback (Fukukawa et al., 2000). Those who receive support from family members may feel more dignified, and this increased self-esteem can be a source of psychology, fostering optimism, pleasant feelings, and improved mental health (Symister & Friend, 2003). Family members can also control each other's behavior (community control) and provide information and encouragement on healthy behavior and how to effectively use health care services. Whereas stress in relationships can also lead to life-threatening behaviors to cope with stress (Reczek et al., 2014), but stress in relationships can also lead to life-threatening behaviors (Ng & Jeffery, 2003). Good relationships are associated with lower workload (i.e., "dressing and sadness" in the body that accumulates in stress) and good relationships can lead to physical activity that disrupts physical activity, affects the cardiovascular system, and increases the risk of depression (Graham, Christian, & Kiecolt-Glaser, 2006; Kiecolt-Glaser et al., 2001).

3.5 Person-Supervisor Fit

The degree to which a manager's personality, values, and ambitions are comparable to those of a subordinate is referred to as Person-Supervisor (PS) fit. It is characterized as a work ethic that is consistent with their manager's ideas, aims, and personality characteristics (Kristof-Brown et al., 2005). Person-supervisor equality has been recognized as a significant topic to examine while evaluating different types of equality in person-environment fit research (Lauver and Kristof-Brown, 2001). Previous research on manager-subordinate interactions has identified PS fit as a demand fulfillment and demonstrated a link between these attributes and relationship outcomes (Di Marco, 1974). In their meta-analysis, Kristof-Brown et al. (2005) found a P-S connection between four other

variables, i.e., a valid idea not included in the experiment. After that, experts evaluated PS's suitability and investigated its relationship with a variety of outcomes, including organizational commitment (Astakhova, 2015; Zhu et al., 2013), job satisfaction (Marstand et al., 2017; Dhir and Datta, 2021), employee performance (Jackson and Johnson, 2012), empowering leadership (Chuang et al., 2016; Marstand et al., 2017).

3.6 Proposition Development

3.6.1 Organizational Support, Person-Supervisor fit and Psychological well being

Empowerment theory aids in the maintenance of the link between organizational support and psychological well-being. When employees sense the organization's support, it might motivate them to maintain their well-being, according to the proper perspective. That is, the organizational game can also correct the impacts of person-supervisor fit and employee psychological well-being. During COVID-19, we believe that empowering leadership's readiness can mitigate the negative impact of organizational support and person-supervisor fit on psychological health. With high support of the organization, we mean that employees will feel stronger between there and the organizational values as opposed to the job you will feel lower in terms of perceived organizational support. Therefore, high support of the organization as perceived by employees can motivate them to continue their well-being.

Self-determination theory has been studied globally for the past 30 years, and researchers can better understand and explain staff behavior by expanding their expertise, challenging their assumptions, and refining their use of this framework (Ryan and Deci, 2017). The self-determination theory is to understand the role of basic psychological functioning in person supervisor fit particularly the person supervisor relationship and satisfaction of the need for correlation, has been confirmed in studies (Greguras and Diefendorff, 2009; Kovjanic et al., 2012). Each person needs freedom, relationships, and ability. Meeting these criteria allows you to achieve success in terms of performance, growth, and well-being. People see fit and the work environment because of the demand being met. As a result, the following relationship between perceived organizational support, person supervisor fit, and empowering leadership is proposed.

Proposition 1: *Empowering leadership mediates the relationship of perceived organizational support and employee psychological well-being.*

Proposition 2: *Empowering leadership mediates the relationship of person supervisor fit and employee psychological well-being.*

3.6.2 Family support, empowering leadership, and Psychological wellbeing

According to family work studies, attempting to manage several roles' requirements (i.e., work and family) results in decreased resources and higher stress in the form of work and family disputes (Kossek et al., 2011). Employees' ability to take breaks throughout the workday and control when homework is brought home is negatively connected with family-work conflict, in addition to deciding when to start and end work (Badaw & Schieman, 2020). However, due to a depletion of psychological resources and a high level of mental stress, inadequate family communication lowers well-being (Denning et al., 2021). According to Panatik et al. (2011), work-family disputes lead to an increase in anger and resentment, which can lead to mental health issues and lead to employees quitting their jobs, affecting their well-being thus, empowering leadership is required. Family members can also control each other's behavior (community control) and provide information and encouragement on healthy behavior and how to effectively use health care services, but relationship stress can also lead to life-threatening behavior as a way of coping with stress (Cohen, 2004; Thomas et al., 2017), but relationship stress can also lead to life-threatening behavior (Ng & Jeffery, 2003). The following hypothesis has been proposed based on the literature:

Proposition 3: *Empowering leadership mediates the relationship between family support and employee well-being.*

3.6.3 Empowering Leadership and Psychological Wellbeing

Empowering leadership is defined as a style of leadership that shares power among group members and, as a result, boosts everyone's internal motivation (Gyu-Park et al., 2017). Empowering leaders exhibit four sorts of ethics: emphasizing the value of work, allowing involvement in decision-making, instilling trust in the best performance, and resolving any formal difficulties (Ahearne et al., 2005). Conger and Kanungo's (1988) broader concepts of empowerment underpin this behavior-enhancing habit. They demonstrate that employee empowerment is a motivating process rather than a simple one. To be empowered and promoted, a team leader must help team members understand the value of their tasks, include them in decision-making, believe in their potential to achieve high performance, and simplify management regulations and processes (Ahearne et al., 2005).

Previous research has found a link between empowering leadership and a variety of group and organizational outcomes, such as job performance (Vecchio et al., 2010), job satisfaction (Konczak et al., 2000; Vecchio et al., 2010), and ethnic behavior (Yun et al., 2007). Only a few studies have looked at the impact of empowered leadership on occupational psychology (Gyu-Park et al., 2017). As a result, it's critical to comprehend how leaders affect the organization's employees' thinking and behavior. According to Kearney et al. (2019), empowering leadership leads to clarity of objectives in organizations but fails to address worker well-being, whereas Han et al. (2019) investigates leadership empowerment and trust. However, the study mentioned above did not look at the impact of empowered leadership on employee psychological well-being at work.

Proposition 4: *Empowering leadership is strongly and positively associated with psychological well-being.*

The figure 1 is the proposed framework based on the relationships among the factors constructed with the supported literature review for gaining psychological well-being in HEIs during COVID-19.

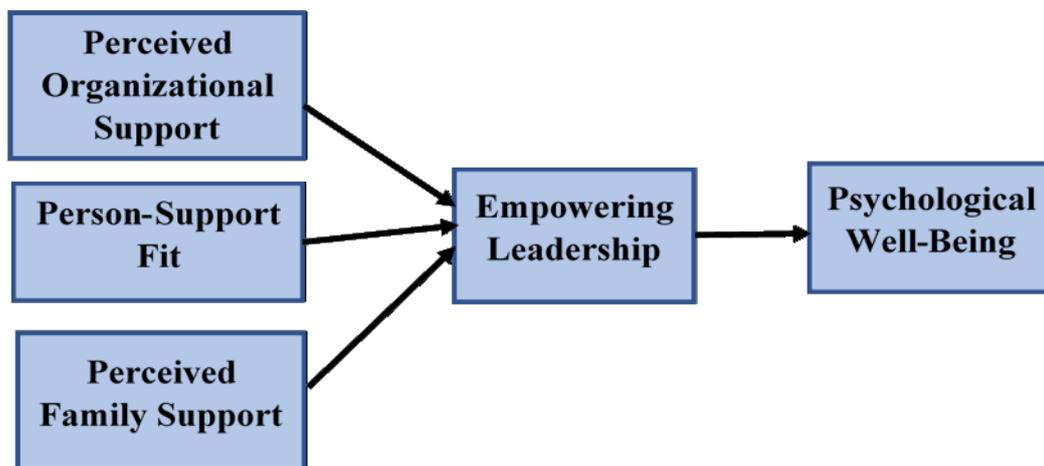


Figure 1: Proposed Conceptual Framework

4. PROPOSED METHODOLOGY

This research paper follows the discourse analysis. In which researchers have studied and presented the different related theories, research work conducted to highlight the effect of COVID-19 on psychological wellbeing of private higher education institutions (HEIs) in Malaysia.

The study will adopt the mixed method to triangulate the results for robust results. The quantitative research self-administered closed ended questionnaire was developed for the respective employees within the private HEIs in Malaysia. This study follows longitudinal survey method. There are more than fifty private universities and their campuses operating in different states. The sample will be selected randomly by considering the states in overall Malaysia.

5. DISCUSSION AND THEORETICAL IMPLICATIONS

The current global epidemic has created an unprecedented situation with widespread health and economic consequences. Thousands of jobs have been lost because of the changing working environment, and women have been hit worse than males. For those who cannot work remotely in the field, particularly white-collar employees, their houses have become their job, school, and rest space. While COVID-19 remains active in society, issues regarding the return to structured office space and the effects on employees develop as the economy begins to reopen with the resumption of normal activities. To avoid implementing legal changes in COVID-19 in their office regions, many organizations will continue to allow work from home for the foreseeable future. The introduction of new technologies has altered the way we work, allowing most employees to work from anywhere (Li et al., 2020). Telecommunications is defined by the International Labor Organization (ILO) as the use of information and communication technology (ICTs) such as cellphones, tablets, laptops, or desktop computers for work outside of the workplace (Belzunegui-Eraso and Erro-Garcés, 2020). Online (technological) performance is linked to several favorable outcomes, including better family-work integration, less weariness, and increased productivity (Caruso, 2019). However, due to extended hours, a lack of clear or clear separation between work and home, and insufficient support from organizations, the fading of physical and organizational borders between work and home negatively impact a person's mental and physical health (Lal et al., 2021). Organizational performance and productivity are influenced by employee psychological well-being. Employees with poor psychological well-being are reported to be less productive, make poor quality judgments, miss work, and make regular reduced contributions to companies at the organizational level (Price and Hooijberg, 1992). The purpose of this theoretical paper was to propose a theoretical framework based on different theories such as social exchange theory, empowerment theory, and self-determination theory to understand the relationship between organizational support, family support, person-supervisor fit, and employee psychological well-being with the workplace (Figure 1). We proposed four correlations in our study. The first hypothesis looked at the link between perceived organizational support and employee psychological well-being because of empowering leadership. Although we have studies measuring the direct relationship of organizational support and wellbeing of the employee, empowering leadership is burring the negative effect of ignorance of organizational support and employee supervisor fit, however, there are numerous studies available on abusive supervision and psychological well-being (job satisfaction, organizational commitment). As previously said, several researchers have conceptualized and measured well-being in various categories such as job satisfaction, work engagement, and various other work-related variables, therefore we believe that this is the first study of its kind during COVID-19. The function of person supervisor fit in explaining the above relationship is offered as the second relationship, with empowered leadership acting as an underlying mechanism to mediate the relationship between organizational support, person supervisor fit, and employee well-being. Previous studies have shown the link between the perception of person supervisor fit and employee workplace outcomes (Colbert, 2004; Krishnan, 2002; Witt, 1998). According to Annelies E.M. van Vianen (2018), "in this world, as people choose what goals they want to pursue, what activities they want to engage in and what relationships that want to build, people question themselves whether environment (such as social context, opportunities, and demands) is suitable enough to provide them what they want to have". Employees analyze the working environment to see if the factors meet their needs and expectations. The third premise focuses on the relationship's perceived family support and employee health, as well as the mediating influence of empowering leadership between them. Our research adds to the body of knowledge on organizational support, empowering leadership, and employee well-being, as well as making many contributions to the field. As previously stated, there is little study on employee wellness in the workplace during COVID-19 and its influence on employee attitudes and behavior. Because our suggested model is exploratory, one of the most important study outcomes will be to operationalize and empirically validate the expected relationships. Previous research has mostly focused on abusive supervision and its detrimental impact on a variety of outcomes, including work satisfaction and organizational commitment. To our knowledge, however, this is the first study to investigate the impacts of organizational terrorism on employee well-being. As a result, the current research adds to the existing body of knowledge on organizational terrorism and offers new perspectives on this growing notion.

6. LIMITATIONS AND FUTURE DIRECTIONS

Our study is limited in some respects, such as this research is conceptual, intending to understand the critical role of employee psychological well-being for the organization deeply. However, we call for the empirical application of this theoretical framework to better understand the topic under study. Furthermore, this study has taken psychological well-being as a general construct, and the literature has also considered psychological well-being as specific work-related factors such as work engagement, job satisfaction, and/or absence of burnout and stress. As, in past definition of well-being of employees was discussed by WHO and ILO law, but still, there are different dimensions under research to be explored further such as sustainable well-being, financial well-being, and many more. Therefore, we believe that well-being as a general construct may raise some issues regarding operational definitions and measurement. Further, future research may help us better understand and conceptualize and measure workplace well-being specifically the pandemic of COVID-19. It can also be expected that these fit elements may allow the employee to experience spillover in a non-work environment such as family. This is because one-third of employee's time is spent in the workplace, and they carry the job along even when they leave the office site (Conrad, 1988). Moreover, organizational support and employee supervisor fit perceptions can vary with time (Kristof-Brown et al., 2005). Each experience at the workplace uniquely influences the fit perception at any given time, which calls for further investigation of fit dimensions and their fluctuations over time (Chuang et al., 2016; Jansen and Kristof-Brown, 2006). In particular, the current economy and related changes in organizations force employees into situations of COVID-19 that they may not have desired at first, which may cause an increase in misfits at work (Nadiv and Cona, 2020). These developments give rise to the questions of whether and when suboptimal fit harms individual well-being and functioning. In practice, however, perfect fit rarely exists, as employees select suboptimal choices and the individual and organizational environment remain subject to the change. Therefore, such spillover can also be considered to examine.

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BAFE086:
**EXPLORING ONLINE BUSINESS CHALLENGES AMID COVID-19
PANDEMIC: A CASE STUDY OF FISHERMAN FAMILY**

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Abstract

The novel coronavirus disease (COVID-19) has compelled many Malaysian businesses to adopt necessary business transformation to mitigate risks in an uncertain environment. This case study investigates the online business challenges amid covid-19 pandemic of a local seafood entrepreneur. It unveils the entrepreneur's resilience to the risks posed by the pandemic innovatively. Qualitative approach was adopted in this case study. The primary data was collected through in-depth interview with the entrepreneur and secondary data was obtained from journal articles, company's Facebook page and newspaper reports. We find that COVID-19 crisis has forced the entrepreneur to transform his tourist business to online seafood selling for his business sustainability. The challenges in all important business aspects and the implication of the challenges have been discussed.

Keywords: Covid 19 Pandemic, Challenges, Online Business, Case Study

INTRODUCTION

The novel coronavirus disease (COVID-19) has posed immense challenges to companies in many distinct sectors. The pandemic has upended many businesses in the world, and business are forced to adopt new strategies to mitigate risks to sustain their competitiveness. Moreover, country's government also intervenes to curb the spread of the virus in the country by imposing stricter rules including lockdown, tight migration controls, work from home, and etc. Such government's newly introduced standard operating procedures have profoundly impacted the operations of most businesses as well as the livelihood of employees. From the economic perspective, the continuous spread of the disease had greatly reduced global GDP growth to a 0.3- to 0.7- for 2020 due to low global demand especially in aviation, tourism, and hospitality industries (Craven, Liu, Mysore, & Wilson, 2020).

In order to curb the spread of the virus in the country, Malaysian government introduced and imposed Movement Control Order (MCO) to restrict the public's movement in the country has exacerbated the Malaysian hotel and hospitality industries. Malaysian hotel industry had lost RM 6 billion in year 2020 during the MCO periods (Saieed, 2021). Moreover, there were 56,299 of hotel employees suffered from this pandemic. 17% of these employees were asked to leave with unpaid leave, while 2041 employees were retrenched (Zubair & Shamsudin, 2021). Furthermore, the tourists' arrivals had declined 78.6 percent to 4.29 million in the first nine months in year 2020 as compared to year 2019. Thus, the tourism revenue declined from RM66.1 billion to RM12.6 billion (a decrease of 80.9 percent) for the same corresponding period. In addition, the number of excursionists fell to approximately 75 percent to 1.73 million in year 2020 as compared to the first nine months in year 2019 (Ganesan, 2021). The same scenario is happening in Perak where the domestic visitors that visit the Perak state plunged 37.4 percent to 13.2 million from year 2019 to year 2020 (Department of Statistics Malaysia, 2021).

Malaysian businesses are forced to transform or adopt new strategies which could be seen in aquaculture industry. Businesses in this sector began to focus online purchasing and marketing. Many fresh seafood sellers are not able to sell at wet markets and deliver fresh fish to wholesale fish markets, restaurants, coffee shops and grocery stalls. E-commerce platform such as Lazada or online social media (e.g. Facebook) becomes their option to reach new customer base. Consequently, fisheries businesses are adjusting to the new norm operation by following the government standard operating procedure. For instance, one of the seafood online sellers, MyFishman recorded an increase sale of 150 percent in the first two weeks during the movement control order period (Harper, 2020).

Besides, the health consciousness among consumers during COVID-19 influence customers to avoid wet markets. They have been turning to live social media to meet their seafood needs. Many Malaysian fish sellers had begun to sell seafood through social media since pandemic and approximately 8000 consumers log in to Facebook every day to see seafood that are put on auction in through Facebook channel (Choong, 2019). The digital fish auction is not a new concept and is commonly practiced in countries such as Taiwan and the United States. Nevertheless, digital fish auction is a new norm for Malaysia and the use of online media is considered a new approach for lower and middle scale fish sellers. The limited information sparks the interest for this research and serves as the foundation to undertake this study to explore the challenges faced by Malaysian fish seller during the COVID-19 pandemic and how well the entrepreneur response to these challenges and sustain along this period of time.

To date, there is still limited case studies conducted to provide holistic views pertaining how Malaysian entrepreneurs divert their businesses by embracing e-commerce to sustain businesses. Thus, we believe this case study is envisaged to be timely and salient to conduct investigations on how COVID-19 and MCO impacted the Malaysian entrepreneurs' seafood businesses to shed light on the scant literature of online seafood in this nation.

METHODOLOGY

This study adopts the qualitative approach (case study) to explore the challenges faced and strategies undertaken by a small-scale entrepreneur in his business ventures during the Covid-19 pandemic. This approach is utilised to reach the research objective in answering "how" and "why" on a phenomenon and in-depth interview via Zoom was conducted with the entrepreneur for this purpose.

The respondent is chosen based on purposive sampling method in this study as this study requires the respondent to meet specific goals and characteristics. The chosen entrepreneur is a small-scale entrepreneur in Perak, Malaysia who embraces online seafood business through social media as his business platform. He is selected as the respondent as he faces the similar changes from traditional and conventional business model to running online business due to COVID-19 pandemic. This study was conducted in the month of August 2021.

The interview session was recorded, and the interview was transcribed into text and tested for accuracy by comparing the information with secondary data sources. Subsequently, the analysis based on different themes was conducted which focus on different data sources such as government records, books, newspaper articles and journal articles.

FROM TOURISM COMPANY TO ONLINE SEAFOOD SELLING

The founder Mr. Khor Weng Kiang had a humble beginning by helping his parents in selling seafood in Selangor, Malaysia. He tend established his tourism company in Sungai Burung, Bagan Datoh, Perak, Malaysia. He started to venture a new business in tourism by establishing a company named Nine Island Agency Sdn. Bhd. when he fell in love with the panoramic scenes of the sea and beaches in the fishing village. Before the pandemic and MCO implementation, his tourism business flourished with abundance of tourists travelling locally and abroad. He brought the tourists for island hoping and showcased the picturesque views of the island. Moreover, Mr. Khor is a considerate and sensitive individual who always cares about the tourists' interests and needs when visiting the islands. Consequently, he often received favourable and applaud compliments from the tourists for his excellent services.

However, his tourism business has been seriously affected when the government imposed MCO nationwide to curb the spread of COVID-19 since 18th March 2020. The number of tourists plummeted due to travel restrictions causing the company to suffer great financial losses. As his tourism business was not getting any better as the government had decided to prolong the MCO, Mr. Khor decided to take a chance by selling seafood through online shop but the initial sales of frozen seafood were not encouraging. Transformation of business hence become inevitable and necessary to sustain his current business. With his ingenious idea, Mr. Khor and his team decided to sell seafood via live streaming on social media like Facebook and Instagram. Fisherman Family Sdn. Bhd was subsequently established to leverage the abundance of fresh seafood produces from many fishing villages nearby. Being a creative individual, Mr. Khor instructed his employees to not merely concentrate on seafood's selling, but also to showcase the picturesque views of the seaside and fishing village to capture the online viewers' attentions to lure them to visit the fishing village one day. Such creative idea on live streaming has exponentially increased the number of their Facebook's followers to more than 100K. With such vast number of followers, the company is able to sell the seafood in enormous quantity (as much as 1000 daily orders) through Facebook Live auctions each time.

ONLINE BUSINESS CHALLENGES AMID COVID-19 PANDEMIC

Financial Challenges

In the beginning, Mr. Khor was optimistic that the pandemic would subside for them to continue their business. However, his optimism was faded when number of COVID-19 cases continue to surge in the country for months that ultimately created heavy financial burden to the company to pay the employees' salaries for almost two thousand per month while there was no income generated from the tourism business. Making things worse, Mr. Khor and his co-founders were also worried whether the company has sufficient fund to pay the bank loans. It was indeed a great challenge for them to start their seafood business due to the monetary losses in the tourism company which had eventually limited their purchasing capacity of much needed equipment or facilities including freezers and packaging machines in order for the seafood company to operate at optimal level which had caused the Fisherman Family Sdn. Bhd. to fail to meet the growing customers' demands of online seafood.

The financial challenges had pulled Mr. Khor and employees together to explore new possibilities to reduce the company's financial burdens for long-term survival. The employees unanimously agree to continuously to exert their support to the company to sail through the turbulence waves that the company needed to endure due to the uncertainty inherits in the current volatile environment.

Marketing Challenges

Conducting sales via live streaming was not an easy task especially for someone who had no prior experience in demonstrating products and simultaneously responding to viewers' requests and comments at once in a live context. As most employees of Fisherman Family Sdn. Bhd had never been exposed themselves to live streaming, it was a challenging experience to most of them when they were expected to make their live shows as lively and interactively as possible with the audiences because they did not have sufficient seafood knowledge which resulted slow customers' response. Consequently, it was difficult and challenging for the company to attract new viewers to consistently follow their live streaming.

The employees therefore decided to put in more efforts in their abilities in live streaming by benchmarking, imitating, and learning from those successful local and oversea social media influencers. Over time, they became confident in demonstrating and promoting the company's products to vast viewer by sharing the names and features of seafood products focusing on the nutritional, cooking, and preserving aspects of the seafood. According to Mr. Khor, more potential customers placed their orders through their live channel when their live streamers had become more interactive with the audiences or viewers.

Fisherman Family has been confronting with other online seafood sellers during pandemic as live streaming become the preferable medium to sell seafood. The stiff competition due to low-cost

strategy implemented by other sellers had pushed the company to be more innovative and creative to win over its competitors. The founder initiates the idea of sharing the local customs, traditional cuisine and promoting fishing villages during the live streaming sessions as the merits to the competitive advantage over its competitors. For example, the company had provided their live stream viewers a virtual visit to fishing villages for them to gain real life fishing experience. The novel idea and strategy had brought up the excitement among the viewers and successfully attracted more local and international viewers who eventually became their loyal fans. Hence, the company could build up a long-term business network and maintain good customer relationships that strengthen its foothold in the online seafood industry.

It is crucial for the Fisherman Family to comprehend their customers' needs to serve them well. The founder believes that the ability of the company to meet the customers' needs and expectations is an up most important thing to secure their loyalty by exhibiting cares. On top of that, the company always be courteous and professional in handling customers' complaints, albeit some complaints were regarded as outrages and unreasonable.

In addition, reliable internet connection guarantees smooth and fair seafood auction process. However, poor internet connection in the fishing village severely delayed customers' bidding process during the live streaming which disappointed most customers. Despite several complaints made to the internet provider company, unfortunately, no actions to rectify the internet speed problem in the village by the company. Perhaps, this is due to the reason that the company was not able to send qualified technicians to the said village because of travelling restrictions during the MCO.

Human Resource Challenges

The company workforce comprises of twenty young fishing villagers. They are given autonomy and freedom to handle their daily tasks with less supervision. It is considered to be an orthodox approach in managing the workforce by allowing them to learn from mistakes made while performing their tasks. Besides, the practice of good customer service is important for online seafood business. The sudden change of customers' preferences during the pandemic (i.e. customers are keener to purchase seafood via online platform) requires the firm to have a fast response to customers and preferable to have 24-hour response service. The workers respond swiftly to any inquiries from customers. Nevertheless, the company's employee shortages will influence the quality of customer service as they are not fast in responding to customers' inquiries, requests, comments, as well as complaints.

There seems to be fewer face-to-face meetings with the employees in the office. The quality of communication between the founder and employees is severely affected amid the pandemic. When MCO is enforced, the travelling of the founder to the office to meet up with the employees to discuss problems faced with the business is impossible which adversely affects the business operations.

The sudden changes created by such an unprecedented and catastrophic situation have severely impacted the company's business operations. As the company is still at the infancy stage, the founder and his partners have some difficulties and are unfamiliar with the new online business environment. Consequently, they decided to utilise social media tools (i.e., WeChat and WhatsApp) as the new communication tool to provide timely advice and to communicate with employees every night for any problems faced in their daily operations. However, the founder commented that the virtual meetings or discussions are lengthy and time-consuming. For example, the founders always need to have a routine meeting to discuss the problems relevant to customers' complaints and to find solutions to the complaints.

In addition, job distribution among employees was non-existent at the initial stage. Employees are expected to handle various jobs in the company ranging from seafood preparation to customer service which has taken a toll on employees' workload that has eventually slowed down the business operations process. In recent, the management decided to hire more than 10 foreign workers to ease the current employees' workload. The senior employees are assigned to supervise and monitor the foreign workers' work tasks (i.e., seafood preparation such as fresh seafood selection, cleaning, and packaging) and live streaming tasks allocation. The live streamers are given the flexibility to organise and conduct their live streaming with anticipation of genuine feedback from the customers to improve

their future performances in the aspects of eloquence, presentation, and interactive skills. The live streamers hence become more confident and adaptive during the live streaming sessions.

Operation Challenges

The company has a pool of seafood suppliers from eight major local Chinese fishing villages in Hilir Perak, Manjung and Changkat Jering, Perak. Recently, it has collaborated with fish merchants from Sabah to fulfill the customer demand as complimentary products to their main products for customers to make one-stop purchasing. The company is intentionally located near the main seafood sources where seafood is accumulated to guarantee freshness of the seafood.

In order to ensure the quality of the seafood to meet the customers' high demand, the company is serious and meticulous about how the seafood is cut, cleaned, rapidly freeze, vacuum packed, and promptly delivered. It usually takes approximately two and a half hours to freeze the fresh seafood after vacuum packaging. The seafood could even last for half a year or two years when seals are still intact. The company expects its Malaysian customers to receive orders on the next day after payments made. The deliveries to Singapore customers are considered to be efficient too as they could receive their orders in two days. In comparison, the company is more efficient than other online sellers in delivering the products to customers locally and abroad with a shorter time.

From the founder's point of view, timing is paramount especially in online business. The founder values and appreciate fast responsiveness in delivery to ensure freshness of the seafood to gain customers' trust with hopes that these customers would convey the company's efficiency in delivery to other potential customers. At initial stage, the company hired a logistic company to deliver the seafood to customers. During MCO, the company was not able to meet the delivery timelines because the existing logistic company was not able to accommodate the growing demands and daily trips restrictions which seriously caused the company to face tight scheduling problem. In order to overcome this problem, the company decided to hire two new logistic companies to expedite the deliveries of seafood to customers despite greater transportation charges incurred.

DISCUSSION AND CONCLUSION

The ability of business to respond to external threats, such as COVID-19, is linked with the notion of resilience. It is equally salient and necessary for businesses to develop an adaptive business model which allows rapid innovation and creation to ensure survival and competitiveness. This case study has meticulously delineated how a Malaysian entrepreneur successfully endured the challenges posed by the pandemic and MCO by transforming his tourism business to online seafood selling. Evidently, leveraging the usefulness of modern communication technology to assist the company to reach a wide range of customers coupled with the creativity and innovativeness of the company's founder who constantly emphasised the importance of creative customer's interactions and prompt response of inquiries had been proven to be fruitful to the company in sustaining its business during upheaval times. The current pandemic has underscored the urgency for businesses to be vigilant by formulating new work arrangements and procedures inside the company to mitigate risk and reduce uncertainty. Thus, effective contingency plans are crucial for any businesses to minimise their vulnerabilities when the external environment becomes unpredictable and chaotic, such as COVID-19. Moreover, a successful entrepreneur is undoubtedly an individual who is creative and resilient to adapt and respond to challenges posed by unforeseen circumstances from any catastrophic environment. Evidently, an entrepreneur must be equipped with a high fighting spirit which is bold enough to concur any difficulties inherited from the upheaval situation.

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BAFE088:
**THE PSYCHOLOGICAL STATE OF UNDERGRADUATE STUDENTS
IN PRIVATE HIGHER LEARNING INSTITUTION DURING COVID-19
CRISIS IN MALAYSIA**

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Abstract

The Coronavirus disease (COVID-19) is an infectious disease that was newly discovered. In Malaysia the first COVID-19 case was reported on the 4th February 2020 and the number of cases grew relatively slowly before an exponential rise in March 2020. Due to the speed rise of COVID-19 infections in Malaysia the government announced Movement Control Order (MCO) to control the deadly virus from spreading further. The prolonging of the MCO created an unfavourable experience to many sectors especially the education sector. Study from home create an inequality in the education system because the facilities in the home is different among the students. The aim of the present study to analyse the psychological state of private higher learning institution students in Malaysia during the pandemic of COVID-19. The study was designed by using quantitative approach and the survey was conducted through online from 15th July, 2021 to 15th August, 2021. The results indicate that majority of the students are facing mental health problem whether depression, stress and anxiety during this pandemic. Besides, the findings also showed that there is a significant difference in the level of gender where the female students' mental health problem percentage are higher than male students. The implications of present study able to contribute to the colleges, universities and parents so that they aware of the mental health conditions of students, prepare to safe the young generations not to involve in extreme decision such as suicide due to the unstable psychology state during this pandemic.

Keywords: Stress, Anxiety, Depression, Covid-19, Private Higher Learning Institution

BAFE089:
**EXPLORING THE INFLUENCE OF SOCIAL NETWORKS ON GREEN
PURCHASE INTENTION: THE CASE OF MALAYSIA**

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Abstract

Unsustainable practices are on the rise in almost all parts of the world that is causing huge damage to world environment. Although, many governments are trying to overcome this issue but still there exist lack of responsive behavior from general population. One of the sectors that is contributing a lot towards unsustainable practices is the construction sector (especially small traditional houses). These houses use energy that causes rise in the global temperature. To understand this phenomenon, current study explores the potential factors that may lead towards green purchase intention of Malaysian population. Factors studied includes social networks, peer influence and environmental knowledge. Data were collected from 100 Malaysian respondents. Results revealed that social network has no relationship with green purchase intention whereas peer influence and environmental knowledge does have a positive relationship with green purchase intention. The results of this study help in understanding the important factors to be considered when predicting the green purchase intention of Malaysian buyers.

Keywords: Green Purchase Intention, Social Networks, Peer Influence, Environmental Awareness, Malaysia

INTRODUCTION

Global warming is creating serious problems for the mankind. This problem has to be controlled on urgent basis. However, the efforts to curb global warming are not as effective as they should be. One of the reasons to this is the lack of controlling those sectors which are contributing a lot towards this issue. One of the such sectors is the construction sector because annually millions of houses are being constructed across the world. And the source of energy used in these houses is one of the major contributors to global warming. To control this, green buildings offer a solution (Wijayaningtyas, Handoko & Hidayat, 2019).

Unfortunately, unsustainable practices are affecting world environment in such a way that by 2025, approximately 7 million tonnes of solid waste will be produced every day, costing \$375 billion to world economy (Chekimaa, Chekimab, Wafaa, Igaua, & Sondoh, 2016). Analysing the significant impact of unsustainable practices, concept of sustainable development is on the rise (Liu, Wang, Shishime, & Fujitsuka, 2010). To promote sustainable development, green customers are playing an important role. Green customers avoid purchasing those products (green house/building in this case) which are made of material dangerous for environment and producing waste (Ali & Israr, 2012). Such products are called as green products (green house/building) also known as environment friendly or "environment sustainable" (Rex & Baumann, 2007).

Although green products (green house/building) are helpful in countering the negative effects of unsustainable practices, unfortunately recent studies are showing that the sale of green products (green house/building) is declining thus highlighting customers are not accepting such products overwhelmingly (Hasan, Irfan, Zullina, Shaari, & Sharif, 2018).

Easy access of technology especially social media can help green customers to collect more knowledge about green products (green houses/building) and their impact on environment before having intention to purchase such products (Kanchanapibul, Lacka, Wang, & Chan, 2014).

Therefore, it is crucial to understand factors (especially the role of social networks) hindering or fostering the green purchase intention of customers especially in Asian countries (Ali & Israr, 2012) as most of the studies on green behaviour were conducted in Europe and American context (Kumar & Ghodeswar, 2015). Thus, the aim of this study is to identify factors which can impact the customers' purchase intention of green products among Malaysian population.

Research Questions

1. What is the relationship among social media networks and green purchase intention?
2. What is the relationship among peer influence and green purchase intention?
3. What is the relationship among environmental knowledge and green purchase intention?

Research Objectives

1. To analyse the relationship among social media networks and green purchase intention.
2. To analyse the relationship among peer influence and green purchase intention.
3. To analyse the relationship among environmental knowledge and green purchase intention.

LITERATURE REVIEW

Green House

Green house or building is the one that causes no or minimum damage to the environment. This is possible by utilizing less energy and reduced heating effect (Akshey, Swati & Disha, 2018). Such houses use "...recyclable timber products, recyclable roof systems, recyclable kitchen cabinets, certified energy efficient appliances, compact fluorescent lamps and light-emitting diode lighting system" (Toowoomba Regional Council, 2010). Furthermore, green house "use water conservation devices, solar panels, rainwater harvesting systems, low lighting and electronics consumption and a special design for natural cooling and heating" (Toowoomba Regional Council, 2010). Products (green house in this case) should be green or eco-friendly throughout their life cycle starting from design to post-usage (Kumar & Ghodeswar, 2015).

Hypotheses Development

Social Media Networks. Social media has brought many benefits to individuals and organizations. Individuals use social media to make contacts, share material, and look for jobs and products or services (Allsop, Bassett, & Hoskins, 2007). Similarly, businesses are using social media to approach existing and potential customers to promote products or services. The advantage of social media to businesses is that the information reaches customers quickly which can influence the buying behaviour. With regards to green products (eco-friendly house), the information spread through social media platforms becomes Electronic Word of Mouth (EWoM). Positive EWoM helps in encouraging potential green product buyers (eco-friendly house) to be better aware of such products and their impact on an individual's life and environment. Furthermore, professional bodies and government can also use social media advertisement to promote green products (eco-friendly house) through social media advertisement at lower cost as compared to traditional advertisement methods. Thus, it can be concluded that social media is helpful in promoting green purchase intention of individuals. Also, as information dissemination is extremely easy through social media networks as compared to traditional or offline media (Akrimi & Khemakhem, 2012), therefore, advertisement of green products (eco-friendly house) through social media networks can play a positive role towards intention to purchase green. Therefore, it is hypothesized that:

H1: Social media networks will have a positive effect on intention to purchase green products (eco-friendly house).

Peer Influence. Peer influence refers to the impact made by relatives, friends or other closely related people on an individual. Previous studies have shown that peer influence is one of the

important factors when it comes to decision making for purchasing green products (eco-friendly house) (Khare, 2014). Individuals whose peers have good knowledge and experience of green products (eco-friendly house) can influence intention of new green product buyers by convincing them through the influence they may have. Therefore, it can be concluded that peer influence leads to intention to buy green products (eco-friendly house) (Barua & Islam, 2011). Thus, the hypothesis is:

H2: Peer Influence will have a positive effect on intention to purchase green products (eco-friendly house).

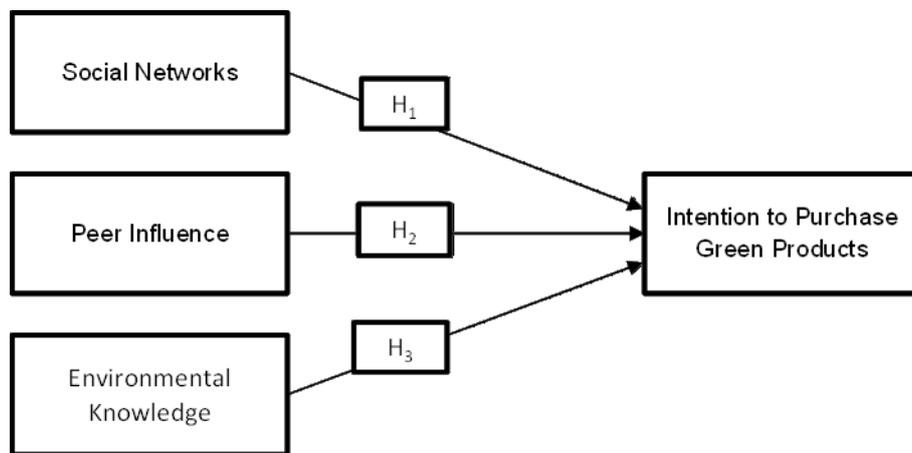
Environmental Knowledge. Information seeking or obtaining more knowledge helps an individual to answer many questions (Oleson, Poehlmann, Yost, Lynch, & Arkin, 2000) regarding environment concerns. This results in increased level of environment awareness. Thus, higher level of knowledge leads to understanding the requirement for green products (eco-friendly house). Hence, it can be concluded that if a person has more environment related knowledge and know how unsustainable practices are damaging environment, such person will have higher level of environmental concern which is an important predictor of intention to buy green products (eco-friendly house) (Goh & Balaji, 2016). Thus, it can be hypothesized that:

H3: Environmental knowledge will have a positive effect on intention to purchase green products (eco-friendly house).

Proposed Research Framework

Figure 1 shows the proposed research framework based on hypotheses developed through literature review.

Figure1. Proposed Conceptual Framework



RESEARCH METHODOLOGY

Instrument Development

Five-point Likert scale was used to measure the variables of this study. Items used to measure variables were adapted from existing studies. In order to ensure that the questionnaire is free from spelling mistakes, grammatical mistakes and relevancy, pre-testing (from 2 language experts) and pilot testing (from 30 respondents) were conducted before the actual data collection. Table 1 presents the details of the variables, items used and the source from where it is adapted.

Table 1: Item Details

Variable	Items	Source
Environmental Knowledge	I know more about recycling than the average person does.	Dunlap, Liere, Mertig, & Jones, (2000)
	I understand the environmental phrases and symbols on product packaging.	
	I know how to select products and packages that reduce the amount of waste ending up in landfills.	
	I am very knowledgeable about environmental issues.	
	Using green products (eco-friendly house) is a primary means to reduce pollution.	
Peer Influence	Most people who are important to me think I should purchase green products (eco-friendly house).	Fitzmaurice, (2005)
	The people who I listen to, could influence me to purchase green products (eco-friendly house).	
	My close friends think it is a good idea for me to purchase green products (eco-friendly house).	
	Important people in my life want me to purchase green products (eco-friendly house).	
Social Media Networks	I like to use social media to increase my knowledge about green products (eco-friendly house).	Ahmed & Zahid, (2014)
	I am satisfied with the social media marketing of green products (eco-friendly house).	
	The social media marketing of green products (eco-friendly house) is very attractive.	
	The level of feedback generated on social media sites about green products (eco-friendly house) by other users meets my expectations.	
Intention to Purchase Green Product	I will definitely consider buying a green product (eco-friendly house).	Kim & Pysarchik, (2000); Chan, (2001)
	I will prioritize a green product (eco-friendly house) when purchasing.	
	I feel like buying a green product (eco-friendly house).	
	I will recommend a green product (eco-friendly house) to people around me.	

Data Collection

Data were collected in July, 2019 from Malaysian respondents in one shot. In total, 100 valid responses were received which were used for further analysis. Questionnaire method was used to collect the data.

Demographic Details

Majority of the respondents (58%) were female whereas remaining 42% were female. Based on ethnicity, 90% respondents were Chinese, followed by Indians (6%) and others (4%). No

respondent reported that s/he is not using social media. Most of the respondents (44%) use social media from 1-3 hours daily, 36% use social media daily from 4-6 hours and 20% use social media for more than six hours daily. Details of demographics are shown in table 2.

Table 2: Demographic Details

Demographic	Percentage	Percentage
Age	18 – 25 years	23%
	26 – 33 years	18%
	34 years and above	59%
Gender	Male	58
	Female	42
Ethnicity	Malay	-
	Chinese	90
	Indian	6
	Others	4
Daily Social Media Usage	None	-
	1-3 hours	44
	4-6 hours	36
	More than 6 hours	20

Data Analysis

Data analysis was done through PLS-SEM which is methodologically well-established and frequently applied (Ali, Rasoolimanesh, Sarstedt, Ringle, & Ryu, 2017). SmartPLS 3.0 software was used as it helps in building the model and helps in analysing the cause-and-effect relationships (Hair, Sarstedt, Ringle, & Mena, 2012).

RESULTS

Measurement Model

Convergent validity and discriminant validity were used to analyse measurement model.

Convergent Validity

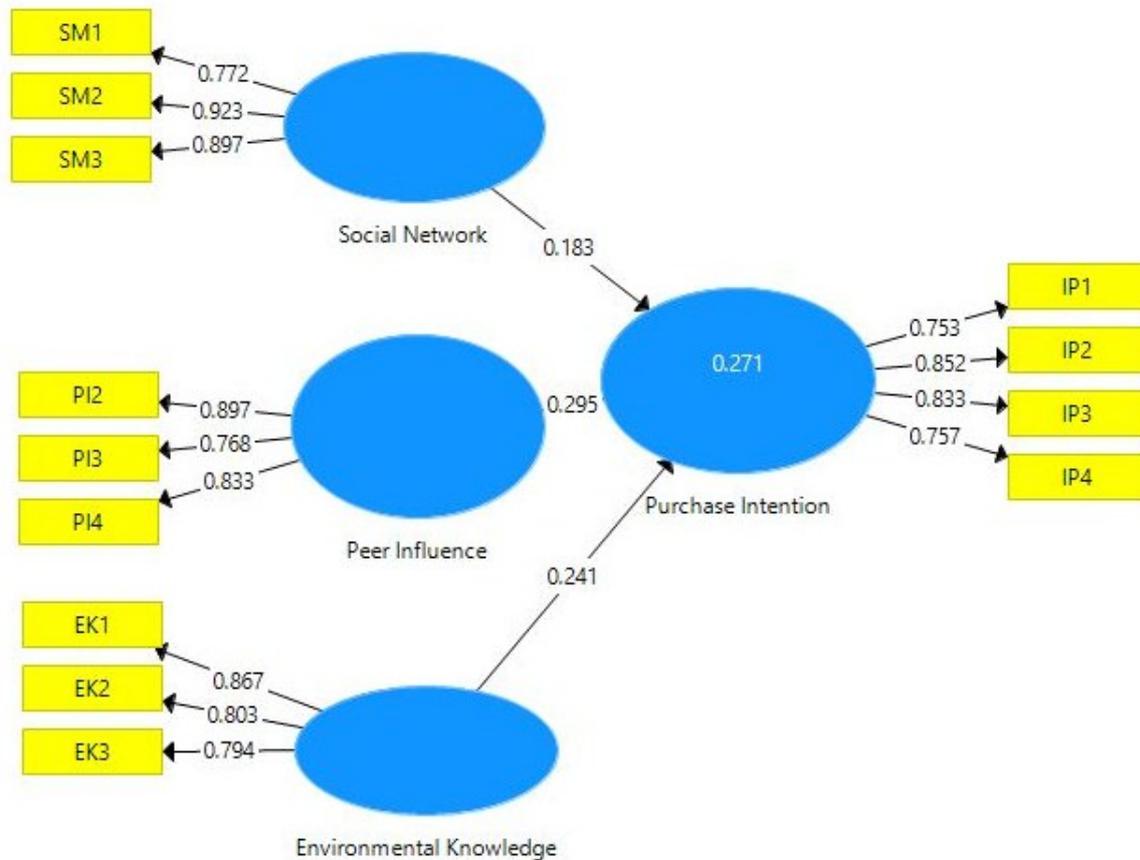
Convergent validity was analysed through factor loadings, composite reliability and Average Variance Extracted (AVE) (Rahman, Zailani, Abdullah-Al-Mamun, Ameziane, & Hazeez, 2015). As shown in in table 3 and figure 2, all the criteria of measurement model were achieved as suggested by Hair, Ringle, & Sarstedt, (2013). Factor loading value for each item is more than 0.70 and Cronbach alpha for all constructs is greater than 0.70. Moreover, the values of Composite Reliability (CR) and AVE are also more than 0.80 and 0.50.

Table 3: Convergent Validity

Constructs	Items	Loadings	Cronbach	CR	AVE
Environmental Knowledge	EK1	0.867	0.762	0.862	0.676
	EK2	0.803			
	EK3	0.794			
Social Network	SM1	0.772	0.831	0.900	0.751
	SM2	0.923			
	SM3	0.897			

Peer Influence	PI1	0.897	0.786	0.873	0.696
	PI2	0.768			
	PI3	0.833			
Purchase Intention	IP1	0.753	0.814	0.877	0.640
	IP2	0.852			
	IP3	0.833			
	IP4	0.757			

Figure 1. Measurement Model



Discriminant Validity

Discriminant validity was also analysed and there is no issue related to discriminant validity. As can be seen in table 4, bold value in each column related to construct is greater than other values in the same column thus confirming discriminant validity.

Table 4: Discriminant Validity

	Environmental Knowledge	Social Network	Peer Influence	Purchase Intention
Environmental Knowledge	0.822			
Social Network	0.232	0.834		
Peer Influence	0.335	0.431	0.800	
Purchase Intention	0.137	0.434	0.344	0.867

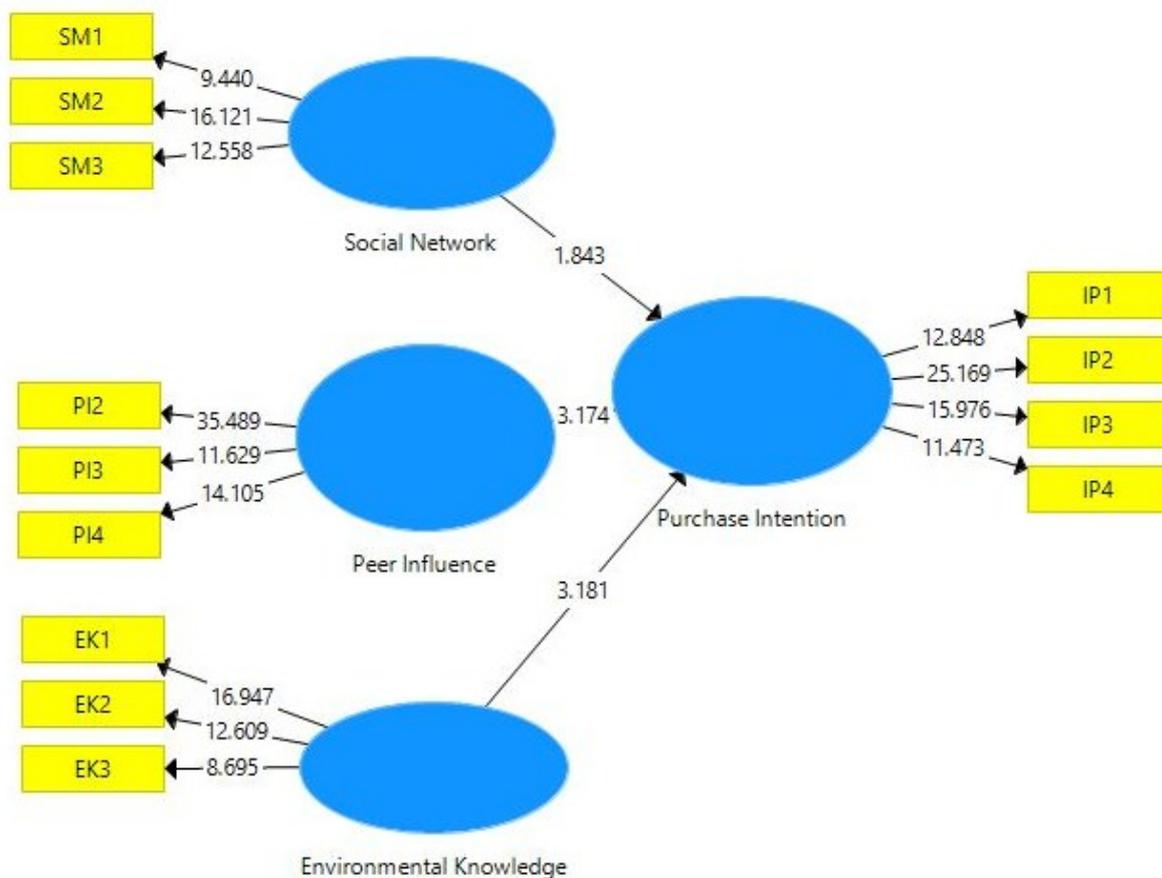
Structural Model

Structural model was analysed by using R^2 , beta values and t-statistics (Hair, Thomas, Hult, Ringle, & Sarstedt, 2017). As shown in table 5 and figure 3, hypotheses between knowledge about environment, peer influence and purchase intention were supported as the values of t-statistics are more than 1.96 whereas the p-value is less than 0.05. However, hypothesis between social networks and purchase intention was not supported as the value of t-statistic was less than 1.96 and p-value is also $0.065 > 0.05$. VIF values for all the constructs is less than 5 thus showing no multicollinearity issues. The value of R^2 is 0.271 which means that 27.1% variance in the dependent variable (purchase intention) is caused by independent variables in the model. Peer influence has the highest beta value (0.295) trailed by environmental knowledge (0.241) and social network (0.183).

Table 5: Discriminant Validity

Hypothesis	Beta	T Statistics	P Value	Result	VIF	R^2
Environmental Knowledge -----> Purchase Intention	0.241	3.181	0.001	Supported	1.059	0.271
Social Network -----> Purchase Intention	0.183	1.843	0.065	Not Supported	1.235	
Peer Influence -----> Purchase Intention	0.295	3.174	0.002	Supported	1.280	

Figure 3. Structural Model



DISCUSSION

The results of this study are consistent with previous studies except for social networks. First hypothesis proposed was between environmental knowledge and intention to purchase green

products. Higher environmental knowledge means that an individual knows what will be the effect to environment if unsustainable practices are used. As sustainable or eco-friendly awareness has increased in Malaysia therefore respondents had more environmental knowledge. Thus, increase in environmental knowledge gives rise to intention to purchase green products (eco-friendly house). This result is consistent with the study done by Polonsky, Vocino, Grau, Garma, & Ferdous, (2012) where authors found that environmental knowledge give rise to those practices or behaviours which are positive for environment.

Second hypothesis proposed in this study was the relationship between peer influence and intention to purchase green products (eco-friendly house). Results indicated that higher peer influence leads to higher intention to purchase green products (eco-friendly house). These results are also in consistent with previous studies. Khare, (2015) mentioned that peer influence is among the most important factors that lead to intention to purchase green products (eco-friendly house). This is especially true in the case when peers already have environmental knowledge and are familiar or using green products. Such peers will have a positive influence on others in convincing them to use green products (eco-friendly house).

Third hypothesis proposed in this study was the relationship between social networks and intention to purchase green products. Results showed that there is no relationship between social networks and intention to purchase green products (eco-friendly house). This can be due to the reason that people may not be using social media for getting information related to green products (eco-friendly house). Social media can be used for variety of reasons and one of the reasons can be getting knowledge or information about green products (eco-friendly house). If individuals are not using social media to get information or knowledge about green products (eco-friendly house) thus there will exist no relationship between social networks and intention to purchase green products (eco-friendly house).

CONCLUSION

This study was conducted in Malaysia and data were collected from 100 respondents. SmartPLS 3.0 was used for data analysis. This study examined the relationship between social networks, peer influence, environmental knowledge and purchase intention of green products (eco-friendly house). The results indicate that peer influence and environmental knowledge has a significant positive relationship with intention to purchase green products (eco-friendly house) whereas social networks have no significant relationship with intention to purchase green products (eco-friendly house). This study used convenience sampling due to which results cannot be generalized to entire population of Malaysia. Thus, it is recommended that in the future, similar study should be replicated in different countries including Malaysia by using probability sampling in order to verify the findings of this study and at the same time to generalize the results.

RESEARCH IMPLICATIONS

This study has few implications. First, this study helps in understanding the factors among Malaysian that can influence the purchase intention of green products (eco-friendly house). By understanding these factors, green house developers and marketers can know how to increase the intention of Malaysians to purchase green products (eco-friendly house). For example, this study revealed that environmental knowledge and purchase intention has a positive relationship. Thus government, NGOs and related organizations should emphasis on how to increase the environmental knowledge among Malaysian population. Similarly, peer influence also showed a positive relationship with green purchase intention (eco-friendly house). Thus, efforts should be made in order to ensure that potential customers should interact more with those who already are familiar with green houses and their benefits and are using such houses. Another finding of this study is that there exists no relationship between social media and green purchase (eco-friendly house) intention. More efforts should be carried out to ensure that Malaysians population should use social networks to obtain information about green houses. As information spreads quickly through social media, thus it can be a very good tool to increase environmental knowledge, makes peer connectivity easy thus leading to green house purchase intention. All these efforts will help in reducing unsustainable practices which will results in less damage to the earth and climate therefore it will lead to a healthy environment to live in the future.

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BAFE009: PORTFOLIO SELECTION PROBLEM: ISSUES, CHALLENGES AND FUTURE PROSPECTS

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Abstract

Portfolio management is the process of deploying funds in returns earning avenues. Portfolio selection is a process of construction of portfolios by selecting assets from the stock market with the aim of highest returns on least risk simultaneously. This paper presents the insight on portfolio selection history issues and challenges which are faced by investors while making investment decisions. The mathematical computation of return and risk is presented for understanding the problem well. Further, various constraints associated with the portfolio selection problem has been listed and also has been explained in detail such as measurement of risk; construct efficient and diversified portfolios, determining the relationship of security returns with the market, systematic risk, and market timing, etc. It also discusses prospects that will be available in the future to investors.

Keywords: Portfolio selection Problem, Expected Return, Risk, Modern Portfolio Theory.

INTRODUCTION

The art and science of selecting an investment combination and approach is known as portfolio management, matching investments to objectives, allocating funds for individuals and organizations, and managing risk and return. Portfolio management is all about identifying strengths, limitations, opportunities, and challenges in the trade-offs of debt vs. equity, domestic vs. foreign, development vs. protection, and a slew of other trade-offs in the quest to maximize return while minimizing risk.

Portfolio management offers the following advantages to investors.

- **Makes Right Investment Choice-** Portfolio management facilitates the investor in selecting the appropriate asset mix. It allows for more precise decisions about investment strategies that are in line with the objectives and objectives.
- **Maximizes Return-** One of the most critical functions of portfolio management is to maximize returns. It offers a formal system for conducting assessments and deciding on the best asset class. With limited funds, investors can receive high returns.
- **Averts Disaster** -Portfolio management averts the disaster of investors taking big risks. Rather than investing only in one asset class, it advises on diversifying one's portfolio. If an investor invests in only one form of security and that security fails, the investor would incur significant losses that could have been prevented if he had invested in a variety of assets.
- **Monitor Performance-** Portfolio management aids management in measuring the performance of their investment portfolio. A portfolio's consolidated investment can be analyzed more objectively, and any deficiencies can be found very easily.
- **Liquidity Management-**Portfolio management helps investors to arrange their assets in a structured way. Investors should choose assets in such a way that they can easily sell any of them when they need cash.

- **Decreases Risk:** Investing in stocks is risky due to the market's uncertainty, which raises the risk of losses. Portfolio management aids in risk reduction by distributing risk across a wide number of securities.
- **Enhances Financial Understanding-** Portfolio management aids in the enhancement of investors' financial knowledge. They came across various financial principles and learned how a financial market functions when managing their portfolio, which will improve their overall financial understanding.

Portfolio Management Process

Portfolio management is a complicated process that covers the following activities below-

- **Defining investment practices and constraints:** Investors' usual targets are current income, capital appreciation, and principal security. It is necessary to specify the relative value of these goals. It's also necessary to specify liquidity, time horizon, tax, and special circumstances constraints. Objectives of portfolio management are Return, income, growth, stability with a minimum level of risk. There are some factors affecting risk i.e. financial situation, temperament. Constraints of investment management are Liquidity, Investment horizon, Taxes, Regulation, unique circumstances.
- **Capital market Expectations Quantification:** To tackle the asset-mix issue, we need long-term returns and risk estimates for different asset types. Put differently, we have to quantify capital market expectations.
- **Asset Mix Selection:** The selection of asset mix is the most crucial decision in investment management. This is a general term that refers to the proportions of financial assets in a portfolio. The optimal mix of financial assets is primarily determined by the investor's risk tolerance and investment horizon.
- **Portfolio Strategy Formulation:** Following the selection of an asset mix, a portfolio strategy must be formulated. The two options are an active and a conservative investment plan. An active portfolio plan seeks to achieve better risk-adjusted returns by restoring the timing of the market, rotating sector, selecting security, or any combination of these. A passive investing approach, on the other hand, involves maintaining a well-diversified portfolio while limiting risk exposure.
- **Securities or Portfolio Selection:** When it comes to security selection, most investors take a proactive approach. Fundamental analysis and technical analysis are widely used by investors when selecting stocks. When selecting securities, maturation yield, credit score, and conditions at maturity, tax haven, and cash conversion ability are all factors to consider.
- **Portfolio Execution:** It is the part of investment management where you bring your portfolio plan into practice by trading individual securities in a predetermined proportion.
- **Portfolio Revision:** As equities and bonds fluctuate not only the valuation of a portfolio but also its mix, or the relative proportion of equities and debt elements, will become different. Periodic readjustment of the portfolio is needed in response to such changes.
- **Performance Evaluation:** A portfolio's performance should be measured regularly. Risk and return are the two most important variables to consider when assessing a portfolio's efficiency, and the key question is whether the return on the portfolio is proportional to the risk it entails. An analysis like this could offer valuable input for improving the portfolio management process regularly.

Portfolio Selection Problem

Portfolio construction aims to create a portfolio with the highest return and the lowest risk. The optimum portfolio is a portfolio that meets all of these criteria. Portfolio selection is the method of determining the best portfolio. Generally, a rational investor maximizes the expected return level for a given risk level or minimizes the risk for a fixed expected return level.

The mathematical formulation is given below-

To maximizing the return for a given level of risk

$$\text{Max } E \left[\sum_{j=1}^n W_j X_j \right]$$

To minimize the risk for a given level of return

$$\text{Min } \sigma^2_p = \sum_{i=1}^n \sum_{j=1}^n W_i W_j \sigma_{ij}$$

Where;

σ^2_p = Portfolio variance

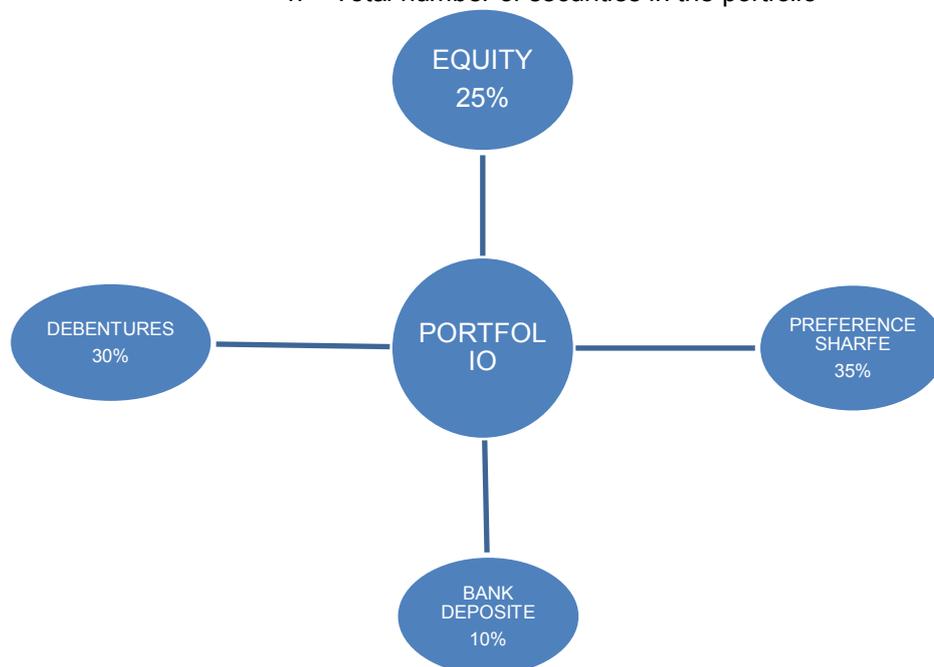
W_i = proportion of funds invested in security i

X_i = return of individual security

W_j = proportion of funds invested in security j

σ_{ij} = The covariance between the pair of securities i and j

n = Total number of securities in the portfolio



- **Constraints of portfolio selection problem**

- ❖ **Cardinality constraint:** cardinality constraint is a constraint that restricts the number of assets in a portfolio in this is assumed that there is a fixed transaction cost on each item in a portfolio, this limits on the total number of assets in the portfolio. It also sets lower and upper limits on the amount that can be invested in each item.
- ❖ **Boundary constraints:** Boundaries constraints include the lower and upper limit of money that can be invested in a portfolio, this is represented by a feasible set of portfolio boundaries called efficient frontier of portfolio selection. The efficient set of portfolios was defined as those that fell between the global minimum variance portfolio and the maximum return portfolio on the efficient frontier boundaries.
- ❖ **Transaction cost:** The capital asset pricing model assumes that there is no transaction cost for validation of CAPM but in practice, this is not possible because every transaction in the stock market includes some charges. This encompasses commissions paid to stockbrokers for performing stock transactions and booking fees charged while buying tickets to a concert. Travel cost and the time it takes to complete a transaction are also examples of transaction costs. This transaction cost affects portfolio selection, therefore, should be considered by investors while investing their funds.

- ❖ **Transaction Lots:** The transaction lot includes the minimum number of shares that can be traded in the stock exchange. Transaction lots are created to avail of the investment opportunity to all classes of investors. The worth of each transaction lot equal to

$$T_c = N_i \cdot P_i$$

Where T_c = Worth of each transaction lot.

N_i = number of minimum units of security i in a lot.

P_i = market price of security i

- ❖ **Liquidity constraints:** Liquidity refers to the ability to convert in cash. Portfolio liquidity is the ability to adjust positioning in a portfolio in response to changing market conditions. There are three ways liquidity constraints in portfolio selection, first one is pre-filtering means only assets with defined minimum liquidity should consider in portfolio selection. The next constraint is an individual constraint on an asset, which takes into account the financial value assigned to each asset in the portfolio. The maximum amount that can be invested in a particular asset is determined by its liquidity. Last but not least, weighted average liquidity considers the weighted average liquidity of assets in a portfolio.

LITERATURE REVIEW

Before 1952, diversification existed; however, there was no suitable investment theory. Markowitz introduced the parameters for portfolio evaluation in a 1952 article on portfolio selection. He was named the "Father of Modern Portfolio Theory" for significant contribution in this field and got the Nobel Prize in Economics in 1990. Decision can be made on portfolio overall mean and variance (Roy 1952); He suggested picking a portfolio that maximizes the E-F/D ratio. Where; E= expected return of the portfolio F= fixed return and D= standard deviation of return. Portfolio of risky assets and cash can be considered (Tobin 1958); his work further expanded by Hicks and found direct relationship between return and risk and the proportion of risky stocks remains static along this linear portion of the efficient frontier (Hicks 1962); Deterministic calculus approach for maximizing consumer utility under budget constraints is suggested (Marschak 1938); Investors diversify their investments among all securities that have the greatest anticipated return. The rule of large numbers would ensure that the portfolio's real yield is virtually equal to the estimated yield. (Williams 1938).

Modern Portfolio Theory by Markowitz [Markowitz, 1952] is widely regarded as a defining moment in asset allocation and portfolio optimization. It takes rational investors into account and models the problem using the mean-variance analysis process, which reduces the portfolio's variance by setting a specific value for the estimated return. The model also has many assumptions. Markowitz said that investors should opt for an efficient portfolio. He said there are techniques to compute efficient portfolios subject to expected returns and covariance between security returns, but he did not explain these techniques in this article; to solve the quadratic model Markowitz used the critical line technique subject to linear constraints. This technique is also used in the computation of efficient portfolios. (Markowitz 1956), this process yet requires very much time and calculations; the complexities of this model is simplified and a new model was introduced that can analyze a large number of securities at an extremely low cost. This model is called as "single index model" (William F. Sharpe 1963).

No one can abnormal return, and security return has two parts namely risk free return and market risk premium proved by William F. Sharpe 1964, and he named it Capital Asset Pricing Model. CAPM has wide acceptability in the finance world but it has some challenges. Even after adjusting for risk as calculated by beta, it is possible to depend on certain firm or security characteristics and gain superior returns. Other factors affecting stock returns proposed by Stephan Ross in the arbitrage pricing theory that can include any number of risk factors. He specifies the expected and realized returns on individual stocks as a function of different fundamental economic factors (Recharad Roll and Stephan A. Ross 1980). A Bayesian framework is introduced to address estimation error. Portfolio selection in this context is based on maximizing expected utility by the use of probability distributions of security returns. To mitigate estimation error, prior measurements of each stock's average return, volatility, and pairwise coefficients of correlation are derived toward the expected yield, average volatility, and average correlation coefficient of the entire population, respectively (Peter A. Frost and James E. Savarino 1986). Portfolio selection may be undertaken at the international level when exchange rates are flexible. To control exchange rate volatility Cheol S. Eun and Bruce G. Resnick employed two types of exchange rate reduction at the same time the first one was multi-currency

diversification and the other was hedging via forward exchange contract (Cheol S. Eun and Bruce G. Resnick 1988).

A basic linear programming problem can be used to determine an optimal portfolio. It employs the minimum return as a risk indicator; the logical problem of a quadratic utility function suggested by the mean-variance model is solved by this function (Martin R. Young 1998); Expert knowledge in portfolio selection can be identified by possibility distribution. It was found that upper possibility distribution portfolios perform better than lower possibility distribution, in this case, portfolio risk is defined as the difference between the spread of returns of upper and lower possibility distribution portfolios (Hideo Tanaka, Peijun Guo 1999); For selecting portfolios at a large scale Baye's theorem of statistics is used, (Nicholas G. POLSON, Bernard V. TEW 2000). Lubos Pastor used a Bayesian method to assess portfolio selection, which included a previous level of trust in an asset pricing model. They propose a method for calculating optimal weights in an asset pricing model when there is a nontrivial level of prior trust. (Lubos Pastor 2000).

Multiobjective portfolio problem can be solved in fuzzy terms, fuzzy goal programming approach was applied to solve this problem (M. Arenas Parra, A. Bilbao Terol, M.V. Rodriguez Uribe 2001). A simulated annealing method can be used to solve the portfolio selection problem; this method is a mixed-integer quadratic programming problem that occurs in the Markowitz model (Y. Crama and M. Schyns 2003); mean-variance model is compared with VaR and CVaR constraints on investment choice, it was discovered that if the CVaR and VaR bounds converge, a CVaR constraint is more beneficial than VaR for a given confidence level, but that in the non-existence of risk-free security, it has the detrimental effect of forcing highly risk-averse agents to choose portfolios with higher variance (Gordon J. Alexander, Alexandre M. Baptista 2004); Based on the fundamental model of 1952, three alternative models for portfolio selection problems with minimum transaction lots are presented, along with a genetic algorithm for finding a solution. The empirical results show that the proposed algorithms generate portfolios that are very similar to the efficient frontier, (Chang-Chun Lin, Yi-Ting Liu 2008). The skewness concept is used to measure the asymmetry of fuzzy portfolio returns as the third central measure, besides mean and variance, and fuzzy simulation is developed for empirical studies (Xiang Li, Zhongfeng Qin, Samarjit Kar 2010). The fuzzy portfolio selection problem can be solved using a proposed method of different interest rates for borrowing and lending. In this model, investment risk is assessed using the possibilistic semi absolute variance of the return (Wei Chen, Yiping Yang, and Hui Ma 2011). Ana González · Gonzalo Rubio studied the effect of liquidity on portfolio selection; they discuss how to introduce liquidity in the mean-variance model; found a strong effect of liquidity on portfolio selection (Ana González, Gonzalo Rubio 2011). A holistic approach for stock analysis and portfolio selection was presented in which fuzzy set is used for stock evaluation and to deal with financial market and behaviour of investors (S kiris, Ozden Ustun 2012), multifactor capital asset pricing model for financial portfolio selection is used (Mehmet F. Dicle 2013), possibilistic sharpe ratio based portfolio selection model was presented in which possibilistic mean and possibilistic variance is used for selecting portfolio (Rupak Bhattacharyya 2013), inverse portfolio problem with mean deviation model was solved (Bogdan Grechuk, Michael Zabarankin 2014), DEA cross efficiency evaluated in portfolio selection in Korean stock market and found that proposed model outperform benchmark (Sungmook Lim, Kwang Wuk Oha, Joe Zhu 2014), Although the Markowitz model assumes that investors are rational and homogeneous, irrationalities, over and under reaction, and mental accounting have all been demonstrated in investors; portfolio selection was solved considering these variables and new model was proposed and it showed promising results in relation to market and mean- variance model (Kuo-Hwa Chang, Michael N. Young, Matthew I. Hildawa, Ian Joshua R. Santos, Chien-Hung Pan 2015), Two volatile assets with evenly distributed returns can be chosen for an investment portfolio (A. I. Kibzun and A. N. Ignatov 2015), network approach can be used to solve portfolio problem (Gustavo Peralta, Abalfazl Zareei 2016); Mean-downside Risk- Skewness model solves three objective portfolio optimization problems (Rubén Saborido, Ana B. Ruiz, José D. Bermúdez, Enriqueta Vercher, Mariano Luque 2016), estimation of covariance matrix of Markowitz model is done by non-linear shrinkage estimator, (Olivier Ledoit, Michael Wolf 2017), for online portfolio selection transaction cost optimization was proposed (Bin Li, Jialeiwang, Dingjiang Huang and Steven C. H. Hoi 2018), a new bi-objective portfolio selection is proposed in which Sharpe ratio and Value-at-risk were selected as objectives, Sharpe ratio is an important nonsystematic risk measurement, Value-at-Risk measures the systematic risk, the problem is solved using multi-objective genetic algorithm (Mohuya B. Kar, Samarjit Kar, Sini Guo, Xiang Li, Saibal Majumder 2019), a hybrid approach for portfolio selection was introduced with skewness and

kurtosis as third and fourth order moments, model was tested on shanghai stock exchange returns provides better results than traditional (Bilian Chen, Jingdong Zhong , Yuanyuan Chen 2020).

It was found that there is lack of literature in reference to all developments in portfolio selection at one place. This paper fills this gap by providing all issues challenges and future prospectus of said domain at one place.

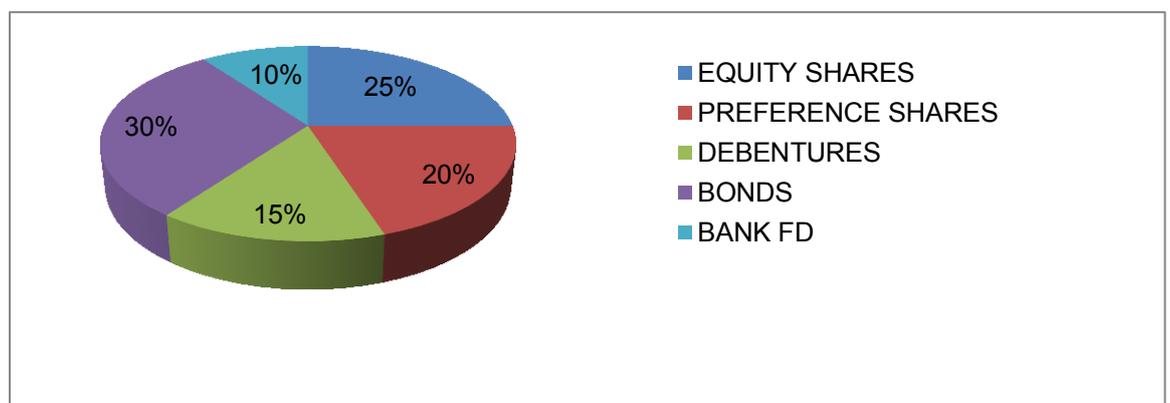
RESEARCH METHODOLOGY

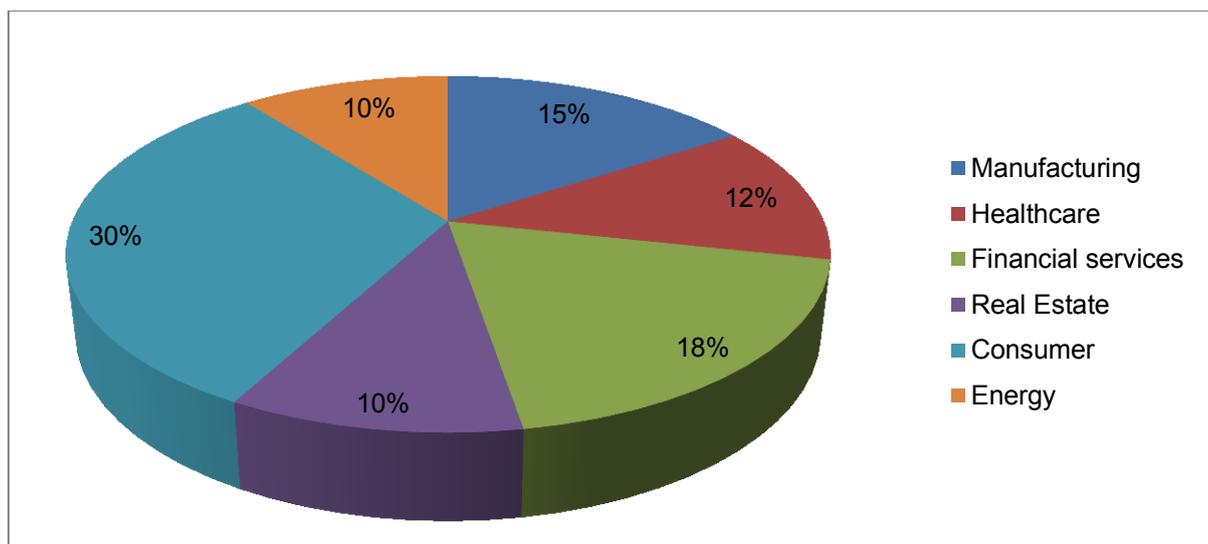
The research design used for the study is of the descriptive form, which meets the requirements of the study's objectives. This research design was chosen in order to enhance the precision and scope of the research sample. The analysis relies on secondary data from articles, journals, books, and websites.

ISSUES AND CHALLENGES OF PORTFOLIO SELECTION

In this section, some of the issues faced by the various stake holders in the stock market are listed and explained in detail as follows:

- ❖ **To Determine Expected Return of Portfolio:** The estimated return of the portfolio is calculated using a weighted average of the returns of the portfolio's individual securities. Weight is the percentage of the security in that portfolio.
 - **Constraints:**
- ❖ The proportion of security in the portfolio should be non-negative: A portfolio consists of many securities. The risk of the portfolio will be diversified as many as securities in a portfolio, but while selecting security investors should remember that portion which is invested should not be negative.
 - i. $X_i \geq 0$
 - ii. The Sum of weights should be 100. The sum of proportion invested in all securities should be equal to 100.
 - iii. $\sum W_i = 0$
- ❖ **Risk of Portfolio:** Variability of return is called risk of security. The portfolio's variance or risk is higher than the weighted average of the individual securities' variances. The covariance of return must also be considered, which evaluates the association between each stock in the investment lot and any other stock.
- ❖ **Diversification should be applicable:** Diversification is the method of mixing securities in a portfolio. Diversification tends to lower overall risk while maintaining portfolio return.





- **Diversification across Industries**

- ❖ **A feasible set of portfolios:** By combining a small number of stocks in various proportions, a large number of portfolios can be created. These are the various portfolios into which an investor could invest. The word for this is portfolio opportunity setup.
- ❖ **An efficient set of portfolios:** Portfolio with maximum expected return and minimum variance known as an efficient portfolio. This is unlikely to get a portfolio that has both features simultaneously, therefore portfolio should be selected by the following criteria:
 - An investor would prefer the lower-risk option between two portfolios with an equal estimated return.
 - If an investor is provided two portfolios of the same risk, he will opt for one with a higher expected return.

Assumptions of the above criteria:

- Investors are rational; they would go for a higher return over a lower return, for example, two securities A and B are offering 15% and 17% respectively. In this case, investors would prefer security B.
 - Investors are risk-averse; they would select lower risk over a higher risk; for example, there are two securities A and B having risk associated with them 5% and 7% respectively; an investor would go for security A.
- ❖ **Relation of security return with other factors**
 - Stocks shift together due to a variety of factors other than the market return. **Multi-index models** try to figure out what non-market variables cause securities to shift in lockstep. There are economic factors that account for common stock price movement. Inflation, real economic growth, interest rates, and exchange rates are examples of these causes.
 - A multi-index model adds these variables as an external independent variable to a single index model.
 - ❖ **Perfect competition:** There is a challenge in portfolio selection that the relationship of security return with systematic risk will apply only in perfect competition. This means that investors in total determine prices by their actions. Features of perfect completion are as follows:

- a) A large number of buyers and sellers: Both buyers and sellers are numerous. In perfect competition, so that individual is not able to influence the price of market or production.
 - b) Product homogeneity: Each firm should produce and sell a homogeneous product such that no buyer has a preference for one seller's product over another. If the products are all the same, the price would be the same everywhere.
 - c) Free entry and exit of players: There is free entry and exit of business entities in the perfect competition so that no one is able to earn abnormal profits. If in any industry there are abnormal returns more firms will enter that industry and profits will reduce to normal, on the other hand, if any industry suffers losses some firms will leave the industry.
 - d) Full market awareness: Since market prices are uniform, buyers and sellers have a complete understanding of the prices at which commodities are offered and purchased.
 - e) Ideal mobility of production factors and products: Goods and factors should be able to move freely between industries. Goods should be able to migrate to the highest-paying markets.
 - f) Absence of price control: There is no price regulating authority in perfect competition. Prices are decided freely by market forces of demand and supply conditions.
 - g) No selling cost: Since there is price similarity perfect knowledge therefore no need for advertising of products.
- ❖ **Short sale:** A short sale is when a seller sells an asset or stock that he or she does not own. It's a deal in which an investor sells borrowed securities in expectation of a price drop, with the seller obligated to return an equivalent number of shares at a later date. A seller, on the other hand, owns the security or stock in a long position. CAPM is applicable in case of investor can short sell.
 - ❖ **Risk-free Assets:** Portfolio theory is concerned with a volatile asset portfolio. It is later believed that a risk-free asset is available for investment. A risk-free asset is one with a guaranteed return, such as government bonds; the risk associated with such security is zero. An investor can put a portion of his money into a riskless asset, which is the same as lending at the riskless asset's rate of return. He would be putting his money into a mix of volatile and risk-free properties.
 - ❖ **Security pricing behaviour in a multifactor framework:** modern securities market is a complex phenomenon involving the simultaneous operation of many factors. These all factors play an important role in the return generating process. Arbitrage pricing theory is such a model which attempts to explain security pricing behaviour in a multifactor framework. These factors may be growth in GDP, inflation, change in interest rate, etc. The impact of a specific factor on a specific security return is measured by the factor-specific beta coefficient.
 - ❖ **Identification of factor structure:** APT proposes that a set of multiple factors is needed to explain security return and security pricing. But the theory does not identify the factor structure that affects security returns. Identifying the factor structure is a serious challenge in the application of the APT model for asset pricing.
 - ❖ **Probability Distribution:** Knowledge of the probability distributions of common stock returns is needed both as input information for asset selection procedures and as a benchmark for evaluating the performance of these asset selection models. Security return is uncertain so probability must be used where the outcome is uncertain. (William Breen, James Savage 1968)
 - ❖ **Yield to Maturity:** This factor is under consideration while selecting fixed-income security. It is the rate of return that an investor will receive if he invests in a fixed income investment and retains it until it matures. At the time of the end of the maturity period investor gets repayment of capital. The investor has to decide whether he should go which security.

- ❖ **Default Risk:** Default risk refers to the possibility that a corporation or person may be unable to meet their debt obligations' payment obligations. Almost all types of credit extensions expose lenders and investors to default risk. A higher required return and, as a result, a higher interest rate is correlated with a higher level of risk. At the time of selecting fixed-income security, investors should assess the risk of default. He can look at the credit ratings. If no rating is available, examine relevant financial ratios of the firm and assess the general prospectus of the related industry.
- ❖ **Tax savings:** Investment in debenture, bonds, etc provides tax savings to investors. In past years several avenues offered tax savings, but very few do so. Debenture and bonds provide interest and it is deductible at the time of calculating profit and losses for the enterprise. Tax is payable at a profit after interest therefore it saves tax payment which is not available to shareholders as they get voting right in management and dividend which is the appropriation of profit not charge to profit.
- ❖ **Mean-Absolute deviation:** Portfolio performance can be measured by absolute deviation instead of standard deviation as a measure of risk. Many difficulties of the Markowitz model can be removed by using this model such as a large amount of data etc. while maintaining its advantages. In this method, returns are calculated by mean but the risk of security is calculated as the standard deviation of returns.
- ❖ **Peer Firm's earning Predictability:** Stock selection depends on the earning capacity of peer firms. Peer firms are those firms that have similar features and objectives. If a company offers initial public offer investors can anticipate the return from its peer performance. Peer firm financial statements can be analyzed for that purpose. A comparative study can also be done. Some of the strategies that can be used for it are trend analysis, comparative statement, common size statement, ratio analysis, cash flow statement, and fund flow statement.
- ❖ **Market Timings:** Market timing is a trading or investment technique. It is the act of entering or exiting the financial market, as well as the selection of asset classes based on future forecasting methods. These forecasting methods are both quantitative and qualitative. Qualitative methods include jury of executive opinion, salesforce opinion, expert opinion, etc. The quantitative technique includes time series analysis, moving average. Investors have to keep in mind the various price and return forecasting techniques while selecting securities for the portfolio.

OPPORTUNITIES OR FUTURE PROSPECTUS OF PORTFOLIO SELECTION

Despite many challenges, there are many areas of future prospect for the problem under study. These areas are as follows:

- ❖ **Factor structure may be identified:** As stated earlier APT does not provide the structure of factors affecting security returns. Studies may be done to identify this structure.
- ❖ **Stability of factors:** Empirical studies can be done on the stability of factors over time. To know whether the factor affecting security returns and price are stable over time or not, if not researcher should try to find out the reason behind it. Does the same set of factors explain security returns and prices at different points in time?
- ❖ **Mid Year Performance:** In the past portfolios are evaluated based on performances at the end of the financial year or year. Nowadays there is a new way to measure performance is midyear performance, a portfolio can be revised, risk can be shifted in the second half of the financial year. (Lee, J. H., Trzcinka, C., & Venkatesan, S. 2019)
- ❖ **Penny Stocks:** Penny stocks are those that have a high risk, low liquidity, and a high knowledge gap. When penny stocks are included in a portfolio, it produces a higher return than conventional models. Penny stock price ranges could be separated into various groups in the future study, and the peculiar characteristics and instability of penny stocks, such as transaction abnormalities and abrupt price peaks, could be thoroughly studied. (Song, I., & Park, Y. K. 2019)

- ❖ **Equity Crowdfunding:** It's a modern investment format in which investors can buy unlisted shares from a business that doesn't meet the criteria for an initial public offering. It has benefits, but it also has the possibility of fraud, hearings, insolvency, and shareholder equity dilution. Regulation is a natural response to negative externalities such as systemic risk and adverse selection induced by asymmetric information. (Lee Emily 2019)
- ❖ **Online Portfolio Selection:** online portfolio selection includes receiving financial data and making portfolio selection through an online platform. The benchmark approach is the first of four strategies for choosing an online portfolio. The second strategy is to pursue the winner, which means that more profitable assets will continue to do well in the future and will be given more weight in the portfolio. The third strategy is to pursue the losers, believing that the best-performing assets will not continue to perform well in the future and increasing the weight of low-performing assets in the portfolio. Last but not least, there's the pattern matching strategy, which makes portfolio decisions based on similar patterns rather than explicit instructions? In the future, more advanced artificial intelligence techniques and machine learning to improve portfolio performance can be introduced in this area. (Hao Gaun, Zhiyong An 2019)
- ❖ **Market timing and global portfolio performance:** Many studies have been done regarding the relation of market timing and the Indian stock market but there is a need to evaluate the performance of portfolios at a global level in relation to market timing. Studies would be done about the superior timing skills of foreign institutional investors. A study about the security selection skills of foreign institutional investors may be conducted. (Dr. K N Badhani, Dr. Ashish Kumar 2019)
- ❖ **Deep Learning technique:** The portfolio selection problem can be solved by neural network technology. For this learning-based strategy for optimum selection is used. In the future deep learning technique can be applied for the prediction of volatility. (Shun Chen, Lei Ge 2021)

CONCLUSION

Portfolio management is choosing the right mix of assets that have the highest expected return and minimum risk. Portfolio management began with Markowitz's modern portfolio theory. His work is extended by William Sharpe and Stephan Ross and many others. It has many issues like diversification and a feasible set. Security return depends on market return and other economic and political factors. Investors face challenges like systematic risk which cannot be diversified. Investors have to be also decided about tax saving and liquidity. More research needs to be done in the future in the area of midyear performance, equity Crowdfunding, online portfolio selection.

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BAFE011:
**A STUDY ON INTENTION TO PURSUE ACCOUNTING
QUALIFICATION AMONG ACCOUNTING UNDERGRADUATES IN
MALAYSIA**

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Abstract

In Malaysia the number of undergraduates who intend to pursue professional accounting qualification after completing their accounting degrees is lacking. The lack of interest among the undergraduates has led to a shortage of qualified accountants. The Covid19 pandemic has further exacerbated the shortage as the education sector grapples with the challenges of online learning and reduced enrolment. This paper examines the factors that influence the intention of accounting graduates in Malaysia to pursue professional accounting qualifications. Previous studies focused on public universities and on accounting graduates in other countries. The theoretical considerations are the Theory of Planned Behaviour for the variables of self-interest, self-esteem, influence from reference group and resource facilitating condition and the Social Cognitive Theory for the variable of self-efficacy to explain behavioural intentions. Purposive sampling was used to collect data and a total of 291 valid questionnaires were collected from accounting undergraduates from three private universities. Multiple linear regression was used to formulate the regression model and findings show that the variables of self-efficacy, self-interest, self-esteem, influence from reference group and resource facilitating condition are significantly related to the undergraduates' intention to pursue professional accounting qualification. These findings contribute to the empirical evidence as the research in the Malaysia setting has been limited and provides further insights to address the shortage of accountants in the country.

Keywords: intention, accounting qualification, Theory of Planned Behaviour, Social Cognitive Theory, Malaysia, private university, accounting graduates

BAFE015:
**DO CHILDREN'S SPENDING BEHAVIOUR AND FUTURE
ORIENTATION VARY BY TIME SPENT WITH THEIR PARENTS?**

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Abstract

Parents play an important role to influence their children's spending behaviour and bring a critical impact toward their future orientation. This study aims to identify time spent with children will influence their children spending behaviour and future orientation. A total of 392 completed questionnaires have been collected from the respondents in a tertiary education institution in Kedah, Malaysia. Statistical Package for Social Science (SPSS) version 23.0 and Partial Least Square (PLS – SEM) 3.0 have been employed to generate descriptive and inferential analysis to answer the research objectives. The findings reveal that time spent with children bring a significant impact to children's spending behaviour and future orientation. The implication from this study could serve as a wake up call among parents that time spent with their children play a crucial influence to transfer experience and financial knowledge to their children in building up their spending behaviour and future orientation.

Keywords: Time spent, spending behaviour, future orientation, financial knowledge

INTRODUCTION

Children gain knowledge from various prospect as from parents, school, or regular day to day existence. They will observe and practice accordingly to their surrounding. Thus, it is crucial to sustain a positive routine during their early years of their life as the capacity of autonomous perusing and extraction of information increases across the time. An active participation by parents in all aspects of their children such as social, emotional, and academic development is believed to shape a child's spending behaviour in future (Castro, Expósito-Casas & López-Martín, 2015).

Moreover, when parent share their experience on financial practices with their children, it will positively impact their children to save more for future (Kim, LaTaillade, & Kim, 2011). According to Cordero-Coma and Esping-Andersen (2018), family's economic, social, behavioural, and compositional characteristic present toward a child's life outcome.

The greatest concern is to assure children able to gain a proper financial knowledge to allow them to make a day-to-day financial decision making. The role as parents will be inspiring their children in presenting the right spending behaviour. The objective of this study is to examine the relationship between parents' social economics' status and time spent with children toward children spending behaviour and future orientation.

LITERATURE REVIEW

Parental Influence

According to Sarwar (2016), guardians play an important part in trim and forming their children's behaviour. Often, children will follow their parent's activity. In the case of shaping a decent spending behaviour, it should be started since puberty and all through adulthood. Kids or Teenagers have various methods of finding out about monetary issue and probably they will learn by the blend of deliberate and inadvertent methodologies from their parent. Web-based media sources from TV program, radio, social media, and others contributed monetary artistic to the kids. Consequently, parent will show others how it done to start monetary instruction to their youngsters preceding web-based media evaluated by their kids (Shim, Soyeon, Joyce Serido, Leslie Bosch, & Chuanyi, 2012)

Time Spent with Children

Life is busy, especially for parents and families. Spending quality time with children and giving them undivided attention can keep them mentally and emotionally strong (Jones, 2017). According to LeBaron, Holmes, Jorgensen, and Bean (2020), parents who spend their time to teach their children about money indicate a positive impact to their children's financial behaviours. Parents are playing essential roles for conducting financial education with their children in ensuring their children to establish money management (Zulfaris, Mustafa, Mahussin, & Daud, 2020)

Spending Behaviour

Sekar and Gowri (2015) clarified that financial behaviour is known to be influenced by financial attitude, which is the assessment of a person about his or her belief in financial planning and the tendency toward goal setting towards saving and spending their money. Generally, the factor that impacts financial literacy is financial behaviour which incorporates the ways of managing money. According to Esmail Alekam (2018), young generation are among the highest age group that have fallen in the critical problems of the bankruptcy issue. This is due to young generation who live beyond their earnings, and they do not have appropriate financial planning or a well-organized effort that change their attitude.

Future Orientation

Future orientation has been portrayed as the degree to which potential future consequences of an action influenced by current decision. Children's future orientation more related with parental influence in their daily life. According to Hanson (2018), family discussion on financial planning brings a positive impact to the children financial knowledge that leads to future orientation. This supported by Ming-Te and Salam (2014), high school students' future orientation affected directly by their parents' involvement. Despite that, parent engage mentally and physically impact their day-by-day life shape their children behaviour leading to the outcome on their future orientation.

Rational Choice Theory

This study employs Rational Choice Theory. According to Levin and Milgrom (2004), rational choice refers to the process of determining the most preferred option while considering other relevant factors such as demographic factors, financial behaviour, and social attributes in making rational decision. Furthermore, Kelty (2018) stated that rational choice theory cope with the phenomenon and how it impacts the human behaviour in decision making process. Most important is to consider the parental income as an investment that engage in conscious decision making either will lead to positive or negative outcomes to their children's future orientation.

CONCEPTUAL FRAMEWORK

Figure 1: Research Framework

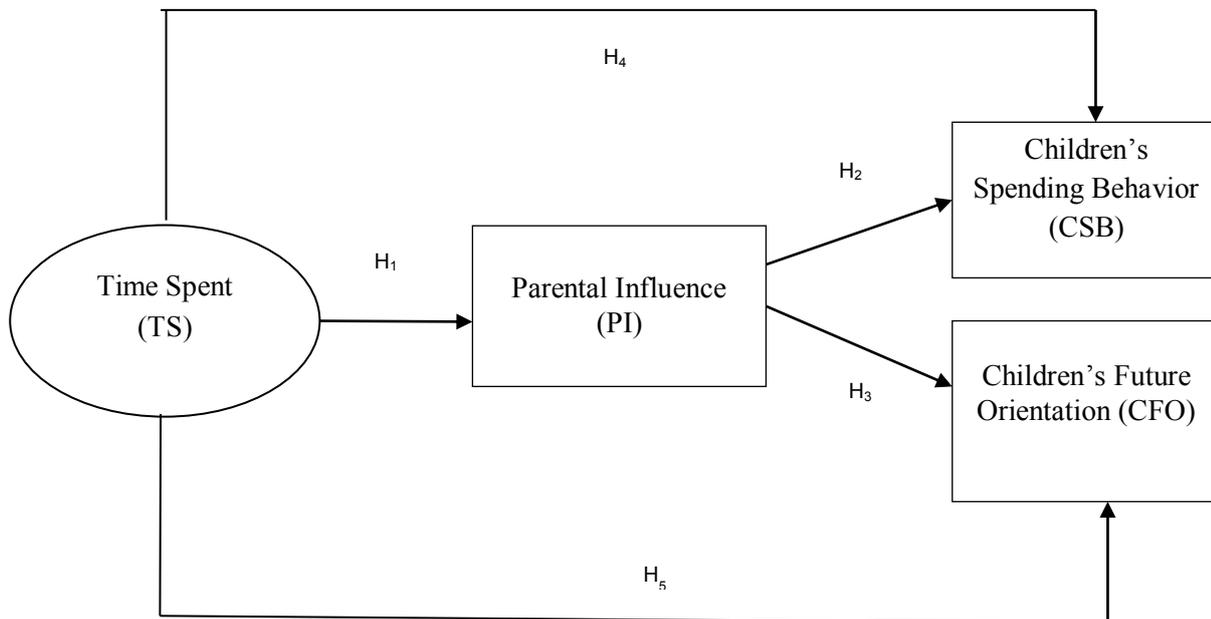


Figure 1 shows research framework for this study. Time Spent (TS) served as independent variables. Children's Future Orientation (CFO) and Children's spending Behavior (CSB) as dependent variable mediated by Parental Influence (PI).

Hypotheses have been formed as below:

H₁: TS influence PI

H₂: PI influence CSB

H₃: PI influence CFO

H₄: PI mediates the TS toward CSB

H₅: PI mediates the TS toward CFO

RESEARCH METHODOLOGY

This exploratory study aims to examine either children spending behavior and future orientation will be vary by time spent mediating by parental influence. The study employs questionnaire survey which developed from reading on the past studies related to the time spent, parental influence, spending behavior and future orientation's variable.

The respondents consist of students from a higher institution in state of Kedah. Reason of said research location being selected due to the geographical area. Kedah located farthest from metropolitan city namely Kuala Lumpur on the map of Peninsular Malaysia. Cost of living in urban city is much more expensive than in rural area. Kedah recorded as -0.3 of consumer price index (CPI) compared to Kuala Lumpur at 0.5 (Department of Statistics, 2019). Thus, Kedah becomes the targeted location because the study aims to identify the spending behaviour among tertiary institution students in rural area.

The population in the said institution involve 28,866 students, 23,907 of them are undergraduates while 4,959 are postgraduate students. According to Krejcie and Morgan (1970), with the population approximate 30,000, it requires sample size of 379 respondents. Thus, 400 questionnaires have been distributed to respondents to cover the possibility of incomplete questionnaire received. A total of 392 completed questionnaire has been obtained and key in to an excel sheet for data analysis via statistical software. The statistical software employed for this study is

Statistical Package for Social Science (SPSS) version 23.0 for descriptive analysis. Whereas, Partial Least Square – Structural Equation Modelling (PLS –SEM) 3.0 has been employed to generate inferential analysis such as factor loading, composite reliability and average variance to answer the research objectives.

DATA ANALYSIS

Descriptive Analysis

A total of 392 valid data obtained and analysed accordingly. As shown in Table 1, there are 274 (69.90%) of female respondents. 192 (49%) respondents are fall in age range 21 – 22 years old. Half of the total respondent's parent income less than RM3, 000 per month which is 196 (50%). Most of the parent education qualification are secondary school graduate with 193 (49.20%) for father's education qualification and 221 (56.40%) mother's education qualification.

Table 1: Respondent's Profile

	N	Percentage
Gender		
Male	118	30.10
Female	274	69.90
Age		
19 - 20	135	34.40
21 - 22	192	49.00
23 - 24	65	16.60
Parent's monthly income		
Less than RM3,000	196	50.00
RM3,001 – RM6,000	107	27.30
RM6,001 – RM9,000	39	9.90
RM9,001 – RM12,000	25	6.40
More than RM12,001	25	6.40
Father's Education Qualification		
No formal education	20	5.10
Primary school	41	10.5
Secondary school	193	49.20
Diploma / Pre-U	70	17.90
Degree	50	12.80
Master Degree	14	3.60
PhD	4	1.00
Mother's Education Qualification		
No formal education	20	5.10
Primary school	33	8.40
Secondary school	221	56.40
Diploma / Pre-U	53	13.50
Degree	49	12.50
Master Degree	16	4.10

Source: Developed for research

Factor Loading

The planned instruments experienced the procedure of legitimacy and unwavering quality check to ensure for the credibility of the questionnaire and the outcomes. As recommended by Hair et al. (2016), PLS-SEM suitable for exploratory research for linear relationship between latent constructs and contain factor loading, composite reliability and average variance were utilized to access for validity and reliability check. Table 2 shows that the factor loading for all items surpassed the suggested estimation of 0.5 (Hair et al., 2016).

Table 2: Outer Loading Result

Variable	Item	Result
Parental Influence (PI)	PI 1	0.843
	PI 2	0.867
	PI 3	0.832
	PI 4	0.834
	PI 5	0.766
Spending Behaviour (SB)	SB1	0.709
	SB 2	0.697
	SB 3	0.765
	SB 4	0.699
Future Orientation (FO)	FO 1	0.640
	FO 2	0.831
	FO 3	0.583
	FO 4	0.976

Source: Developed for research

Reliability Test

As shown in Table 3, the result of the degree of consistency for the latent constructs are fallen to the degree of acceptable according to the Cronbach's alpha more than 0.6 as recommended by Hair et al., (2016). The internal consistency for the variables is greater than the benchmark of 0.7 for composite reliability. The convergent validity met the requirement of above 0.5 recommended by Hair et al., (2016) for average variance extracted.

Table 3: Reliability Test

Construct	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Future orientation	0.694	0.808	0.518
Spending behavior	0.686	0.810	0.516
Parental influence	0.886	0.916	0.687

Source: Developed for research

Inter-construct Correlation

As shows in Table 4, Heterotrait-Monotrait ratio (HTMT) used to define the manifest variables in any latent construct is distinct from others in path model (Hair et al., 2016). The result of correlation between constructs and all the values are lower than 0.85 which indicate that all the constructs have a good level of validity.

Table 4: Heterotrait - Monotrait Ratio (HTMT)

Construct	Future Orientation	Parental Influence	Spending behavior
Parental influence	0.391		
Spending behavior	0.668	0.479	
Time Spend	0.050	0.172	0.036

Source: Developed for research

Inferential Analysis

By surpassed adequate reliability, convergent validity, and discriminant validity, all the latent variables met the standards for a measurement model. Thus, path coefficients can be accounted for the results of a PLS structural model. Figure 2 and Table 5 shows the significance of the path coefficients for, time spent, parental influence, spending behaviour and future orientation. The significant level of 5 percent being implement as the critical value. As a result, time spent was significant with parental influence and parental influence was significant with spending behaviour and future orientation. However, time spent was not significant with spending behaviour and future orientation. To clarify with the mediator effect, a specific indirect effect being tested.

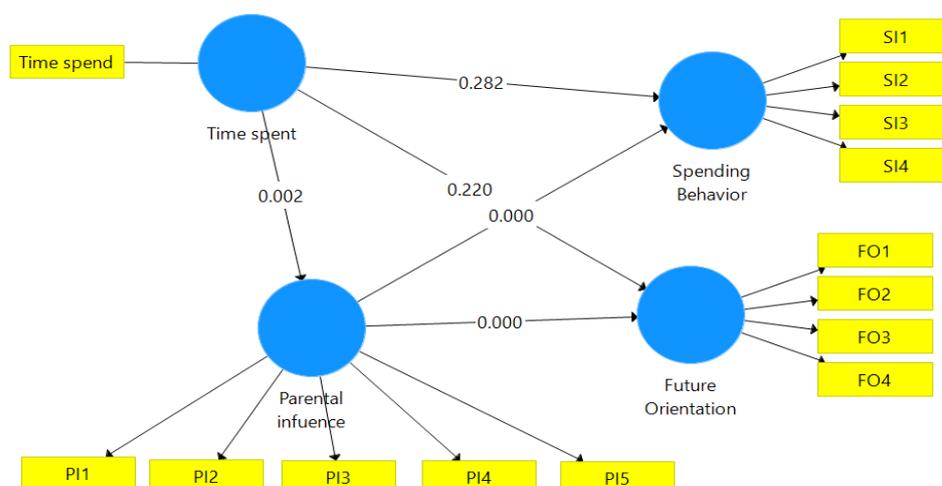


Figure 2: Bootstrapping Result from PLS-SEM

Table 5: Bootstrapping Result

Constructs	P Values	Path Coefficient	Result
Parental influence → Future orientation	0.000	0.354	Significant
Parental influence → spending behaviour	0.000	0.395	Significant
Time spent → future orientation	0.220	-0.062	Not Significant
Time spent → Parental influence	0.002	0.166	Significant
Time Spent → Spending behaviour	0.282	-0.055	Not significant

Table 6 shows that it was a significant specific indirect effect toward time spend, spending behaviour and future orientation. In this manner, parental influence play as a mediator variable between spending behaviour and future orientation.

Table 6: Specific Indirect Effect

Constructs	P value	Path coefficient	Result
Time Spent → parental influence → spending behavior	0.010	0.067	Significant
Time Spent → parental influence → Future orientation	0.003	0.062	Significant

CONCLUSION AND DISCUSSION

This study gives in profound investigation on the influence of time spent toward their children spending behaviour and future orientation. In the interim, time go through with children take the principal influences of impact. In addition, the finding from this study could create awareness among parents that they are so imperative to build up their children's spending behaviour and plan for their future.

This finding was consistent with Amuda (2016) that adequate time spent with children could develop positive behaviour. Furthermore, Christina (2019) stated time spending impact on children ability especially on their behaviour and it is also not due to socioeconomics. Time spent by parent with their children is more important to develop their children's behaviour. This study is significant contribute to parents through time spent with their children to develop positive behaviour. Moreover, parental influence also describes as a broad concept in develop children behaviour and future orientation. The result of this study enhance the understanding of the interrelated time spends of parents with children behaviour and future orientation.

Taking everything into account, parents could have their influence to invest more energy with their children; as role model to mentor their children to embrace a satisfactory spending behaviour to manage money well and future direction. This study contains two limitation which are the sample of this study was centred on undergraduate students and restricted to a public university. A more extensive scope of respondents from various age ranges can be executed for future research to improve the exploration study.

This research output will provide clear insight to various stakeholders namely government, NGO, educators and community. This study also contributes towards adding values to literature as time spent by parent will influence their children behaviour and future orientation and this new outcome definitely broaden the knowledge of prevailing literature in the context of children's spending behaviour and future orientation.

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BAFE017:
**PRACTICAL APPLICATION OF GREEN ACCOUNTING: THE CASE
OF LITHUANIAN COMPANIES**

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Abstract

European Union (EU) directive 2014/95/EU regulates the preparation of social responsibility report and one part of this report relates to environmental aspects. The required environmental information could be collected and accounted for by applying green accounting practices. Unfortunately, green accounting has no clear practical applicability and accounting standards do not regulate this. Therefore, the aim of the research is to assess whether companies apply green accounting and whether there is a link between the preparation of a social responsibility report and green accounting.

To achieve the aim of the research, i.e., to reveal the concept of green accounting and to assess the possibilities of adapting traditional accounting to green accounting, scientific literature analysis, synthesis, systematisation, and comparison were applied. Based on this, an empirical study was conducted, for which Lithuanian companies were selected as case studies. First, the financial reports of listed companies in NASDAQ Baltic Vilnius were analysed. Second, an additional pilot study was performed using a questionnaire designed to investigate the preparation of social responsibility reports and the application of green accounting in Lithuanian companies.

It has been identified that companies do not have a clear strategy on environmental issues and this may be the reason why Lithuanian companies do not apply green accounting. Although the results of the questionnaire have revealed that companies do not apply green accounting, the analysis of the financial reports show that there is a basis for green accounting. The focus was placed on those companies that calculate various environmental indicators separately from the financial accounting system. The conclusion was reached that companies lack information on the application of green accounting in the common accounting system.

Keywords: accounting; environmental accounting; green accounting.

1. INTRODUCTION

There are discussions about sustainable business in the climate change context, however, there are no clear guidelines on how to assess a company's level of sustainability and how to compare it with another company. It is a common practice to compare companies on the basis of financial indicators, and green accounting, therefore, can play an important role in this regard. Financial information from the green accounting data may disclose the social responsibly level of the business (Senn, Giordano-Spring, 2020). Similar green accounting financial information would make it easier to compare such companies.

Unfortunately, green accounting systems are complex and lack practice combined with theory (Chen et al., 2006, cited Kan, Meng, 2015). There are insufficient guidelines on accounting standards. There are some aspects of environmental liabilities in international accounting standart (IAS) 37 and IAS 16. Moreover, the EU Directive 2014/95/EU regarding disclosure of non-financial information and accounting standards does not specify how to adapt traditional accounting to green accounting (Senn, Giordano-Spring, 2020). This shows that the requirements of government regulations and the EU on environmental issues are increasing, however, the adaptation of accounting to environmental issues is not ensured (Kumar, Chatteraj, 2020).

Business is identified as having a significant impact on the effects of climate change in setting a “long-term vision to find environmental solutions” (Kiranmai, Swetha, 2018). Therefore, it is important to carry out research based on the green accounting and accounting theory for adopting accounting standards, which are currently controversial (Chen et al., 2006, cited Kan, Meng, 2015).

This research is dedicated to investigating and discussing these issues. The aim of the research is to assess whether companies apply green accounting and whether there is a link between the preparation of a social responsibility report and green accounting. The paper is structured as follows: Section 2 describes the concept of green accounting and how it adapts to traditional accounting; Section 3 explains the methodology applied in the research; Section 4 presents the results of the empirical research; and Section 5 ends the paper by presenting its main conclusions.

2. LITERATURE REVIEW

2.1. Concept of ‘green accounting’

Financial accounting data present the company’s financial picture and green accounting is considered as a subset of traditional accounting (Jayanthi, 2015). Therefore, green accounting data are integrated into the common accounting system of the company (Gonzalez, Mendoza, 2021). Green accounting integration into the overall accounting system ensures “environmental performance in financial processes” (Shaikh, 2016). The overall accounting system allows understanding and managing traditional economic goals and environmental goals (Kan, Meng, 2015; Kiranmai, Swetha, 2018).

The environmental assets, environmental liabilities, environmental revenue and environmental expenses might be developed and clarified by including the green accounting system into traditional accounting (Shaikh, 2016; Gonzalez, Mendoza, 2021). Green accounting provides access to environmental information and measures the environmental aspects that affect business sustainability (Gonzalez, Mendoza, 2021).

With the financial information of these environmental objects, a more detailed analysis of a company’s sustainability can be performed and the obtained analysis data can be compared with other companies. In addition, the information and results of the analysis can support investment decisions, determining the costs, products and services details, performance evaluation, and many other business decisions (Shaikh, 2016).

The main advantage of green accounting is that it can help to manage both operational costs and environmental risks at a company and country level (Shaikh, 2016). Green accounting is important not only for the development of the company but also for the development of the country’s economy and the management of natural resources (Kan, Meng, 2015). Green accounting measures the environmental, social, and economic impact of business and communicates about the costs of a company or the actual or potential impact of the national economy on the environment (Jayanthi, 2015).

The concept of green accounting is quite broad and its benefits can be seen at both company and country level. The integration of green accounting into traditional accounting has to be encouraged.

2.2. Adapting traditional accounting to green accounting

A report released by the European Commission (2011) highlights the potential of green accounting application at company level to deliver green growth. Financial accounting in companies is also becoming important in order to achieve a 55 per cent reduction in CO₂ emissions by 2030 and net-zero carbon emissions by 2050. Wolfersdorff’s (2021) report states that financial accounting systems do not currently require collecting and disclosing financial indicators of a company’s sustainability. The current financial accounting system does not include the external costs of economic activities (their potential benefits). Greenhouse gases (GHG) emissions impose costs on nature, society, and ultimately companies, which means that companies’ financial statements do not give a true and fair view of their economic performance. Wolfersdorff (2021) notes that the next steps for the European Commission should be to improve financial accounting procedures.

The Trustees of the IFRS Foundation (2021) have launched the discussion on sustainability reporting, which has highlighted the urgent need for global sustainability reporting standards. Discussions on green accounting have begun and accounting standards will be developed in the future. However, to this day, companies are already subject to various environmental requirements, and green accounting is needed today. Therefore, this section aims to assess the differences between green accounting and traditional financial accounting.

As discussed in the section on the concept of green accounting, this is one of the subsets of traditional accounting (Jayanthi, 2015), yet green accounting also falls into subgroups (Jayanthi, 2015; Kumar, Chatteraj, 2016; Ochotorena, 2017):

- environmental management accounting aims to provide data for full cost accounting, life cycle costing, and strategic planning;
- environmental financial accounting aims to provide true and fair information for financial statements and disclose information about environmental liabilities, revenue, expenses;
- environmental national accounting aims to provide environmental aspects in the national accounts focus on natural resources, environmental costs, and externality costs.

Companies consider two subgroups of green accounting – environmental management accounting and environmental financial accounting. Various researchers (Shaikh, 2016; Kiranmai, Swetha, 2018; Gonzalez, Mendoza, 2021; and others) discuss why it is important to integrate green accounting into traditional accounting and what its advantages are. Rounaghi (2019) noted that green accounting can be applied in various companies, but for that, various people must be involved as accountants, managers, engineers, chemists, etc.

In order to properly implement green accounting in a company, it is necessary to know its differences from traditional financial accounting. Various researchers (Shaikh, 2016; Kiranmai, Swetha, 2018; Gonzalez, Mendoza, 2021) have discussed these differences. A comparison of traditional accounting and green accounting is presented in Table 1.

Table 1: Comparison of traditional accounting and green accounting

Traditional Accounting	Green Accounting
Provides economic (financial) aspects.	Links between economic goals and environmental goals. Integration of economic, social aspects and environment.
Shows the general economic situation	Shows environmental assets, environmental liabilities, environmental income, and environmental costs. Shows sustainability performance.
Elements of financial, management, and tax accounting.	Elements of environmental financial accounting, external and internal ecologic accounting, environmental management accounting.
Financial statements, internal reports.	Environmental and sustainability reports.
Regulated.	Partly regulated.

Source: created by the author under Shaikh (2016), Kiranmai, Swetha (2018), Gonzalez, Mendoza (2021).

As shown in Table 1, financial accounting is regulated and designed to disclose the economic aspects, the financial situation of the organisation, and the preparation of financial statements. Meanwhile, the various environmental aspects are regulated by various law acts, but the application of green accounting is not regulated. A comparison of traditional financial accounting with green accounting shows its advantages through the combination of different objectives (economic and environmental). The results of green accounting are presented in environmental or sustainability reports.

These reports are the last components of green accounting, where users of the accounting information can access environmental information conveyed through financial indicators. Various researchers (Kiranmai, Swetha, 2018; Gonzalez, Mendoza, 2021) analysed the elements of green accounting (see Fig. 1).

Figure 1: Green accounting application scheme



Source: created by the author under Kiranmai, Swetha (2018), Gonzalez, Mendoza (2021).

In order to integrate green accounting into traditional accounting, a company must have an environmental policy and develop environmental strategies. Only then green accounting methods and their practical application can be discussed. Once these things are in place, companies will be able to prepare environmental reports properly (see Fig. 1).

Based on the environmental strategy, accounting policies can be complemented by following green accounting guidelines. Although green accounting uses the same accounting methods as traditional accounting, green accounting requires their adaptation. The following stages of adaptation of financial accounting to green accounting are distinguished (Sadowska et al., 2019):

- recording and documentation – environmental taxes, penalties, fixed asset depreciation, ecological investments, salaries;
- controlling – contracts, inventory, assets, risk, human capital;
- reporting – life cycle assessment, environmental protection, educational activities, environmental profit (losses), etc;
- chart of accounts – modifying to registering an environmental event;
- valuation methods – apply new valuation guidelines and standards for environmental activities.

Complementing the company's existing accounting policies with the mentioned aspects would allow collecting green accounting data in a common accounting system and prepare environmental reports. If the guidelines for adapting accounting to green accounting were harmonised at the EU level, it would be easier to make comparisons between individual companies. One of the first steps could be to adapt the chart of accounts. This would make it easier to present data in environmental reports. As the end of the accounting process involves the preparation of a financial report, the empirical research was based on the information provided in the financial reports looking for marks about the possible application of green accounting. The methodology of the empirical research is presented in Section 3.

3. RESEARCH METHODOLOGY

3.1. Sampling design and characteristics

In order to assess the application of green accounting in Lithuania, companies from the NASDAQ Baltic Vilnius Stock Exchange were selected for the assessment. The list included 28 companies. The research was carried out according to the information provided in the financial reports of 2016–2020. This period was chosen to assess the changes in EU companies since 2017 due to the new social responsibility reporting regulation. The aim of the research was to determine which information was disclosed in the financial report – environmental strategy, environmental policy, environmental report, and green accounting data.

Only half of all listed companies prepared social responsibility reports for 2020 (see Table 2). Based on the content of the financial reports, it was found that 40 per cent of the companies analysed

could potentially apply green accounting. The methodology for interpreting the possible application of green accounting is presented in the research procedure.

Table 2: Companies analysed by sector

Sector	Companies	SRR*	GA**	ISO 14001	ISO 22000	ISO 50001
Finance	6	1	1	-	-	-
Energy	5	2	3	3	-	-
Food	4	4	4	2	4	-
Agriculture	3	1	1	-	-	1
Textile	2	-	1	1	-	-
Other manufacturing	3	3	-	3	-	-
Other	5	4	2	2	-	-

Source: created by the author based on the companies' financial statements published on the NASDAQ Baltic Vilnius Stock Exchange

*SRR – preparation of a social responsibility report in 2020

**GA – the data provided in the financial statements for 2020 show various data that may reflect the application of green accounting

As presented in Table 2, all companies operating in the food sector prepared social responsibility reports and provided green accounting information. The manufacturing sector included companies producing refrigerators, furniture and paper. Although these companies prepared social responsibility reports, they did not provide any environmental accounting data. In other sectors, there was a tendency of providing green accounting data in social responsibility reports. If a company has not prepared social responsibility reports, annual information is rarely provided in annual reports. It is also noted that social responsibility reports were prepared by companies that often had environmental standards in place. The relationship between green accounting and environmental reporting is assessed in this research following the research procedure.

A questionnaire survey was carried out to find out whether Lithuanian companies apply green accounting, as this information was not fully disclosed in their financial statements. The questionnaire was sent to the companies that pay the most taxes to the national budget. According to the list of companies that paid the most taxes in the first quarter of 2021, published by the State Tax Inspectorate under the Ministry of Finance of the Republic of Lithuania¹, a questionnaire was sent by e-mail to 100 companies in June–July 2021. The companies were selected from various sectors such as agriculture, food industry, manufacturing, energy, construction, water supply and waste treatment. Completed questionnaires were returned from 13 companies.

3.2. Research procedure

Content analysis was used for financial reports analysis. Content analysis is one of the research methods used to analyse and code qualitative information. The content analysis method was employed to code qualitative information in different scales, for example, 0–1; 0–3; 1–5, etc. (Galant, Cadez, 2017), which depends on the research question and the researcher.

Table 3: Coding scale and meaning

Area/Scale	0 – no applied or undisclosed information	1 – partially applied	2 – applied
Environmental strategy	Did not have or disclose information about the approved environmental strategy.	It was revealed that environmental protection is part of the company's strategy.	The company had an approved environmental strategy.

¹Taxpayers paying the most to the STI account. Access: <<https://www.vmi.lt/evmi/en/daugiausiai-i-vmi-saskaita-sumokantys-mokesciu-moketojai>>

Environmental policy	Did not have or disclose information about the approved environmental policy.	The company has approved environmental rules, standards or pursues environmental goals.	The company had an approved environmental policy.
Social responsibility report	Did not prepare or did not submit a report.	<i>Not assessed in the research.</i>	Prepared a report.
Other environmental reports	Did not prepare or did not submit a report.	Environmental aspects were presented in other reports, for example, the annual report.	Prepared a separate environmental report.
Application of green accounting	Not applied or not disclosed.	It was assumed that green accounting could be applied if the information about GHG emissions amount, energy consumption and waste volume, environmental taxes, environmental costs, revenues, etc. was presented.	Information on the application of green accounting was disclosed.

Source: created by the author

According to the literature review and Figure 1, the research aimed to assess whether companies operating in Lithuania (listed on the NASDAQ Baltic Vilnius Stock Exchange) disclose in their financial reports information on their environmental strategy and policy, application of green accounting; or prepare environmental reports, including social responsibility reports. In this research, a scale of 0–2 was chosen to encode qualitative information into binary numbers (see Table 3).

All 28 companies listed on the NASDAQ Baltic Vilnius Stock Exchange were rated in five areas presented in Table 3 by assigning an appropriate rating scale. These coded data were used in the next steps of the empirical research. It was also additionally assessed whether the company applies an environmental or similar standard with a score of 1 if it applies to marking and 0 – if it does not apply.

After content analysis and assigning a score for each area on the selected scale, an average scale score was derived to evaluate which companies attach more importance to the disclosure of environmental issues and the possible application of green accounting. Average numbers can be useful for comparing the situation between different companies, different sectors, or in terms of time.

As content analysis allows qualitative information to be encoded into binary numbers, binary logistic regression (BLR) was selected and is presented below. The aim of the empirical research is to assess what determines the application of green accounting in companies. Table 4 presents the BLR model that will allow estimating that it has a significant impact on green accounting.

Table 4: BLR model construct

Dependent variable (scale 0, 1)	Independent variables (scale 0, 1, 2)	Independent variable (scale 0, 1)
Application of green accounting (GA)	Environmental strategy (EN_STR) Environmental policy (EN_POL) Social responsibility report (SRR) Other environmental reports (OTH_REP)	Environmental or related standard (ISO) Sector (SEC)

Source: created by the author

The model was created using the BLR with Forward Stepwise function in IBM SPSS Statistics 27 to avoid multicollinearity problems. The variables were selected with respect to the statistical

significance, and the predictors in the model presented in detail in this research were statistically significant.

To determine the model that explains the need for green accounting, Table 5 presents the statistics of research data. Of the 28 listed companies, not all were listed on the NASDAQ Baltic Vilnius Stock Exchange in 2016–2020. Therefore, 133 financial reports were analysed.

The fit between the model and the data is $\chi^2(6, N=133) = 91.88$, Nagelkerke $R^2 = 0.711$, $p=0.000$ for model. Accepted factors were considered significant if the marginal significance (p-value) was less than 0.05. The next section discusses the results of the BLR model.

Table 5: Case processing summary

Factors	N	Marginal Percentage	
GA	no green accounting	94	70.7%
	elements of green accounting	39	29.3%
EN_STR	no strategy	120	90.2%
	elements of strategy	9	6.8%
	there is a strategy	4	3.0%
EN_POL	no policy	61	45.9%
	elements of policy	30	22.6%
	there is a policy	42	31.6%
SRR	no social responsibility report	86	64.7%
	prepares social responsibility report	47	35.3%
OTH_REP	no reports	43	32.3%
	some parts about environmental issues	88	66.2%
	separate environmental report	2	1.5%
ISO	no ISO standards	65	48.9%
	applies ISO standards	68	51.1%
SEC	Finance	27	20.3%
	Energy	20	15.0%
	Food	20	15.0%
	Agriculture	14	10.5%
	Textile	10	7.5%
	Manufacturing	19	14.3%
	Other	23	17.3%
Year	2016	25	18.8%
	2017	26	19.5%
	2018	27	20.3%
	2019	28	21.1%
	2020	27	20.3%
Valid	133	100.0%	
Missing	0		
Total	133		
Subpopulation	99 ^a		

Source: created by the author with SPSS software

An analysis of the companies' financial reports revealed that there were elements of green accounting, but no company disclosed in their reports whether green accounting was applied. A further survey was conducted to assess whether companies know and apply green accounting. The survey was conducted from June to July 2021.

Table 6: Questionnaire design

Area	Questions
Definition	Green accounting is a component of financial accounting that allows the measurement of a company's environmental aspects (assets, liabilities, income, expenses related to environmental issues) that affect business sustainability; this financial information can help to manage operating costs and risks related to environmental issues and natural resource management.
Green accounting	<p>1. Does your company apply green accounting?</p> <p>2. Has your company discussed in its accounting policy the green accounting methodology, i.e. the applicable criteria, methods for estimating assets, liabilities, income and expenses related to environmental issues and natural resources?</p> <p>3. Does the chart of accounts used in your company's financial accounting distinguish between separate sub-accounts for green accounting, i.e. in order to assess assets, liabilities, income and expenses related to environmental issues and natural resources? For example, to collect information on energy and resource consumption, waste generation, environmental investments, fixed assets used for environmental activities, raw materials needed for ecological purposes, etc.</p> <p>4. Does your company prepare reports on environmental issues? Yes, my company prepares a social responsibility report. My company prepares another report that discloses environmental issues. My company prepares no reports on environmental issues.</p> <p>5. Indicate whether you agree with the following statements (Yes or No): Green accounting is required from a financial point of view in accordance with financial reporting regulations or due to ongoing audits. Green accounting is needed from a social point of view to strengthen corporate social responsibility. Green accounting is necessary from an environmental point of view, as the company must pay attention and be responsible for the environment and natural resources.</p>
Financial accounting	6. What accounting standards do you apply to financial accounting? National or international accounting standards.
Sustainability	<p>7. Does your company have a sustainability standard in place and applied? (Yes or No). For example, the social responsibility standard SA 8000, the environmental management standard ISO 14000, or others.</p> <p>8. Would you say that your company is sustainable? (Yes or No) A sustainable company tries to ensure that it has no negative impact on the environment during the financial year, i.e. uses energy and water in moderation, chooses a safer production method, goes in the direction of ecological improvement of its products, etc.</p>

Source: created by the author

The questionnaire consisted of a definition of green accounting and 15 questions. Eight questions were dedicated to the assessment of financial and green accounting, sustainability of the company, and the remaining question assessed the size of the company and the person who completed the survey (see Table 6).

The data of companies presented in Table 7, as shown by the number of employees, the size of assets and income, were mainly filled by large companies, which are obliged to prepare a social responsibility report under the EU Directive.

Table 7: Demographics of companies

	Criteria	Companies	
Number of employees	>10	1	7.7%
	10–49	3	23.1%
	50–249	3	23.1%
	250–499	3	23.1%
	<500	3	23.1%
Average annual turnover	<0.7 ths. euros	1	7.7%
	0.7–8 ths. euros	4	30.8%
	8–40 ths. euros	3	23.1%
	<40 ths. euros	5	38.5%
Size of assets	>0.35 ths. euros	2	15.4%
	0.35–4 ths. euros	1	7.7%
	4–20 ths. euros	3	23.1%
	< 20 ths. euros	7	53.8%
Person who completed the questionnaire	Financier	6	46.2%
	Accountant	2	15.4%
	Director	1	7.7%
	Business owner	1	7.7%
	Other	3	23.1%

Source: created by the author

As the surveys were mainly filled in by financiers, it can be concluded that the survey answers are representative. The analysis of the results obtained is presented in the next section.

4. DATA ANALYSIS

After analysing the companies' financial reports and evaluating the five areas, the data were coded according to the scale presented in Table 3, and then the average size for each year was calculated (see Table 8).

Table 8: Results of content analysis of financial reports

Company	Sector	Year				
		2016	2017	2018	2019	2020
AMG1L	Energy	1	1	0.6	1	0.6
APG1L	Other	0	0.6	0.6	0.6	0.6
AUG1L	Agriculture	0	1	1.4	1.4	1.8
EWA1L	Agriculture	0.2	0.2	0.2	0.2	-
G RG1L	Manufacturing	0	0.2	0.2	0.2	0.8
IGN1L	Finance	-	0.6	0.8	1.2	1.6
INC1L	Finance	0	0	0	0	0.2
INL1L	Finance	0	0	0	0	0.2
INR1L	Finance	0	0	0	0.2	0.2
IVL1L	Finance	0	0	0	0	0
K2LT	Other	0	0	0	0	0
KNF1L	Energy	0.8	0.4	0.6	1.2	1.2
KNR1L	Energy	0.6	0.6	0.6	0.6	0.6
LGD1L	Energy	0.4	0.4	0.4	0.4	0.4
LNA1L	Agriculture	0.2	0.4	0.4	0.6	0.4

LNS1L	Textile	0.4	0.4	0.4	0.4	0.4
NEOFI	Finance	-	-	-	0	0
NTU1L	Other	-	-	0	0	1.2
PTR1L	Other	0.2	1	1	1	1
PZV1L	Food	0.6	0.6	0.6	1.2	1.2
RSU1L	Food	0.8	0.8	0.8	0.8	1.2
SAB1L	Finance	0.4	0.6	0.6	0.6	0.6
SNG1L	Manufacturing	0.6	1	1	1	1
TEL1L	Other	0.2	1	1	1.2	1.4
UTR1L	Textile	0	0	0	0.4	0.4
VBL1L	Manufacturing	0.2	0.2	0.2	0.6	0.8
VLP1L	Food	0.6	1.2	1.2	1.2	1.2
ZMP1L	Food	0.2	1	1	1	1
Average size		<u>0.30</u>	<u>0.51</u>	<u>0.50</u>	<u>0.61</u>	<u>0.74</u>

Source: created by the author

The analysis of the information contained in the financial reports (financial statements, social responsibility reports, annual reports, other reports presented with financial statements) showed that the general situation of the companies is improving. Companies have started to develop environmental policies and a range of environmental information is presented to users in the financial reports. The most significant changes have been observed since 2017, due to the entry into force of Directive 2014/95/EU that regulates the preparation of the social responsibility report, as well as an increase in their number in the last years 2019–2020. This can be explained by the increasing environmental requirements for companies at the national and EU level. As a result, companies have recently been increasingly declaring that they have adopted an environmental policy, set strategic goals related to the environment, and provided more financial information related to environmental issues.

The object of this research is environmental accounting, called green accounting. The analysis revealed that none of the companies analysed declared that they applied green accounting. However, the disclosure of financial information shows the need for green accounting. The study hypothesised that the application of green accounting is needed when a company provides various financial information related to environmental costs, revenue, taxes, and pollution sources. In 2016, such information was provided by only 4 companies, in 2017 by 6 companies, and in 2020 by 12 companies.

The analysis performed shows that the food sector discloses environmental issues the most, while the financial sector – the least. In the food sector, a number of EU requirements related to food safety and security have been established, which can be a significant factor. Meanwhile, although certain aspects are also important for the financial sector, especially when taking into account the sustainable business financing initiative. Unfortunately, there were companies that stated that environmental policy was not relevant to them.

BLR model discloses what factors influence the application of green accounting. These factors are important for businesses' awareness of green accounting practices and their benefits in the future. Using Forward Stepwise method, 10 step actions were performed. The selected model is formed in step 6. Table 9 provides information on the goodness of fit of BLR model.

Table 9: Information of the goodness of fit of the model

Omnibus Tests of Models Coefficients	Chi-Square	df	Sig.
Step	15.149	1	.000
Block	91.880	6	.000
Model	91.880	6	.000

Source: created by the author with SPSS software

As presented in Table 9, the Omnibus tests assess the goodness of fit of the model incorporating the statistically significant variables. Sig. ($p=0.000$) shows that model is statistically significant and the dependent variable is well predicted. The Chi-Square test explained a significant amount of the original variability, $\chi^2(6) = 91.88$.

Table 10 shows the goodness of fit of the BLR model. Table 10 presents the R-squared values. The Nagelkerke modification is considered to be a more reliable measure of the ratio compared to Cox and Snell's. In the model Nagelkerke, R^2 accounts for 0.711, indicating a 71.1 per cent relationship between the predictors and the prediction. The overall percentage of correct recognition of the model is 86.5 per cent, indicating that the model correctly classifies cases.

Table 10: Results of the goodness of fit of the model

-2 Log likelihood	R-squared		Overall Percentage
	Cox and Snell	Nagelkerke	
69.056	.499	.711	86.5%

Source: created by the author with SPSS software

The model data indicate that the model is reliable and therefore the obtained result of the model can be interpreted (see Table 11).

Table 11: Result of BLR model

	B	S.E.	Wald	df	sig	Exp(B)
EN_STR	3.656	1.319	7.684	1	.006	38.723
SRR	3.760	.908	17.140	1	.000	42.966
ISO	-5.170	1.328	15.145	1	.000	.006
SEC=Energy	3.227	.908	12.094	1	.001	25.204
SEC=Food	8.528	1.785	22.835	1	.000	5056.708
SEC=Agriculture	5.264	1.375	14.658	1	.000	193.199
Constant	-3.459	.792	19.050	1	.000	.031

Source: created by the author with SPSS software

The results of the model confirmed the link between green accounting and social responsibility reporting. As Table 11 shows, the preparation of a social responsibility report (SRR) increases the disclosure of green accounting elements in the financial reports by about four times, which is related to the presentation of environmental accounting information. Statistical data have shown that the food, the energy and the agriculture sectors are more likely than other sectors to use green accounting elements. This was also confirmed by the BLR model, which shows that the use of green accounting is 3.2 times as common in the energy sector (SEC=Energy), 5.3 times more common in the agriculture sector (SEC=Agriculture) and 8.5 times more common in the food sector (SEC=Food). The research also analyses the relationship between green accounting and environmental standards (ISO), environmental strategies (EN_STR) and policies (EN_POL). Environmental policy (EN_POL) was not included in this model as it was not statistically significant. The BLR model showed that environmental strategy (EN_STR) plays an important role in the application of green accounting. Green accounting is about 3.7 times more likely to be applied in companies that have a defined environmental strategy.

The BLR model also aims to assess the relationship between environmental standards and green accounting. Companies often implement environmental standards. However, this research did not reveal the need for green accounting in those companies that have environmental standards in place. On the contrary, the development of environmental standards (ISO) reduces the need for green accounting by about 5 times. This may be due to the fact that the company declares itself as sustainable only by implementing an environmental standard but does not actually declare it, without presenting any environmental accounting data in its financial reports. The lack of data therefore makes it difficult to assess whether such a company is indeed sustainable if the application of environmental standards does not follow financial disclosures?.

An additional pilot survey showed that Lithuania companies did not apply green accounting. 13 companies completed the questionnaire. Of the companies surveyed, around half were found to prepare environmental reports: 3 companies prepare a social responsibility report in accordance with

the EU directive, 3 companies prepare other reports. Half of them followed national accounting standards and half followed international accounting standards. Half of the companies surveyed indicated that they established environmental standards. Only 38 per cent of respondents consider their companies sustainable, and 46 per cent say that their companies are only partially sustainable. 15 per cent considers that their companies are not sustainable.

As the companies indicated that they did not apply green accounting, therefore, no answers were received to the questions regarding the green accounting methodology (Questions 2 and 3). However, respondents revealed their understanding of the need for green accounting (see Table 12).

Table 12: Respondents' understanding of the need for green accounting

Description	Agree	Disagree
Green accounting is required from a financial point of view in accordance with financial reporting regulations or due to ongoing audits.	46.2%	53.8%
Green accounting is needed from a social point of view to strengthen corporate social responsibility.	84.6%	15.4%
Green accounting is necessary from an environmental point of view, as the company must pay attention and be responsible for the environment and natural resources.	84.6%	15.4%

Source: created by the author

Respondents' answers show that the need for green accounting is most often linked to corporate social responsibility, responsibility for nature and natural resources. However, almost half of respondents think that green accounting is needed for regulatory or audit reasons. This shows that there is lack of social responsibility on the part of the company's specialists, managers, and owners; that sustainability (and green accounting as a tool) is only a regulatory concern, and not a concern for the sustainability of the company. This can be linked to the results that almost half of the companies declared that they are partially sustainable. The results of the empirical research show that the debate on green accounting and improving corporate sustainability needs to be addressed not only in academic papers but also in practice.

5. CONCLUSIONS AND DISCUSSIONS

The research reveals that the food, agriculture and energy sectors in Lithuania are more likely to report green accounting-related information in their financial reports. Other researchers have also carried out research on green accounting in various sectors. Gonzalez and Mendoza (2021) in their research disclose that mining companies in Colombia started to implement green accounting in 1991. In Lithuania, mining companies are small and therefore are not among the listed companies and have not been analysed. Nevertheless, this could be a new direction for future research.

This research and the study by Gonzalez and Mendoza (2021) show that the application of green accounting may emerge in one sector, while in other sectors green accounting is not relevant. Gonzalez and Mendoza (2021) focus on mining sector. This research shows that three sectors (food, agriculture and energy) are the leaders, but the financial sector in Lithuania pays the least attention to them.

The research by Endiana et al. (2020) was based on manufacturing companies in Indonesia. The researchers conclude that these manufacturing companies are able to apply green accounting as the production process of these companies is directly related to environmental issues and is valued by the public. This research shows that manufacturing companies in Lithuania do not apply elements of green accounting. Some of Lithuanian manufacturing companies prepare social responsibility reports, in which they are required to disclose information on environmental issues; however, this information was not provided in the financial data. This shows a lack of regulation and supports the opinion of Endiana et al. (2020). Endiana et al. (2020) concluded that the government and accounting institutes should develop an accounting policy, standard or legal framework for green accounting. As was mentioned in the introductory section, there is still a lack of regulation for green accounting.

Gonzalez and Mendoza (2021) found that six of ten Columbian mining companies apply green accounting, while the others have the same green accounting elements. In Lithuania's cases, no companies were found to apply green accounting and only 12 out of 28 companies apply some

elements of green accounting. It can be stated that green accounting practices in Lithuania just only started to develop, and therefore are not widely applied. Lithuania is a country governed by the rule of law, where accounting is conducted not only in accordance with accounting practice but also with legislation. Legislation would therefore greatly encourage Lithuanian companies to adopt green accounting. This was also confirmed by our respondents, about half of whom stated that green accounting is necessary when there is a regulatory framework or audit.

Rounaghi (2019) agrees that green accounting should be based on standards or rules with practical principles and then it would be one of the government's tools for controlling economic and environmental issues. Given that the Trustees of the IFRS Foundation (2021) have started discussions on standards related to green accounting, which are required for sustainability reports, researchers must also discuss that the adopted standards should convey best accounting practices. Future research therefore needs to investigate what best green accounting practices can be applied.

An empirical research has shown that although companies prepare sustainability reports and implement environmental standards, there is a lack of environmental financial information in the financial reports. As a result, users of financial reports see an incomplete picture of the company. Without green accounting and this information, it will be difficult to achieve the EU's environmental targets in the future.

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BAFE020:
**THE MODEL DEVELOPMENT OF FINANCIAL LITERACY &
INCLUSIONS OF WOMEN MSMEs IN TANGERANG THROUGH
FINANCIAL INTENTION**

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Abstract

This study succeeded in mapping the demographic profile, literacy, inclusion, and financial capacity of 150 women MSMEs in Tangerang. Data obtained through snowball sampling. They have been able to take appropriate action when experiencing a financial surplus and deficit, so that they are proven to have high and dominant Financial Intentions to make appropriate and effective financial decisions. Using GLM (Generalized Linear Model) as a technique is the first step to develop a financial decision-making model for MSME women in Tangerang. The result of this research is the identification of the development of a model of financial literacy and inclusion with a focus on the financial intention variable which is a motivator for every MSME woman in Tangerang. Thus, financial intentions must be a special concern for academics and policy makers when financial penetration and inclusion activities are carried out to achieve maximum results.

Key words: Literacy, Inclusion, Intention, and Financial Attitude, women MSMEs in Tangerang, GLM.

INTRODUCTION

Based on geographic location, Tangerang district is located in Banten Province. It is between 6°0 - 6°20 South Latitude and 106°20 - 106°43 East Longitude. Tangerang District has a very wide area, consist of 29 sub-districts, 28 urban villages and 246 villages with an area of 95,961 hectares. The administrative area of Tangerang District is bordered by several regencies or cities and the surrounding seascapes, namely: to the north it is bordered by the Java Sea, to the east it is bordered by South Tangerang City, Tangerang City and DKI Jakarta. It is bordered by Bogor District to the south and to the west by Serang District and Lebak District. The total population in Tangerang District is 2,94,969 people, with a sex ratio of 103.97. The number of MSMEs in Tangerang District is 41,155 which are micro businesses spread throughout the Tangerang District. Tangerang District has a strategic geographical position because it is close to DKI Jakarta and West Java. This position makes the Tangerang District area is an alternative for DKI Jakarta which is already has a dense population. In terms of transportation, Tangerang District is traversed by the Serang-Jakarta highway, and the Merak-Jakarta toll road, the Jakarta-Rangkas Bitung double track train, as well as an alternative access to Soekarno-Hatta International Airport.

In terms of human resources, Tangerang District has a population growth of 2.43 percent, with a recorded population of 2,794,969 people. The impact of this abundance of human resources encourages the growth of employment opportunities that absorb the number of workers. The economic potential in Tangerang District is getting better, when viewed from the participation of women in helping the family economy. There are so many small and medium businesses run by women in Tangerang District. Based on data from the Central Statistics Agency of Banten Province, there were 1,277 cooperatives in Tangerang District in 2019. From these numbers, there are 942 cooperatives were active cooperatives and were able to absorb 2,420 employees. The number of registered members in the entire cooperative was 614,261 people. in Tangerang District, they use more capital from outside than their own capital. The number of assets owned by cooperative

companies reaches 527 billion rupiah with a business volume of 728 billion rupiah. This cooperative is engaged in various fields, including savings and loan cooperatives, production cooperatives, agriculture cooperatives, and others.

MSMEs in Tangerang District have a large share and contribution to regional income in general and the improvement of the family economy in particular. Based on 2019 BPS data, the number of MSMEs in Tangerang District is 41,155 units each district. These superior products include shoes, bags, batik, woven, culinary and recycled products. MSMEs make a major contribution to the region, namely absorbing labor, increasing regional income and promoting regional tourism. During the period 2016 to 2019, lending to MSME actors has also increased. This shows that there is an increase in the number of MSMEs standing in the community and the growing number of existing MSMEs. MSMEs in Tangerang District in 2019 for micro businesses amounted to 2,015,957 million, the largest credit was given to medium businesses amounting to 11,737,272 million. The following is data on the position of MSME loans that have been distributed by Commercial Banks and BPRs in Tangerang District within a period of 4 years.

Likewise with their understanding of financial literacy, there are still many MSME actors who are hesitant when answering the questions from the research team. Especially, when the questions related to literacy in insurance and investment. Most of them only understand insurance as limited to BPJS health insurance, vehicle insurance, but do not understand insurance other than that. Although there are some among the MSME actors who already understand with other types of insurance. Though insurance can also be used by them as a means of investment. They still have a sense of fear and concern about insurance products. Likewise other investment products, especially mutual funds. All MSME actors that the research team made as respondents, all of them did not understand what was meant by mutual funds. So far, they have only invested in three things, namely savings, land and gold. They understand that these three medias are reliable and profitable as a means of investment.

There are two main problems, namely: 1. To what extent can the understanding profile of women SMEs in Tangerang District on financial inclusion and literacy in financial decision-making be mapped demographically? 2. Will this understanding be reflected in the analysis model of the influence of Financial Literacy and Inclusion on Financial Attitudes with the involvement or absence of Financial Intentions?

LITERATURE REVIEW

Women Empowerment

Efforts to empower women in the economic sector, creative industries are also increasingly dominated by women. In the Creative Economy Manpower report, BPS and the Creative Economy Agency (Bekraf) stated that women have consistently been the main players in the creative industry since 2011. The percentage of women in this sector is 53.6%. Where this figure is quite striking when compared to industrial conditions in general, the female workers are only around 37.16% and male workers are 62.84%. In 2016, women working in the creative sector also experienced an increase, to 9.4 million people.

Women's economic empowerment is central to realizing women's rights and gender equality. Women's economic empowerment includes women's ability to participate equally in existing markets; their access to and control over productive resources, access to decent work, control over their own time, lives and bodies; and increased voice, agency and meaningful participation in economic decision-making at all levels from the household to international institutions. The number of women in Indonesia as entrepreneurs or business owners continues to increase following the progress of the national economy and increasingly modern social developments. Women contribute to national economic development through their participation in the MSME sector. This can be seen from the contribution of MSMEs to the national economy, and has a significant role in the real sector which can spur national economic growth. The Ministry of Cooperatives and Small and Medium Enterprises recorded that 52 million MSME players in various regions of Indonesia are female entrepreneurs, which is 43%. This means, of the total roles of MSMEs in building the nation's economy, 43% of the share is the result of the contribution of women entrepreneurship. This is very encouraging, because it

turns out that women have started to have the same desires and opportunities as men to take part in the national economy.

Women and Entrepreneurship

Entrepreneurship is a process carried out by an individual in order to look for opportunities, without being limited by the resources he currently has (Stevenson & Jarillo, 1990). In addition, entrepreneurship can also be defined as the art of identifying opportunities and implementing these ideas into practice, and this requires creativity and courage to take risks (Ireland & Webb, 2007). There are three main reasons why a person becomes an entrepreneur, namely in order to be a leader for himself, to be able to carry out his ideas and to obtain financial rewards (income). Female entrepreneurs represent the fastest growing category of entrepreneurship worldwide and have received, especially in recent years, the attention of many academics. According to the emerging literature, women can make a significant contribution to entrepreneurial activity and economic development in terms of creating new jobs and increasing the gross domestic product (GDP) with positive impacts on reducing poverty and social exclusion.

In this golden age of globalization, digitalization and start up booms, women entrepreneurs do not come only from the established business families or the higher income sections of the population, but they also come from all walks of life and from all parts of the country. The role of women in society has changed drastically in the past few decades and for the better. Women are now occupying male counterparts in some areas. The gender stereotypes which were more prevalent in the society decades ago are breaking slowly.

Women entrepreneur has been recognized during the last decade as an important untapped source of economic growth. Women entrepreneurs create new jobs for themselves and others and by being different solutions to management. Highly educated, technically sound and professionally qualified women must be encouraged for managing their own business, rather than being employed in any outlets.

Women's Entrepreneurial Behavior in Financial Decision Making

Within a business entity itself, the owner or business actor has an important role in making decisions, especially those related to financial decisions. Business actors, as strategic decision holders, will make financial decisions for the business, including investment decisions and funding decisions. So that in making these decisions, a business actor needs various competencies, such as educational background, intellectuality, capabilities and experience. Apart from that, there are also several factors that influence the decisions made, ranging from rational and emotional considerations to psychological factors of the business actor.

Investment decisions are related to the process of selecting one or more investment alternatives that are considered beneficial from a number of investment alternatives available for the business. The results of the decisions taken will have a major impact on the sustainability of the business. Likewise, funding decisions are related to alternative funding made by the company. The funding decision relates to the process of selecting the source of funds used to spend the planned investment with various alternative sources of funds available, so that the most efficient combination of spending is obtained.

Women and Financial Literacy

Referring to data from the Financial Services Authority (OJK) released in 2020, the current level of Indonesian women's financial literacy has only reached 25.69 percent, while men's financial literacy rate is 33.52 percent. In fact, nearly 80 percent of household financial affairs are managed by women. The increasing number of financial service products available, accompanied by advances in the technology sector as well as changes in the demographic structure of today's society, require the need for good knowledge and understanding of financial aspects, as well as financial products.

The level of financial literacy has a significant and positive contribution to economic participation and community economic health. This means that the higher the level of financial literacy of a community, the higher the economic participation and economic health of the community.

Women and Financial Inclusion

Women are one of the main target groups in the National Strategy for Financial Inclusion (SNKI). In the context of financial management, women have an important role in the domestic and public sphere. In the domestic sphere in the household, women are mothers who become financial managers in the household who ensure the fulfillment of all household needs. Meanwhile in the public sphere, women can run various economic enterprises that involve financial management on a larger scale.

The efforts carried out by women often face obstacles, both from a cultural and structural perspective. From a cultural perspective, women in Indonesia are generally not encouraged to develop large-scale businesses or become the main source of income for their families. Women are only expected to run side businesses to increase family income. Meanwhile, structurally, the businesses carried out by women have constraints related to capital for business development. In general, family assets are owned by the husband, so that women do not have access to collateral for capital credit to banks. This causes the businesses that are run by women to be subsistence in nature and they cannot grow any bigger. They have problems in accessing credit for their business development.

RESEARCH METHOD

This study succeeded in obtaining 150 female MSME respondents in Tangerang whose data were obtained through the snowball sampling method. Of the 150 respondents, it is expected that they will fill out a list of questions or questionnaires consisting of 4 variables, namely Financial Literacy (LK), Financial Inclusion (IK), Financial Intention (NK) and Financial Attitude (SK) which has 5,4,4,3 indicators respectively. To empirically test the analysis model, the GLM (General Linear Model) will be used.

DATA ANALYSIS AND DISCUSSION

Demographics Profile of Women MSME in Tangerang

Domicile

The domicile in this study explains the address of the respondent. Meanwhile, for respondents in Tangerang District, it was carried out directly and indirectly. Indirectly or indirectly face to face, by sending a questionnaire sheet, and conducting some interviews by telephone. Meanwhile, the direct data collection process was carried out by conducting face-to-face visits and visiting the respondent's location. Tangerang District which is only received a response rate of 90.9%. This can be explained, respondents in Tangerang District are somewhat closed, when researchers ask questions related to their financial management and financial habits.

Age

The age referred to in this study is the age of the woman who became the research respondent at the time of the survey and interview. For the age distribution of respondents in Tangerang District, the following results are obtained: the majority of respondents in Tangerang District are around >40 years-55 years. Then in the second position in the age category > 55 years and the third position in the age category > 25 years-40 years. So it can be seen that the largest proportion are respondents aged > 40 years-55 years, which is 66%, and the lowest is respondents aged > 25 years-40 years, by 10%.

Education

The education in this study is referred to the last education of the women who were respondents in this study. Meanwhile, respondents in Tangerang District obtained different results in terms of the distribution of the proportion of their education level. The last education that dominates respondents in Tangerang District is Bachelor's degree at 55%, the second position is SMA/SMK graduates at 37% and the least is SMP graduates at 8%. As for elementary school graduates, there were no respondents in this study.

Length of Work

The length of work in this study referred to the length of time they have started a business/work until the time this research is carried out. The length of time the respondents worked in Tangerang in this study was almost directly proportional to their current age. The older the respondent, the longer they work.

Income/month

The monthly income referred to in this study is the monthly net income received by the respondents from the business they do. Income is a very private thing for someone, so sometimes respondents will not answer for sure, only in the form of the average they earn every month. This is what finally the researcher must convince the respondents that the data obtained is confidential, will not be distributed to the public.

Meanwhile, respondents in Tangerang District obtained the following data. The majority of respondents' monthly income is >10 million to 25 million rupiah, the proportion is 92%. Then followed by respondents who have income <10 million rupiah per month with a proportion of 5%. In addition, the smallest proportion is 3% for respondents who have a monthly income of > 25 million rupiah to 100 million rupiah. Below is the distribution of monthly income for respondents in Tangerang.

Research respondents in Tangerang District are business actors who have businesses engaged in services, trade and industry. Tangerang District is a buffer zone for DKI Jakarta, so it has easy transportation access. So, it will make easier for business actors in Tangerang District to develop their businesses, expand their market and sell their products.

Utilization of financial institutions as a source of financing

Utilization of financial institutions as a source of financing in this study is a financial institution that is used by research respondents as a source of financing for their business. Based on the results of research on the respondents, it is obtained that all respondents use bank financial institutions as a source of financing for their businesses. In addition, they also use pawnshop financial institutions as an alternative source of business financing other than banks

Respondents in Tangerang District view pawnshops as one of the financial institutions that can help them to find additional capital for business development. Respondents in Tangerang District consider that it is easier for respondents to get fresh funds for their additional capital, by mortgaging their assets while at the pawnshop. The process is faster and the payment method is easier than another financial institutions such as bank. These reasons are make some respondents in Tangerang District feel comfortable using this financial institution.

Financial Institutions to save funds

Financial institutions to save funds in this study referred to several financial institutions, namely cooperatives, baitul malls, rural banks, banks and others that are used by respondents to save their excess funds that they have. All respondents in Tangerang use the bank's financial institution as a financial institution to save their excess funds. Almost all respondents stated that they consider the Bank as a trusted, safe and easy financial institution to help them carry out financial transactions.

Banking products and services used

Some women MSMEs in Tangerang District save their excess funds in the form of demand deposits and deposits. Many respondents in Tangerang District use bank services for the distribution of consumer credit. Respondents residing in Tangerang District, where they still use investment credit to increase their assets. Such as loans for investment in land, shop houses, houses. the use of credit cards is still widely used by respondents in their business. The ease of transactions using a credit card is an option for them to develop their business and make their work easier. respondents who are in Tangerang District, there are many respondents who use mobile banking services. almost all respondents use this facility to pay their monthly bills, such as payments for electricity, installments,

water and so on. Payment services provided by banks are mostly enjoyed by respondents in Tangerang District.

Credit repayment period

The credit repayment period in this study is related to the length of time respondents pay off their loans to the bank. Based on the results of the study, almost all respondents did a maximum credit repayment period of 3 years. This is related to the size of the loan they made and the respondent's ability to repay the loan.

Credit ceiling accepted

The credit ceiling received in this study is related to the maximum loan size they make. Based on the results of the study, it can be seen that the credit ceiling received by the respondents is adjusted to the respondents' ability to pay, adjusted to the income they earn each month. Almost all respondents have a loan repayment period of 24 months. Only a small part of it is over 24 months for credit repayment. Especially when the respondent has consumptive credit.

Profile of financial inclusion of Women MSME in Tangerang

Based on the results of interviews and filling out questionnaires conducted by respondents in these two districts, it can be seen that almost all respondents still do not know about financial inclusion. This term is still considered a new thing for them. Although basically they have been in touch for a long time and use financial inclusion in their daily lives. This shows that the understanding and use of financial products is still not understood by the public, especially people in rural areas. There is a big gap in this regard, because it turns out that even though respondents already have and use financial products, this is only limited to having them, without further understanding about the benefits and risks of the products they use.

Respondents who are in Tangerang District, they are used to doing transactions at the bank, so there are no obstacles. The next obstacle faced by respondents to access banking services is that they are not accustomed to using mobile phones in conducting banking transactions. This is especially true for respondents over the age of 55. They still find it difficult to understand the use of applications on mobile phones to make it easier for them to make financial transactions. There are still doubts and fears when using the application incorrectly. So that many of the respondents prefer to come directly to the bank and be accompanied by a bank officer. They feel comfort and safe to doing that.

Profile of Financial Literacy of Women MSMEs in Tangerang

Respondents in Tangerang District, because it is an urban area, the price of land is very expensive. So that the most respondents in Tangerang District prefer to invest in gold and shop houses. Gold is a lucrative investment, because besides being easy to convert into liquid funds, the price of gold is also very good every time it moves. The shophouse investment is also of interest to respondents in Tangerang Regency, because they can be rented out or also used for their business activities. Shophouse rental prices are increasingly soaring, becoming one of the main attractions for respondents to make shop houses as an investment alternative.

Profile of the Financial Capability of Women MSMEs in Tangerang

The proportion they do is for the excess funds they get, it turns out that most respondents in Tangerang District prefer to use it as capital for their business development. The next proportion regarding the allocation of the use of excess funds is a difference between respondents in Tangerang District. The behavior of respondents in Tangerang District, which is more concerned with the allocation of funds for personal interests compared to the purchase of assets. This can be understood by the condition of the people in Tangerang District, which is an urban city, with a typical urban lifestyle that tends to be more consumptive. This consumptive behavior makes them tend to act excessively in buying something or getting goods for their own satisfaction. The role of culture in it is also influential in shaping their behavior.

Research Model Analysis with GLM

GLM testing is carried out without and with Financial Intention (NK) as started by indicating the descriptive statistics at table 1

Table 1. Descriptive Statistics of Main Variable, namely LK, IK, NK and SK.

Variable	Mean	Std. Dev	Max.	Min
LK	4.43	0.22	5.00	4.00
IK	4.31	0.20	4.88	3.80
NK	4.14	0.25	4.73	3.39
SK	4.24	0.25	4.90	3.68

Source: Results of Data Processing (2021)

The result from table 1 indicates that 150 women MSME in Tangerang has owned high financial literacy (LK), inclusion (IK) and intention (NK) since mean is larger than 4 respectively. Therefore it will be expected that they could take the good financial attitude in their daily activities.

Table 2. Results of GLM Analysis on Financial Attitudes without & with Financial Intention

Explanatory Variables	GLM Without Financial Intention		GLM With Financial Intention	
	Coefficient	Z-test	Coefficient	Z-test
Financial Literacy	-0.2295	-2.01***	-0.0514	-1.93***
Financial Inclusion	0.1532	1,36	0.0143	2.25***
Financial Intention	-	-	-0.1157	-1.84**
Constant	4.6285	6.96****	1.5665	10.08****
Note:	**** Significant at level 1% *** Significant at level 5% ** Significant at level 10%			

Source: Results of Data Processing (2021)

The results of the GLM data processing at table 2 above prove that the best analytical model for financial attitudes is still with financial intentions. This result is in line with previous research from Muna & Anis (2017) which stated that financial intention has stronger psychological aspect compared to financial literacy and inclusion which tend to rise and fall along with changing demographic conditions of a region.

Particularly compared to Abel, et. al. (2018) and Allen, et.al. (2016) and etc. the result of this study has reconfirmed high financial inclusion will address high financial attitude as mentioned at table 2. While comparing to study of Grohman, et.a. (2018), Lusardi (2019) and etc. we support the fact that high financial literacy will positively impact to high financial attitude. The interest finding of our study is that financial intention does not have positive impact to financial attitude. It may be caused by the high financial literacy and inclusion from every women MSME in Tangerang which have explained at demographic profile. Moreover Tangerang is very closed to the Jakarta as the center of financial activities in Indonesia. Then it will influence the high financial literacy and inclusion for women MSME in Tangerang.

CONCLUSION & SUGGESTION

This study has significant findings, namely when Financial Intention is included in the GLM analysis model, Financial Inclusion is more significant than Financial Literacy. Conversely, when there is no Financial Intention, the results are different, namely Financial Literacy is more significant than Financial Inclusion. The justification is that Financial Intention tends to be closer to Financial Inclusion than Financial Literacy.

In order to realize the use of SEM, it is necessary to review and remap precisely the indicator construct, especially from the variables of financial literacy and inclusion which have been widely adopted by the OECD and must be adapted to the sociocultural & demographic conditions of Indonesia. Respondents outside the Greater Tangerang area who are still in the same area as in Banten Province, such as Lebak, Cilegon, Pandeglang and others, can also be considered.

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BAFE023: EVALUATION ON IMPLEMENTATION OF PSAK 73: SEWA in PT INDOSAT TBK AND PT UNILEVER INDONESIA TBK

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Abstract

This study aimed to evaluate the early implementation of PSAK 73: Sewa in PT Indosat Tbk (Indosat) and PT Unilever Indonesia Tbk (Unilever). PSAK 73 provides significant changes for lessees due to it requires the recognition of right-of-use assets and lease liabilities for all leases, except for short-term and low-value assets. This research uses a case study approach based on content analysis of financial statements and interview results. Evaluation conducted by comparing the information presented in financial statements of both companies to the requirements in PSAK 73. Based on the evaluation, Indosat and Unilever early adopted PSAK 73 due to pressure from shareholders that have implemented IFRS 16, in line with the concept of coercive isomorphism. This study also found that there are similarities in the behavior of actors and institutions at Indosat and Unilever which are influenced by regulatory logic, artifacts and routines. Unilever restated the previous period financial statements in the initial implementation of PSAK 73, whilst Indosat uses a retrospective modification approach method 2 for the entire impact of changes to PSAK 73. Both companies have recognized, presented and disclosed leases in accordance with the requirements of PSAK 73. The implementation of PSAK 73 for the first time has been proven to increase the debt to asset ratio, debt to equity ratio and EBITDA and lower the company's return on assets.

Keywords: Early implementation, PSAK 73, lease accounting, right-of-use assets, lease liabilities.

INTRODUCTION

DSAK IAI follows updates according to changes in IFRS. On September 18, 2017, DSAK IAI has ratified the Statement of Financial Accounting Standards No. 73 (PSAK 73) as a replacement for the previous lease-related accounting standards. PSAK 73 is the adoption of IFRS 16. On January 13, 2016, IFRS 16 was issued and effective as of January 1, 2019 internationally, while PSAK 73 came into effect 1 (one) year after that, namely on January 1, 2020. IFRS 16 which replaces IAS 17, introduces a single accounting model for all types of leases from the lessee's side. IFRS 16 is a rental accounting reform carried out by the IASB in response to various criticisms of IAS 17 and seeks to provide a comprehensive and understandable picture to users of financial statements who adopt IFRS (Secinaro, Brescia, Daniel, and Chmet, 2020).

IFRS 16 provides changes to the accounting records by the lessee (lessee), the lessee is required to record the right of use assets and lease obligations. The method of accounting recognition in the financial statements of the lessor has not changed (Secinaro et al., 2020). Under the previous lease accounting standards, both lessees and lessees were required to classify their lease transactions as operating leases or finance leases. This approach has received many criticisms due to it is considered not to accurately represent the lease transaction, due to the previous lease accounting model did not provide provisions for the lessee to record assets and liabilities arising from operating lease activities.

The principal arrangement of PSAK 73 is that the lessee recognizes right-of-use assets and lease liabilities, except for short-term leases and low underlying assets. Meanwhile, the lessee will continue with the rental accounting provisions that have been regulated in the previous rental standard, namely PSAK 30: Lease (DSAK IAI, 2018). Right of use assets and lease liabilities that are

recognized will increase the total assets and liabilities of the company. Diaz and Ramirez (2018) show that in general an entity's assets and liabilities will increase, as Return on Assets decreases while EBITDA will increase. Veverkova (2019) who examined the impact of implementing IFRS 16 on European airlines showed an increase in total assets, non-current liabilities and a decrease in shareholder equity, as well as an increase in the Debt to Equity ratio and other leverage ratios such as Debt to Assets. Firmansyah (2020) found that the implementation of PSAK 73 increased Debt to Assets, Debt to Equity and Return on Equity but the company experienced a decrease in Return on Assets.

PSAK 73 provides an option for companies to implement early. Early implementation of PSAK 73 can be carried out by an entity provided that the entity previously or at the time of applying PSAK 73 implements PSAK 72: Revenue from Contracts with Customers. The provisions for early implementation follow the early implementation provisions required in IFRS 16 which states that IFRS 16 can be applied early if the entity has adopted IFRS 15: Revenue from Contracts with Customers. The option of early adoption of PSAK 73 also provides an opportunity for companies in Indonesia that are subsidiaries of companies abroad to apply PSAK 73 together with their overseas parents when implementing IFRS 16. For consolidation purposes, these companies must prepare data and reports finance according to IFRS 16 in 2019. Cuijpers, Buijink, and Maijoor (2002). mentioned that there are several reasons behind the company's early adoption of non-local accounting standards, namely the company is listed on several exchanges, the company operates internationally, the specific factors of the country where the company operates, the size of the company, and the industry sector of the company.

This study uses the implementation of institutional theory and institutional logic by looking at the relationship between theory and motivation which is the company's background for making decisions for early adoption of PSAK 73. Decisions for early implementation can be influenced by factors from within and outside the company. Internal factors, among others, are the demands of the company to be professional in presenting financial statements according to standards. Meanwhile, external factors include compliance with regulators or directives from shareholders or following other companies. The motivation of companies to implement the new accounting standards early can be observed based on the results of interviews with the actors who prepare the financial statements. (Rizal and Shauki, 2019).

This study uses 2 (two) units of analysis, PT Indosat Tbk and PT Unilever Indonesia Tbk which have implemented early PSAK 73 on January 1, 2019. The selection of PT Indosat Tbk and PT Unilever Indonesia Tbk as the unit of analysis due to this study wants to see if there are any similarities or differences in the early implementation carried out by the two companies based on the differences in ownership structure between the 2 (two) companies. PT Indosat Tbk shares are owned by Ooredoo Asia Pte Ltd as much as 65%, the public 20.71% and as much as 14.29% PT Indosat Tbk shares are owned by the Indonesian government while PT Unilever Indonesia Tbk has no ownership owned by the Indonesian government. % shares by Unilever Indonesia Holding BV and the remaining 15% by the public. Cascino and Gassen (2015) state that government ownership is positively related to the high level of company compliance with IFRS adoption.

Some of the challenges that will be faced by companies when implementing PSAK 73 include collecting rental data, especially for companies that have large rental transactions, later this will affect the transition method chosen by the company (Tsi, 2019); The next challenge is to build an Information Technology (IT System) control and system and the need for adequate additional personnel (Tsi, 2019). This challenge is also certainly a challenge for companies in Indonesia, although in practice there are several companies that have implemented PSAK 73 early before the mandatory effective date.

This study aims to analyze what factors caused the company to implement early. Furthermore, this study will also discuss how the diversity of the implementation of PSAK 73 is. Finally, this study will discuss the impact of the implementation of PSAK 73 on several financial conditions and company ratios. This paper is divided into five parts: introduction, literature review, conceptual framework, methodology, analysis and discussion and conclusions.

LITERATURE REVIEW

Institutional theory seeks to explain the processes and reasons for organizational behavior as well as the impact of organizational behavior patterns in a wider inter-organizational context (Guth, 2016). According to Scott (2008), institutions are a combination of regulatory, normative and cognitive cultural elements which collectively through activities and utilize related resources, provide certainty and meaning to social life. In modern organizational theory, many theories explain organizational diversity and differentiation and attempt to provide an overview of variations between organizations in both organizational structure and behavior (Woodward in DiMaggio and Powell, 1983). On the other hand, DiMaggio and Powell (1983) argue that if a field is growing well, then there is an unavoidable push for homogeneity between organizations.

The main focus of institutional organizations is isomorphism, which explains the similarities between organizations in the organizational field (Tipuric in Krajinovic, 2018). Isomorphism describes the degree of comfort of an organization to the norms and practices that arise in the organizational field (Johnston, 2013). DiMaggio and Powell (1983) then identified that there are 3 (three) types of isomorphism, namely coercive isomorphism, normative isomorphism, and mimetic isomorphism. Edwards, Mason, and Washington (2009) reveal that coercive isomorphism emphasizes a situation in which an organization that has power influences other followers, in such a way as to impose behavioral desires to achieve legitimacy and co-benefits. Meanwhile, normative isomorphism is the result of professionalization in certain organizational fields (Tipuric in Krajinovic, 2018 and Johnston, 2013). Mimetic isomorphism is the implementation of behavior that is influenced by the belief that the organization will gain success by following the behavior that was previously carried out by other organizations (Janicijevic in Krajinovic, 2018).

Scott (2001) says that there are carrier aspects in an institution, namely symbolic systems, relational systems, routines and artifacts that affect organizational behavior. The symbolic aspect is a collection of guidelines used by institutions (Friedland and Alford, 1991). Relational system is corporate governance, authority system, and identity; routines are patterns of behavior and procedures, while artifacts are tangible objects such as technology, information technology system development (Scott, 2001).

Kieso, Weygandt, and Warfield (2020) define a lease as a contractual agreement entered into by the lessee and the lessor. Leases are classified into operating leases and finance leases. Subramanyam and Wild (2009) state that operating leases can result in understating or overstating the company's financial information. Operating leases can have an impact on understated liabilities and assets due to they are not presented in the statement of financial position (off balance sheet). Understated liabilities will have a positive impact on solvency ratios such as debt to equity and understated assets will increase the return on investment ratio and asset turnover ratio. In addition, operating leases also have an impact on the delay in the recognition of expenses compared to finance leases. For the purposes of analyzing financial statements and financial ratios, analysts are advised to convert operating leases to finance leases due to operating leases have a positive effect on several financial ratios that measure leverage ratio and profitability ratio.

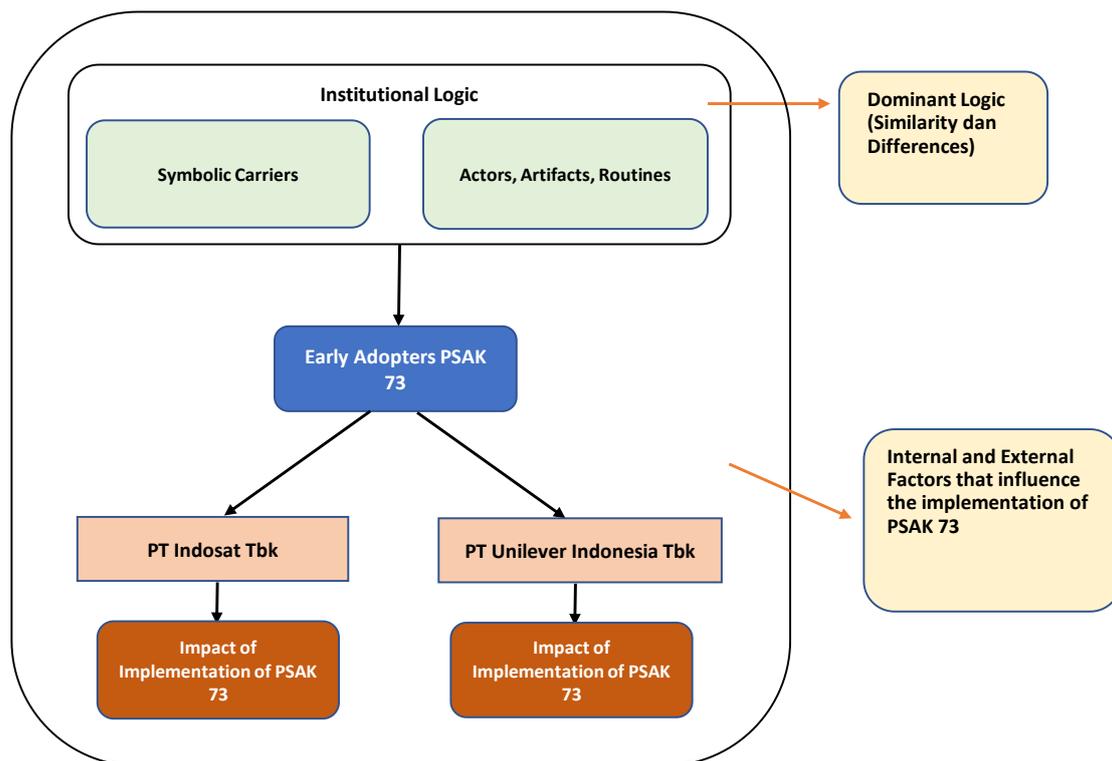
PSAK 73 was issued with the aim of providing guidance on the principles of recognizing, measuring, presenting, and disclosing leases by introducing a single accounting model, especially for lessees (Martani, 2019). In its transitional provisions, the standard provides 2 (two) approaches, namely retrospectively for each previous reporting period with the provisions of PSAK 25: Accounting Policies, Changes in Accounting Estimates, and Errors (retrospective with restatement) or retrospective modification. If the lessee chooses a modified retrospective approach at the beginning of the implementation of PSAK 73, then no restatement is made and adjustments are made to the opening balance of retained earnings.

IASB (2016) conducted an analysis of the impact that will result from the implementation of IFRS 16, in addition to having an impact on changes in company accounting policies, improvements in the quality of financial reporting, increased comparability, additional costs that must be incurred due to the implementation of IFRS 16, the implementation of IFRS 16 will also impact on several financial metrics. The implementation of IFRS 16 is expected to have a positive effect on the leverage ratio, EBIT, EBITDA and operating cash flow and will negatively affect the current ratio and asset turnover,

while for financial metrics such as interest cover, EPS, return on capital employed and return on equity the impact depends on character of the rental portfolio (IASB, 2016).

The issuance of PSAK 73 which is effective as of January 1, 2020 and early adoption is allowed, several companies have implemented early PSAK 73 before the mandatory effective date, 2 (two) of which are PT Indosat Tbk and PT Unilever Indonesia Tbk. On this basis, the researcher considers that it is important to know the motivation behind the company and the actors to make decisions to implement early PSAK 73 and see the impact of the implementation of PSAK 73, especially on the financial statements and financial indicators of the company. Thus, the framework of this research is:

CONCEPTUAL FRAMEWORK



RESEARCH METHODOLOGY

Sampling Design

PT Indosat Tbk and PT Unilever Indonesia Tbk were selected as the unit of analysis due to this study wanted to see whether there were similarities or differences in the early implementation of the two companies based on the differences in ownership structure between the 2 (two) companies. PT Indosat Tbk shares are owned by Ooredoo Asia Pte Ltd as much as 65%, the public 20.71% and as much as 14.29% PT Indosat Tbk shares are owned by the Indonesian government while PT Unilever Indonesia Tbk has no ownership owned by the Indonesian government. % shares by Unilever Indonesia Holding BV and the remaining 15% by the public. Cascino and Gassen (2015) state that government ownership is positively related to the high level of company compliance with IFRS adoption.

Research Procedure

This study uses a case study approach that specializes in case studies of PT Indosat Tbk and PT Unilever Indonesia Tbk. In conducting the research, this research used a qualitative approach, namely descriptive qualitative. Moleong (2010) revealed that qualitative research is a form of research approach that aims to be able to understand the phenomena experienced by the object of research, for example behavior, perception, motivation and action. The data used in this study are primary and secondary data. Primary data in the form of interviews and secondary data in the form of financial information presented in the company's audited financial statements. Interviews were conducted in a semi-structured manner to the Technical Director of DSAK IAI, vice president of accounting division, members of the audit committee, internal audit. The analysis used in this research is content analysis and comparison analysis. The formulation of the interview results was carried out by looking more deeply at the content and assessing whether there were similarities and differences in the results. Evaluation of the implementation is carried out by comparing the information presented in the company's financial statements with the provisions stipulated by PSAK 73. Evaluation of the impact is carried out by calculating the financial indicators using asset and liability items as calculations.

DATA ANALYSIS

Based on the interview result conducted with the Technical Director of DSAK IAI, the provisions for early adoption of a PSAK refer to the provisions of the early adoption of IFRS so that the provisions for early adoption of PSAK 73 are also adjusted to those required by IFRS 16, entities are allowed to apply early if the entity also applies IFRS 15 : Revenue from Contracts with Customers. IFRS 16 is effective as of January 1, 2019, while PSAK 73 which adopts IFRS 16 is effective as of January 1, 2020 so that every entity in Indonesia that implements PSAK 73 as of January 1, 2019 (effective date of IFRS 16) is categorized as having adopted PSAK 73 early due to the effective date of PSAK 73 is later than the effective date of IFRS 16.

The following is a summary of the results of interviews conducted with the vice president of the accounting division, members of the audit committee, and internal audit in table 1:

Table 1: Interview Result

No	Particulars	PT Indosat Tbk	PT Unilever Indonesia Tbk
1.	Motivation for early implementation of PSAK 73	Direct instruction from the parent company (Qatar)	Instructions from global group to be in line with Unilever Group's financial statements
2.	Readiness and preparation before applying PSAK 73	Several trainings were conducted involving company personnel who are responsible to lease transactions guided by third party consultants. Build an IT system purchased from a third party	There is a person in charge from the Group who is specifically dedicated to directing the implementation of PSAK 73 to be in-line with the Group. The Group specifically determines the global software that must be used to implement PSAK 73 which is purchased from third party

3.	Implementation of PSAK 73	The implementation of PSAK 73 is based on the provisions in the standard by adjusting to the portfolio of the company's lease transactions. For transitional provisions, Company implemented a retrospective modification approach	The implementation of PSAK 73 to the company's financial statements refers to the provisions of PSAK 73. The transition is carried out by applying a full retrospective approach and restating comparative information in accordance with the provisions of PSAK 25
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Table 1. above is the result of interviews with personnel from the company: the internal audit of PT Indosat Tbk, members of the audit committee of PT Unilever Indonesia Tbk and vice president of accounting division of PT Unilever Indonesia Tbk. The results of the interview are then used as a basis for analysis to determine the motivation behind the company's early implementation of PSAK 73, the implementation by the company and evaluate the impact of the implementation of PSAK 73.

The following are the results of the comparison of accounting policies related to leases on the financial information presented by PT Indosat Tbk and PT Unilever Indonesia Tbk:

Table 2: Comparison of the implementation of PSAK 73 of PT Indosat Tbk and PT Unilever Indonesia Tbk

Evaluation Basis	PT Indosat Tbk	PT Unilever Indonesia Tbk
Identifying Assets	In accordance to PSAK 73	In accordance to PSAK 73
Separating Components	The company does not separate the non-lease components and records as 1 (one) lease component.	Separating the non-lease component
Determining the lease term	In accordance with PSAK 73	In accordance with PSAK 73
Recognition	Recognize lease assets and liabilities at inception of the lease	Recognize lease assets and liabilities at inception of the lease
Measurement of Right of Use Assets	The initial measurement is in accordance with the standard provisions, after initial measurement, Company uses a cost model with a straight-line method depreciation	The initial measurement is in accordance with the standard provisions, after initial measurement, Company uses a cost model with a straight-line method depreciation, adjusted by loss of impairment and remeasurement of lease liability (if any)
Measurement of Lease Liability	In accordance with PSAK 73	In accordance with PSAK 73

Lease Modifications	The recognition of the lease modification as a separate lease by PT Indosat Tbk in accordance with the provisions of PSAK 73	No information available
	PT Indosat Tbk recorded lease modification as a non-separable lease in accordance with the provisions of PSAK 73	No information available
Sale and Leaseback Transaction	In accordance with PSAK 73	No information available

We also compare the presentation and disclosures made by PT Indosat Tbk and PT Unilever Indonesia Tbk regarding leases with the following results (Table 3):

Table 3: Presentation and disclosure criteria

Presentation and Disclosure Criteria	PT Indosat Tbk	PT Unilever Indonesia Tbk
Leased assets are presented separately from other asset under the name 'right of use assets'	No	Yes
Leased assets are presented in fixed assets under the name 'finance lease assets'	No	No
Leased assets are presented in fixed assets under the name 'right of use assets'	Yes	No
Lease liabilities are presented separately from other liabilities under the name 'lease liabilities'	Yes	Yes
There is a note for leased assets in CALK	Yes	Yes
There is a note for leased liabilities in CALK	Yes	Yes
There is disclosure of expenses for leases with a period of no more than 12 months or the underlying asset is of low value	Yes	Yes
There is a disclosure for additional right of use assets	Yes	Yes
Payments on lease liabilities	Yes	Yes
Profit or Loss from sale and leaseback transaction	Yes	No
The carrying amount of right-of-use assets is disclosed according to the underlying asset category at the end of the period	Yes	Yes
Interest expense presented as finance expense	Yes	Yes
Depreciation expense for leased assets is presented under cost of sales/income and general operating expenses/administration	Yes	Yes

Cash disbursements on the principal of the lease liability included in financing activities are presented separately	Yes	Yes
Cash disbursements on the principal of the lease liability are not presented separately from payments for other long-term liabilities	No	No
Cash disbursements on interest expense on lease liabilities are included in operating activities	Yes	Yes
Cash disbursements on interest costs from lease liabilities are included in financing activities	No	No

We also compare the changes in total assets, total liabilities, total equity and profit or loss between PT Indosat Tbk and PT Unilever Indonesia Tbk as follows:

Table 4: The impact of the implementation of PSAK 73 on the financial statements of PT Indosat Tbk

Particulars	2018 after implementation of PSAK 73	2018 before implementation of PSAK 73	Increase/ (Decrease)	2020	2019	Increase/ (Decrease)
Total Asset	54.700.565	53.139.587	2,94%	62.778.740	62.813.000	-0,05%
Total Liability	42.564.318	41.003.340	3,81%	49.865.344	49.105.807	1,55%
Total Equity	12.136.247	12.136.247	-	12.913.396	13.707.193	-6%
Net Profit (Loss)	(2.181.969)	(2.181.969)	-	-852.788	1.549.166	-155%

Table 4 represents the changes that occurred in PT Indosat Tbk. Based on Table 4, after the implementation of PSAK 73 for the first time caused an increase in total assets of 2.94% from before the implementation of PSAK 73 and an increase in total liabilities of 3.81% from before the implementation of PSAK 73. Meanwhile, there was no change in the company's total equity due to PT Indosat Tbk applies a retrospective modification of method 2 (two) by only adjusting the recording amount of right-of-use assets and lease liabilities as permitted by the standard (Martani, 2019).

Then we compare the changes that occurred in PT Unilever Indonesia Tbk as follows:

Table 5: The impact of the implementation of PSAK 73 on the financial statements of PT Unilever Indonesia Tbk

Particulars	2018 after implementation of PSAK 73	2018 before implementation of PSAK 73	Increase/ (Decrease)	2020	2019	Increase/ (Decrease)
Total Asset	20.326.869	19.522.970	4,12%	20.534.632	20.649.371	-0,56%
Total Liability	12.943.202	11.944.837	8,36%	15.597.264	15.367.509	1,50%
Total Equity	7.383.667	7.578.133	-2,57%	4.937.368	5.281.862	-6,52%
Net Profit (Loss)	9.357.937	9.386.195	-0,30%	7.056.606	7.090.157	-0,47%

Table 5 shows that the implementation of PSAK 73 for the first time by PT Unilever Indonesia Tbk increased the company's total assets by 4.12% and total liabilities increased by 8.36% and decreased total equity by 2.57%.

Discussion

Based on the results of the analysis of PT Indosat Tbk and PT Unilever Indonesia Tbk, the following findings were obtained:

1. **Symbolic Carriers**
The symbolic carriers found from the research results are regulatory logics which is one of the reasons behind the motivation of actors in the organization in making decisions to implement PSAK 73 early. The actors in PT Indosat Tbk and PT Unilever Indonesia Tbk stated that there are external provisions and internal guidance that must be complied with. These provisions are in the form of IFRS, PSAK, Standard Operating Procedure (SOP).

2. **Actors, Artifacts, Routines**
Other factors behind the motivation of the actors in PT Indosat Tbk and PT Unilever Indonesia Tbk to take the decision to implement PSAK 73 early. Internal and external factors that influence the actors in making decisions are:
 - a. **Internal Factor:**
PT Indosat Tbk as well as PT Unilever Indonesia Tbk both prepared to implement PSAK 73 early, both with assistance from third-party consultants and supervision from their Global companies as well as building an IT system related to the implementation of PSAK 73, so that these factors become factors that support the actors to decide to apply PSAK 73 early.

 - b. **External Factor:**
The external factor that influences and becomes a consideration for the actors in carrying out the early implementation of PSAK 73 is the pressure imposed by the parent company (global) which is the company's shareholder.

The similarities between PT Indosat Tbk and PT Unilever Indonesia Tbk as early adopters are based on the isomorphism condition, which is coercive isomorphism from overseas company shareholders, also supported on the basis of professionalism by judging something to be true, in this finding the isomorphism condition that arises is normative isomorphism. The dominant logic that influences the actors is regulatory logic, namely provisions such as PSAK, IFRS and internal company regulations, while internal factors that support the early implementation of PSAK 73 such as the readiness of the IT system from PT Indosat Tbk and those also carried out by PT Unilever Indonesia Tbk. Thus, there is no difference behind the motives of actors and institutions to carry out early implementation of PSAK 73.

After conducting a comparative analysis between the provisions stipulated by the standard and the implementation carried out by PT Indosat Tbk and those carried out by PT Unilever Indonesia Tbk, the two companies have equally applied PSAK 73 in accordance with the provisions provided by the standard and there were no deviations. occurs, the differences in the implementation, presentation and disclosure that occur between PT Indosat Tbk and those carried out by PT Unilever Indonesia Tbk are caused by specific factors related to the rental portfolio of each company. From the results of the analysis, it was also found that the shareholder structure did not affect the company's compliance with the provisions set by the standard. PT Indosat Tbk and also PT Unilever Indonesia Tbk have both implemented PSAK 73 in accordance with the provisions required by the standard even though the two companies have different shareholder structures.

Based on the results shown in Table 4, using the methods and calculations that have been carried out, it can be obtained the calculation of each financial indicator on the financial statements of PT Indosat Tbk as follows:

Table 6: Financial Indicators of PT Indosat Tbk

Financial Indicators	Increase/decrease 2019 - 2020	2020	Increase / decrease 2019 - 2018 after implementation	2019	Increase / decrease 2018 before implementation PSAK 73	2018 after implementation of PSAK 73	2018 before implementation of PSAK 73
Debt to asset ratio	1,6%	0,79	0,5%	0,78	0,8%	0,78	0,77
Debt to equity ratio	7,8%	3,86	2,1%	3,58	3,8%	3,51	3,38
Return on Asset	-155,1%	-1,36%	162,0%	2,47%	-2,9%	-3,99%	-4,11%
EBITDA	16,0%	11.433.157	51,6%	9.856.061	0,0%	6.500.144	6.500.144

Table 6 shows an increase in the debt to asset ratio of 0.8% after the implementation of PSAK 73 and an increase of 3.8% in the debt to equity ratio from before the implementation of PSAK 73 to after the implementation of PSAK 73. It can be said, the increase in debt PT Indosat Tbk's debt to asset ratio and debt to equity ratio are affected by the impact of the implementation of PSAK 73. In 2019, there was an increase in the debt to asset ratio of 0.5% and the debt to equity ratio of 2.1%. The increase in debt to asset ratio based on financial information was due to PT Indosat Tbk recorded an increase in total liabilities of Rp. 8 trillion, the highest increase in liabilities in the financial statements was rental liabilities which increased by Rp. 4.9 trillion so that the increase in debt to asset ratio and debt to equity ratio in 2019 can be concluded due to of an increase in rental liabilities. Whereas in 2020 as a whole, the change in liabilities in 2020 compared to 2019 was due to an increase in procurement debt of Rp. 3.6 trillion and a decrease in bonds payable and there was a decrease in retained earnings, so that in 2020 the increase in debt to equity ratio was not specifically caused by the implementation of PSAK 73.

Return on Assets of PT Indosat Tbk decreased by 2.9% after implementing PSAK 73, this was due to the recognition of right-of-use assets. The increase of 162% in 2019, the increase in return on assets experienced by PT Indosat Tbk was specifically caused by the profit recorded by the company from selling and leasing towers of Rp. 2.5 trillion and recording a profit for the year of Rp. 1.6 trillion, resulting in a positive return on assets in 2019. Meanwhile, in 2020 PT Indosat Tbk recorded a loss for the year of Rp 852 billion due to an increase in employee expenses. So for 2019 and 2020, changes in return on assets are not specifically affected by the recognition of right-of-use assets or the recognition of lease liabilities.

The company's EBITDA is expected to increase after the implementation of PSAK 73, this is due to the reduced operating lease expense of the company which is replaced by its recognition as depreciation expense and amortization of right-of-use assets. There was no change in EBITDA in 2018 before implementing and after implementing PSAK 73, due to PT Indosat Tbk implemented PSAK 73 with a retrospective modification approach of 2 (two) so that changes occurred only in the assets and liabilities of the company. PT Indosat Tbk recorded a significant increase in EBITDA in 2019, but this increase was specifically caused by an increase in the company's revenue in the 2019 and 2020 periods. In the 2018 period, PT Indosat Tbk recorded a net income of Rp. 23 trillion and an increase of Rp. 3 trillion in 2018. in 2019 so that revenue in the 2019 period was Rp. 26 trillion and in the 2020 period PT Indosat Tbk recorded revenues of Rp. 27.9 trillion, an increase of Rp. 1.8 trillion compared to 2019. Thus, the increase in EBITDA of PT Indosat Tbk was not specifically affected. due to the implementation of PSAK 73.

Based on the results shown in Table 5, using the methods and calculations that have been carried out, it can be obtained the calculation of each financial indicator on the financial statements of PT Unilever Indonesia Tbk as follows:

Table 7: Financial Indicators of PT Unilever Indonesia Tbk

Financial Indicators	Increase/decrease 2019 - 2020	2020	Increase / decrease 2019 - 2018 after implementation	2019	Increase / decrease 2018 before implementation PSAK 73	2018 after implementation of PSAK 73	2018 before implementation of PSAK 73
Debt to asset ratio	2%	0,76	17%	0,74	4,1%	0,64	0,61
Debt to equity ratio	9%	3,16	66%	2,91	11,2%	1,75	1,58
Return on Asset	0%	34,36%	-25%	34,34%	-4,2%	46,04%	48,08%
EBITDA	-6%	10.554.448	-16%	11.250.251	2,4%	13.373.527	13.055.881

Table 7 shows the increase in the debt to asset ratio in 2018 before the implementation of PSAK 73 and after the implementation of PSAK 73 by 4.1%. This increase was influenced by the recognition of right-of-use assets after the implementation of PSAK 73. The company's debt to equity ratio also had positive implications with an increase of 11.2% from 2018 before the implementation of PSAK 73 to after the implementation of PSAK 73. Thus, it can be concluded that the implementation of PSAK 73 for the first time by PT Unilever Indonesia Tbk proven to increase debt to assets and debt to equity ratio. Meanwhile, the increase that occurred in 2019 and 2020 was specifically due to the increase in the number of bank loans made by the Company and the increase in the amount of long-term employee benefit liabilities, not due to the implementation of PSAK 73.

The return on assets of PT Unilever Indonesia Tbk shows that it has decreased from 2018 before the implementation of PSAK 73 to after the implementation of PSAK 73 by 4.2%, this decrease illustrates the addition of total assets due to the recording of the lease and the recording of the lease does not have a positive effect on the addition profit. Whereas in 2019 - 2020 the number of right-of-use assets decreased due to depreciation and the decline in the company's return on assets in 2019 and 2020 was specifically caused by a decrease in profits generated by the company, not due to the addition of right-of-use assets.

The company's EBITDA increased by 2.4% in 2018 from before the implementation of PSAK 73 and in 2018 after the implementation of PSAK 73, this was due to an adjustment to the depreciation of right-of-use assets. The decrease in EBITDA in 2019 and 2020 was specifically due to an increase in sales and promotion costs as well as an increase in general and administrative operating expenses, not due to the implementation of PSAK 73.

From the results shown by the comparative analysis above, it can be concluded that the implementation of PSAK 73 for the first time by PT Indosat Tbk and also the first time by PT Unilever Indonesia Tbk has proven to increase the debt to asset ratio, debt to equity ratio and reduce return on assets. Meanwhile, the implementation of PSAK 73 for the first time did not have an impact on the EBITDA of PT Indosat Tbk but increased the EBITDA of PT Unilever Indonesia Tbk, this difference was due to the different approaches taken. These results are consistent with previous studies (Sacarin, 2017; ztürk and Serçemeli, 2016). Meanwhile, changes in financial indicators that occurred after the implementation of PSAK 73 in subsequent financial reporting periods (2019 and 2020) were caused by specific financial transactions of each company, not specifically due to the implementation of PSAK 73.

CONCLUSION AND DISCUSSION

Based on the results of the discussion, this case study found the following conclusions. The background that drives PT Indosat Tbk and PT Unilever Indonesia Tbk to implement PSAK 73 early is due to encouragement from overseas company shareholders (coercive isomorphism) and supported by demands from professionals who are considered correct (normative isomorphism). Factors that influence the decision making of actors at PT Indosat Tbk and PT Unilever Indonesia Tbk to carry out early implementation of PSAK 73 are based on the dominant logic, namely regulatory logic and internal factors, namely the readiness of the company's IT system. The implementation of PSAK 73 by PT Indosat Tbk and PT Unilever Indonesia Tbk has complied with and followed the provisions contained in the standard PSAK 73. The difference in the implementation of PSAK 73 is based on the specific factors of each company's rental portfolio.

The implementation of PSAK 73 also has an impact on several key financial indicators of the company, where the implementation of PSAK 73 for the first time has proven to have a positive effect on the debt to asset ratio, debt to equity ratio and has a negative effect on the return on assets of PT Indosat Tbk and PT Unilever Indonesia Tbk. PSAK 73 for the first time also has a positive effect on the EBITDA of PT Unilever Indonesia Tbk, but has no effect on the EBITDA of PT Indosat Tbk.

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BAFE027:
**HOW RURAL BANKS RESPOND TO MONETARY
TRANSFORMATION VIA BANK LENDING CHANNEL? EVIDENCE
FROM INDONESIA**

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Abstract

In this paper, we investigate the existence of monetary policy transmission via bank lending channel on Indonesian rural bank that located across provinces. Our data consist of 1860 rural banks that located in across 34 provinces in Indonesia. We find that monetary transmission via bank lending channel works on rural bank in Indonesia. When the central bank of Indonesia tightening the monetary policy, the lending channeled by rural bank reduces, and vice-versa. Our findings implies that the transmission of monetary policy via bank lending channel is remain strong policy provided by central bank.

Keywords: Rural bank, monetary policy, monetary transmission, Indonesia

BAFE030:
ARTIFICIAL INTELLIGENCE AND MALASIAN SMEs
PERFORMANCE
(CONCEPTUAL STUDY)

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Abstract

The new industrial revolution is gaining wide momentum among a lot of the world country which has been called the fourth industrial revolution, also known as Industry 4.0. Despite this has led to a rapid change in companies embracing the development of Industry 4.0 to improve their business outcomes with the help of AI, SME's in the developing country still face some obstacles when intend to adopt digitalization, which has affected negatively of its financial performance and competitive position among other companies. Just like in Malaysia, the studies have shown that SME's financial performance is still weak compared to large enterprises and they still suffer from weakness in adopting digitalization in their operations, so it has become necessary to work on the support and guide it to be able to maintain its viability.

Therefore, this study seeks to explore the factors of AI capabilities and measure the degree of its impact on firms' financial performance through its impact on creativity as an intermediary change, and presented some propositions, the most important of which is that AI capabilities have a positive impact on the financial performance of SME's through its impact on innovation as an intermediary variable.

Keywords: Industrial revaluation, IR 4.0, digitalization, SME's, financial performance

BAFE031:
**A CONCEPTUAL PAPER: IMPACT OF COVID-19 ON PERSONAL
FINANCIAL PLANNING MANAGEMENT**

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Abstract

Covid-19 pandemic has caused a huge impact toward Malaysian economy due to implementation of several Movement Control Order (MCO) since 18th March 2020. MCO has affect the daily life of the citizen especially spending, saving and investment behavior, known as personal financial management. The unprecedented Covid-19 pandemic that erodes the wealth management globally has even engendered a huge challenge who are just started engaging in the workplace. This paper focuses on investigating the impact of financial situation, financial behavior, and financial literacy that affect the Malaysian graduates in their personal financial planning during the Covid-19 pandemic period. A further research methodology such as interview and survey are recommended to support the finding of the study.

Keywords: covid-19, personal financial management, Malaysia

BAFE039:
**EFFECTS OF BOARD DIVERSITY ON THE PROFITABILITY OF FTSE
BURSA MALAYSIA KUALA LUMPUR COMPOSITE INDEX (FBM
KLCI) COMPONENT COMPANIES**

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Abstract

Continuous efforts by the Malaysian government to instill principles of competency, accountability and transparency among corporate board members had led to the rise of corporate governance ranking, where Malaysia was ranked fourth among twelve Asia Pacific countries in the 2018 CG Watch Report. Although the Malaysian government had implemented the Women Directors' Programme since 2012, the programme is yet to achieve its targeted threshold of 30 percent women directors among the FBM KLCI component companies' board, which recorded an average of only 18.92 percent during the period 2014-2018. Therefore, whether the rise in country's corporate governance ranking and the diversity of corporate boards in terms of gender, independency and international experience can turn into better bottom-line profits for companies are worth to be investigated. With an unbalanced panel of 145 firm-year observations collected on the 30 FBM KLCI component companies over the financial years from 2014 to 2018, the regression results indicate that percentage of women directors on board has a significant positive relationship with return on equity (ROE), while board size has a significant inverse relationship with ROE. In addition, both the percentages of independent directors and international experienced directors show no significant relationship towards ROE. Based on these findings, the Malaysian government should step up the efforts to achieve the target of 30 percent women directors. Besides, shareholders should appoint directors who are really independent in carrying out their monitoring and advisory functions, and avoid political networking and nepotism appointments that unnecessarily lead to large board size.

Keywords: Women Directors, Independent Directors, International Experienced Directors, Return on Equity, KLCI Component Companies

INTRODUCTION

Nowadays, many countries are trying to emphasize and instill corporate governance practices and culture to enhance the country's economic and company performance by improving company accountability, integrity, and transparency. Corporate governance is emphasized in the approach on how companies are directed and monitored. The Board has the responsible and fiduciary duty to govern the companies. The shareholders' take part in governance is to choose suitable candidate as the company directors to reassure themselves that a proper governance system is cultivate in their organization. The company board of director have the duties involve establishing business's strategic plans, provide guidance and overseeing the overall company management to report the shareholders on their stewardship. Corporate governance is regarding how the board of a company performs with what principles it sets for the company, and it is recognized from daily operational management by permanent executives.

Continuous efforts by Malaysian government to instill the principles of competency, accountability and transparency among corporate board members had bear fruits as Malaysia has gained seven places and was ranked fourth among 12 Asia Pacific countries in the 2018 CG Watch Report published by Asia Corporate Governance Association (ACGA) and CLSA. ACGA mentioned that the significant improvement for Malaysia reflects the concrete moves of the Malaysian government to tackle endemic corruption issues previously (New Straits Times, 2018). However, in

CG WATCH 2020 special report, Malaysia and Thailand were the only markets that placed worse due to each suffering the negative effects of politics on different aspects of their corporate governance ecosystems. Malaysia's ranking fell from fourth to fifth among Asia Pacific countries even though the score rose from 58.00 percent to 59.50 percent. This is because the magnitude of the score improvement was below the average improvement of 3.00 percent across all markets. In Malaysia, changes of government and ideology can have a direct and quite sudden impact on corporate governance and organizational leadership (CG Watch, 2020).

Besides, although the Malaysian government had launched the Women Directors' Programme in year 2012 to increase the proportion of women directors to 30 percent by year 2020 on the boards of corporations and small-and-medium enterprises (SMEs), the programme has yet to achieve its target of 30 percent women directors in year 2017. According to Yusof (2017), the co-founder chairman of the Malaysian Chapter of the 30% Club said that only 95 out of 928 listed companies have achieved the target of having 30 percent of women represented on the companies' board as at October 2017. Out of the remaining 833 companies, 372 have no women on their boards. The failure to achieve the set target was attributable to difficulties of sourcing board-ready women directors or those with specific skills, and the limited profiling of potential women directors. Empirical research findings on how the presence of women directors and gender diversity on board influence firm performance in Malaysia were mixed. Study by Ahmad, Raja Kamaruzaman, Hamdan and Annuar (2019) found a significant negative relationship, whereas study by Mohamed, Jaapar and Khalid (2019) found a significant positive relationship. For independent directors, agency theory predicts that a higher proportion of independent directors on the board can improve firm performance through effective monitoring of the management team. However, results from study by Jakpar, Tinggi, Tan, Johari and Khin (2019) showed no significant relationship between independent directors and firm performance. Moreover, study by Liew, Alfian and Devi (2017) found that there was a significant negative relationship between independent directors' tenure and firm value in Malaysia, indicating that there was an expropriation due to long tenure of the independent directors. Some previous studies such as Tee, Lim and Aik (2017) used the percentage of foreign directors as a measure of nationality diversity, but very few studies have used the percentage of directors with working or study experience in foreign countries as the proxy. The latter seems to be more appropriate because the percentage of foreign directors serving on Malaysian listed companies' board is still quite low in general.

Given these research gaps, this research aims to examine how the diversity of board composition affect listed companies' performance in Malaysia. More specifically, the research questions to be answered from this research are: (i) Does the appointment of more women directors improve firm performance?; (ii) Does the appointment of independent non-executive directors reduce agency problem between managers and shareholders, leading to a better firm performance?; (iii) Does the appointment of directors with international exposure and experience help to improve firm performance?; and (iv) Does the size of the board of directors matter for firm performance?

LITERATURE REVIEW

With the number of women in the workforce has increased significantly over the past two to three decades, the representation of women in the board of directors and senior management in companies still remained low. In year 2012, the Malaysian government launched the Women Directors' Programme to lift up the percentage of women directors to the target threshold of 30 percent. Study by Stoet, O'Connor, Conner and Laws (2013) discovered that women are better than men in multi-tasking, which proved the Asian social structure's belief of women directors is incapable in holding top decision making positions wrong. According to a study conducted by Ahmad et al (2019) on top 200 companies listed of Bursa Malaysia from financial years 2011 to 2013, the percentage of women directors are negatively correlated with return on asset. However, the study further found that the academic background of women directors which are relevant to the tasks performed have positive correlation with return on asset. This result implied that shareholders of listed companies should appoint women directors who have the relevant qualification and experience, rather than just appoint them for the sake of meeting government policy's target of 30 percent women directors. Besides, another study conducted by Mohamed et al (2019) on a sample of 80 Bursa Malaysia listed companies from financial years 2016 to 2018, results revealed that women directors on board inserted positive vibes in improving firm performance measured by return on asset. This result implied that public listed companies in Malaysia are getting used to the government policy and accept the fact that there is a positive progress towards gender equality in their boardrooms.

Agency theory explains the conflict of interest between shareholders and managers in corporations when separation of ownership and control arise. Directors and managers are the agent appointed by the shareholders to manage day-to-day operations of the company, and they are responsible to make the right decisions that will increase the value of the company and hence the shareholders' wealth. Nevertheless, in companies where the corporate governance mechanisms are weak, directors and managers may make business decisions that will maximize their personal interests instead of shareholders' wealth. One of the typical corporate governance mechanisms to reduce agency problem is to appoint non-executive directors who are independent from the management team to sit on the board of directors. Independent directors will not only monitor the performance and business decisions made by the management team, but also provide valuable advises to the management team in fostering strategic and sustainable competitive moves for the company. Therefore, agency theory predicts that the higher the percentage of independent directors on the board, the better is the company's performance. However, study by Jakpar et al (2019) based on 30 Bursa Malaysia listed companies from financial years 2011 to 2015 found that both the proportion of independent directors and the proportion of non-executive directors have negative but insignificant relationship with firm's return on asset. The insignificant negative relationship was attributable to the fact that many independent directors do not have the skills and knowledge to manage the business, but they are appointed for other motives such as political networking and nepotism, especially for many family-controlled businesses in Malaysia. In addition, research by Liew et al (2017) found that there was a significant negative relationship between independent directors' tenure and market-based valuation of the firm, suggesting that there was evidence of expropriation by independent directors who have served for long tenure on the board for both family owned and non-family owned firms in Malaysia. Moreover, they also found that controlling shareholder's ownership had a positive moderating effect on this relationship.

Resource-based view (RBV), also known as resource advantage theory, stated that a firm can achieve sustainable competitive advantage if it can identify and develop resources and capabilities which are valuable, rare, imperfectly imitable and non-substitutable (VRIN). A board that composed of directors with different skills, knowledge, experience and exposure could probably help to achieve sustainable competitive advantage and hence better firm performance. Based on a sample of 348 Malaysian listed companies from financial years 1999 to 2010, Tee et al (2017) study supported the RBV, where the percentage of foreign directors sitting on the board had a significant positive relationship towards return on equity, albeit the mean percentage of foreign directors among the Malaysian companies are quite low. Perhaps local directors with sufficient long-term working or studying experience in foreign countries could also contribute ideas and thoughts that can cultivate unique VRIN resources and capabilities in the company, and not necessary need to have nationality diversity in the board of directors. Thus, the percentage of directors with international experience can be used as a proxy instead of the percentage of foreign directors.

Besides, size of the corporate board might also influence firm performance. When there are more directors on the board, more ideas and opinion could be generated to tackle business problems and develop better strategies. However, if the board becomes too large, group conflict may occur, which in turn will jeopardize firm performance. Research by Zabri, Ahmad and Khaw (2016) on top 100 Malaysian public listed companies from financial years 2008 to 2012 revealed that board size has a significant negative correlation with return on asset and insignificant correlation with return on equity. The average board size for the sample over the sampling period is nine directors. The significant negative correlation is probably due to group conflict within the boardrooms when the board size is too large. According to another study by Guest (2009) on 2,746 United Kingdom public listed companies from 1981 to 2002, the boards performed a low supervision role. He found that board size has a strong negative effect on company profitability and share return. This outcome was robust across econometric models that controlled for different types of endogeneity. Furthermore, his study also discovered that the negative relationship was stronger for large firms, which likely to have bigger boards in comparison to small firms. Generally, his findings supported the argument that issues of poor communication and decision making weaken the performance of large boards.

Based on the review of various theories and empirical findings of previous corporate governance researches in Malaysia, the conceptual framework for this study is formed. Proportions of women directors, independent directors and international experienced directors are expected to have positive relationship with firm's performance, while the size of the board of directors is expected to

have negative relationship with firm's performance if it becomes too big due to nepotism and political interference appointments.

RESEARCH METHODOLOGY

The sample for this study is the 30 FTSE Bursa Malaysia Kuala Lumpur Composite Index (FBM KLCI) component companies based on the list retrieved from Bursa Malaysia official website on 23rd December 2019. The rationale to choose these top 30 Malaysian public listed companies with the largest market capitalization is that FBM KLCI is often the main barometer for market investors to assess the performance and movements of the overall Malaysian stock market. The sampling period for this research is from financial years 2014 to 2018. Table 1 below shows the list of the 30 FBM KLCI component companies.

Table 1: List of FBM KLCI Component Companies

NO	STOCK CODE	CONSTITUENT COMPANY NAME
1	1015	AMMB HOLDINGS BHD
2	6888	AXIATA GROUP BERHAD
3	1023	CIMB GROUP HOLDINGS BERHAD
4	7277	DIALOG GROUP BHD
5	6947	DIGI.COM BHD
6	3182	GENTING BHD
7	4715	GENTING MALAYSIA BERHAD
8	3034	HAP SENG CONSOLIDATED BHD
9	5168	HARTALEGA HOLDINGS BHD
10	5819	HONG LEONG BANK BHD
11	1082	HONG LEONG FINANCIAL GROUP BHD
12	5225	IHH HEALTHCARE BERHAD
13	1961	IOI CORPORATION BHD
14	2445	KUALA LUMPUR KEPONG BHD
15	1155	MALAYAN BANKING BHD
16	5014	MALAYSIA AIRPORTS HOLDINGS BHD
17	6012	MAXIS BERHAD
18	3816	MISC BHD
19	4707	NESTLE (M) BHD
20	5183	PETRONAS CHEMICALS GROUP BHD
21	5681	PETRONAS DAGANGAN BHD
22	6033	PETRONAS GAS BHD
23	4065	PPB GROUP BHD
24	8869	PRESS METAL ALUMINIUM HOLDINGS BERHAD
25	1295	PUBLIC BANK BHD
26	1066	RHB BANK BERHAD
27	4197	SIME DARBY BHD
28	5285	SIME DARBY PLANTATION BERHAD
29	5347	TENAGA NASIONAL BHD
30	7113	TOP GLOVE CORPORATION BHD

Source:

https://www.bursamalaysia.com/sites/5d809dcf39fba22790cad230/assets/5df990be39fba21de93efba2/FBMKLCI_Constituents_List__website_.pdf

Data for this research are collected from secondary data sources. Directors' profile and financial statements of each sample company are obtained from its annual reports downloaded from Bursa Malaysia website and Bloomberg financial database. For this study, return on equity (ROE) will be adopted to measure firm's performance instead of return on asset (ROA). This is because the former is a measure of return to the owners of the firm, i.e. the ordinary shareholders, while the latter is a measure of return for both owners and creditors combined together. From the directors' profile, some proprietary data will be computed. Percentage of women directors (WDP) is calculated as the number of women directors divide by the total number of directors on the board, then multiply by 100. Percentage of independent directors (IDP) is calculated as the number of directors who are not involve in the management team and also not related to any management team members, divide by the total number of directors on the board, then multiply by 100. Percentage of international experienced directors (IEP) is calculated as the number of directors who have long-term working or studying experience in foreign countries, or originated from foreign countries, divide by the total number of directors on the board, then multiply by 100. Board size (BS) is calculated as the total number of directors on the board. For all these measures, alternate directors are not counted in the computation.

Due to unavailability of few annual reports, this research has an unbalanced panel of 145 firm-year observations, instead of a balanced panel of 150 firm-year observations. ROE will be the dependent variable for this research, while WDP, IDP, BS and IEP will be the independent variables. The regression model is stated as Equation 1 below:

$$ROE_{it} = \alpha + \beta_1 WDP_{it} + \beta_2 IDP_{it} + \beta_3 BS_{it} + \beta_4 IEP_{it} + \varepsilon_{it} \quad (\text{Eq.1})$$

Where:

ROE = return on equity in %

WDP = percentage of women directors in %

IDP = percentage of independent directors in %

BS = board size

IEP = percentage of international experienced directors in %

i = each of the 30 FBM KLCI component company

t = each financial year, from 2014 to 2018

α = constant term

β = beta coefficient for each independent variable

ε = error term

Descriptive analysis on mean, standard deviation, maximum, minimum, skewness and kurtosis will be performed on dependent and independent variables of this study. Next, correlation among the independent variables of WDP, IDP, BS and IEP will be conducted to check if there are any strong associations between pairs of independent variables which may lead to multicollinearity problem in the regression model. Then, pooled ordinary least squares regression (POLS) will be run on the model stated in Equation 1 above. The results from POLS regression will determine whether the null hypothesis of the following hypotheses are rejected or not rejected at the standard 95 percent confidence interval.

H1: There is a positive relationship between the percentage of women directors (WDP) and firm's return on equity (ROE).

H2: There is a positive relationship between the percentage of independent directors (IDP) and firm's return on equity (ROE).

H3: There is a negative relationship between the size of the board (BS) and firm's return on equity (ROE).

H4: There is a positive relationship between the percentage of directors with international experience (IEP) and firm's return on equity (ROE).

DATA ANALYSIS

Table 2: Descriptive Analysis Results

Descriptive Statistics	ROE	WDP	IDP	BS	IEP
Mean	24.56%	18.92%	52.51%	8.95	91.80%
Standard Deviation	52.35%	11.89%	10.65%	1.75	12.29%
Maximum	314.39%	57.14%	77.78%	14.00	100.00%
Minimum	-22.56%	0.00%	33.33%	5.00	50.00%
Skewness	4.5073	0.2499	0.3429	0.4891	-1.5330
Kurtosis	9.6861	2.7477	2.3862	2.7939	4.5390

Source: Developed for this research

From the summary of descriptive statistics shown in Table 2, the mean percentage of women directors (WDP) on the board for the 30 FBM KLCI component companies over the period from 2014 to 2018 is 18.92 percent. This indicates that the FBM KLCI public listed companies have not achieved the target of 30 percent women directors for board's gender diversity as set by the government's Women Directors' Programme launched in 2012 and also the Malaysian Code of Corporate Governance (MCCG) revised in 2017 (Securities Commission Malaysia, 2019). The WDP ranges from a minimum of 0.00 percent to a maximum of 57.14 percent. For the percentage of independent directors (IDP), the mean for the 30 FBM KLCI component companies over the period 2014 to 2018 is 52.51 percent. This fulfilled the Bursa Malaysia listing requirements that stated at least one-third of the board members must be independent directors (Bursa Malaysia, 2019). IDP ranges from a minimum of 33.33 percent to a maximum of 77.78 percent, indicating that all the 145 firm-year observations met the requirement. Meanwhile, the average number of directors serving on the board of the 30 FBM KLCI component companies is 8.95, which rounds up to 9 directors. Over the period, the largest board size is 14 and the smallest board size is 5. Besides, the mean percentage of directors with international experience (IEP), including those foreign directors who originated from foreign countries and those local directors who have long-term working or studying experience abroad, is 91.80 percent. IEP ranges from a minimum of 50.00 percent to a maximum of 100.00 percent over the period. The skewness for WDP, IDP and BS are less than 1.00, indicating that they are normally distributed. On the other hand, the distribution of IEP is slightly skewed as the skewness is slightly above 1.00. As for the return on equity (ROE), the mean ROE for the sample companies over the period from 2014 to 2018 is 24.56 percent. The highest and lowest ROE are 314.39 percent and -22.56 percent respectively. The skewness and kurtosis of ROE indicate that it is not normally distributed. This is acceptable because the 30 FBM KLCI component companies are operating in different industry sectors and their performance susceptible to different changes in the business environment and industry cycles.

Table 3: Correlation between Independent Variables

	WDP	IDP	BS	IEP
WDP	1.000000	-0.019973	-0.149571	0.204045
IDP	-0.019973	1.000000	0.010819	0.082968
BS	-0.149571	0.010819	1.000000	-0.131260
IEP	0.204045	0.082968	-0.131260	1.000000

Source: Developed for this research

Table 3 shows the summary of Pearson product moment correlation scores among each pair of the independent variables for this research. Correlation can range from -1 to +1 and it measures the co-movements between two continuous variables. Positive correlation indicates both the variables move in the same direction, while negative correlation indicates they move in the opposite direction. According to Schober, Boer and Schwarte (2018), the coefficient of less than 0.10 is negligible, 0.10 to 0.39 is weak, 0.40 to 0.69 is moderate, 0.70 to 0.89 is strong and more than 0.90 is very strong. Based on the results in Table 3 above, all the correlations are below 0.39, indicating that the correlations between independent variables are either weak or negligible. The highest correlation is observed between WDP and IEP, which is 0.2040. Therefore, there is no multicollinearity issue for the

regression model stated in Equation 1. The precision of the estimated coefficient for each independent variable will not be reduced.

Table 4: Pooled Ordinary Least Squares Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	46.24360	44.25778	1.044869	0.2979
WDP	1.003681***	0.357534	2.807233	0.0057
IDP	-0.362630	0.389073	-0.932036	0.3529
BS	-6.884524***	2.411164	-2.855270	0.0050
IEP	0.436179	0.349996	1.246239	0.2148
R-squared	0.147927	Mean dependent var		24.63750
Adjusted R-squared	0.123582	S.D. dependent var		52.86246
S.E. of regression	49.48835	Akaike info criterion		10.67523
Sum squared resid	342873.5	Schwarz criterion		10.77787
Log likelihood	-768.9539	Hannan-Quinn criter.		10.71693
F-statistic	6.076295	Durbin-Watson stat		0.088879
Prob(F-statistic)	0.000154			

***, ** or * indicates that the coefficient is significant at 0.01, 0.05 or 0.10 level respectively.
 Source: Developed for this research

Pooled ordinary least squares (POLS) regression is performed on the model stated in Equation 1. The R-squared of 0.1479 indicates that 14.79 percent of the variation of ROE is explained by the changes in WDP, IDP, BS and IEP. WDP has a very significant positive relationship with ROE as its p-value of 0.0057 is less than 0.01. For every 1 percent increase in the proportion of women directors on the board, the firm's ROE will rise by 1.0036 percent. Besides, BS has a very significant negative relationship with ROE as its p-value of 0.0050 is less than 0.01. Increase of one board member will bring to a decrease in firm's ROE by 6.8845 percent. However, the p-values for both IDP and IEP are greater than 0.05, indicating that there are no significant relationship between IDP and ROE as well as between IEP and ROE.

CONCLUSION AND DISCUSSION

Table 5: Summary of Hypothesis Test Results

Hypothesis	Null Hypothesis Rejected?	Actual Relationship	Expected Relationship
H1: There is a positive relationship between the percentage of women directors (WDP) and firm's return on equity (ROE).	Yes	Significant Positive	Positive
H2: There is a positive relationship between the percentage of independent directors (IDP) and firm's return on equity (ROE).	No	Insignificant Negative	Positive
H3: There is a negative relationship between the size of the board (BS) and firm's return on equity (ROE).	Yes	Significant Negative	Negative
H4: There is a positive relationship between the percentage of directors with international experience (IEP) and firm's return on equity (ROE).	No	Insignificant Positive	Positive

Source: Developed for this research

Based on the findings from data analysis, the hypothesis test results are summarized in Table 5. The null hypothesis of H1 and H3 are rejected, indicating that increase in the proportion of women

directors brings gender diversity to the board that can improve firm's profitability. Apart from that, increase in the board size brings negative impact on firm's profitability due to large board size causes group conflicts within the board. Both of these findings conform to the expected relationships predicted by theories. On the other hand, the null hypothesis of both H2 and H4 are not rejected, implying that both the presence of more independent directors and directors with international experience on the board have no significant influence on firm's profitability. Both of these findings contradict with the expected positive relationships predicted by theories.

Results from this research shows that the percentage of women directors (WDP) has a significant relationship with return on equity (ROE). This result is also consistent with Mohamed et al (2019). Since the mean WDP is only 18.92 percent, it has not reached the target set by the government in the Women Directors' Programme and the Malaysian Chapter of 30% Club. Therefore, government should step up the efforts to push more public listed companies to appoint more women directors and achieve gender equality in the boardrooms.

Percentage of independent directors (IDP) has an insignificant negative relationship with ROE. This could be the so-called independent non-executive directors are not really independent. They could be appointed for the purposes of political networking in order to enhance the company's chance of winning the bid for some government projects or personal interests of executive directors to entrench through nepotism. As pointed out by Deng (2019), most of the independent directors did not perform their supervision and advisory responsibilities independently and just act as a rubber stamp function. In addition, some of the shareholders and management of the companies may think that hiring independent directors will incur additional directors' fees and management costs. Hence, independent directors are appointed just to fulfill regulatory and listing requirements for some public listed companies. Furthermore, instead of appointing independent directors, retail and institutional minority shareholders may use platform provided by the Minority Shareholders Watch Group (MSWG) to monitor for any violations and non-fulfillment of corporate governance practices by public listed companies to defend the benefits of minority shareholder via shareholders' activism.

Board size (BS) is found to have a significant negative relationship with ROE. When the board size is too big, it can lead to miscommunication and group conflict within the boardroom, which in turn may hurt the company performance. The significant inverse relationship found in this research is consistent with the findings of Guest (2009) who pointed out that larger companies tend to have larger boards, and poor communication and inefficient decision making have brought negative impact on profitability and share return. Moreover, in an earlier study by Mark and Kusnadi (2005), negative relationship between board size and company value transcends in different corporate governance systems in Malaysia. Therefore, being the top 30 largest public listed companies in Malaysia, shareholders and management teams of FBM KLCI component companies should appoint directors with the suitable qualifications and capabilities only, and avoid political networking and nepotism appointments that unnecessarily increase the board size and negatively affect the company performance. As found in Elbaz, Haddoud and Shehawy (2018) study among Egyptian travel agencies, there is a negative relationship between nepotism and employees' capabilities and competencies. Besides, research by Hasnan, Kamaruzaman, Mohd Sanusi and Ali (2019) on 644 companies listed on Bursa Malaysia in 2016 discovered that presence of political linkage did not greatly enhance company performance.

Percentage of directors with international experience (IEP) has an insignificant positive relationship with ROE. This result can possibly be attributable to the fact that business strategies adopted in the international operations of a company cultivated from the advice of directors with international experience and exposure may take time before the effects can be seen. Also, the international experienced directors are assigned with tasks that do not match with their relevant skill sets, knowledge and experience.

In conclusion, some board characteristics such as the percentage of women directors and board size indeed showed significant effects on the profitability of public listed companies. Therefore, government policymakers and shareholders should take these into consideration as part of the mechanism to improve corporate governance among the Malaysian public listed companies. Appointment of independent directors who are not really independent in carrying out their supervisory and advisory responsibilities should be avoided.

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BAFE041:
**PEER EFFECTS ON CORPORATE CASH HOLDINGS: EVIDENCE
FROM VIETNAM**

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Abstract

This research examines the peer effects on cash holdings in Vietnam, an emerging market, and finds a reverse peer effect on them - that is, a firm's level of cash holdings negatively relates to those of its peers. We also note the reverse peer effects are stronger for firms facing less competition and with low intangibility. Because the Vietnam market has noticeable lower competition and investment in innovation than in developed economics like the U.S., our evidence lend supports for competition and innovation investment positively driving cash holdings' peer effects and reconciles inconsistencies in the literature. Our findings also support heterogeneity across countries in peer mimicking behavior and contributes to the cash holdings literature for the Vietnam market

Keywords: Cash Holdings, Peer Effects, Vietnam

BAFE042:
**FACTORS THAT INFLUENCE FINANCIAL MANAGEMENT
BEHAVIOUR AMONG MILLENNIALS IN PERAK DURING THE
COVID-19 PANDEMIC**

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Abstract

Malaysians still lacking the ability to make rational and responsible financial decisions, especially the millennials. Millennials are often associate with poor financial behaviour and financial management skills which lead them to serious financial obligations. The outbreak of COVID-19 pandemic has worsened the global economic condition, and Malaysia is no exception. The economies were severely impacted and suffered from massive losses due to business interruptions and various measures undertaken by the government such as the Movement Control Order (MCO). The purpose of this research is to study the factors that influence financial management behaviour among millennials during the COVID-19 pandemic in the state of Perak, Malaysia. Based on the Theory of Planned Behaviour (TPB), the relationships between millennials' financial management behaviour and its driving factors namely, financial knowledge, financial attitude, locus of control, and financial socialization agents are identified. The study used survey method with a sample size of 160 millennials who are currently residing in Perak. The finding of this study exhibits that financial attitude and financial socialization agents have significant influence on the financial management behaviour of millennials among the group of study. The research may be useful for policy makers and higher education institutions to arrange a more supportive environment that can help encourage better financial management behaviour among millennials during pandemic.

Keywords: Financial Management Behaviour, COVID 19, Millennials

BAFE043:
**DOES AUDIT COMMITTEE EXPERT AND GENDER CONSTRAINT
EARNINGS MANAGEMENT? EVIDENCE IN MALAYSIA**

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Abstract

The purpose of this study is to explore if the gender and expertise of audit committee members affect the committees' ability to limit earnings management (EM) and hence their effectiveness in regulating the financial reporting process in Malaysian public listed companies. Discretionary accruals, which are routinely utilized to assess earnings management, are used in this study. This study will rely on secondary data, which will be gathered through company annual report registered on the Bursa Malaysia. This study hopes to contribute to the growing of literature specifically to corporate governance literature specifically on AC characteristics with regards on earnings management. The findings of this study offer investors a new perspective on corporate value by focusing on not just financial performance but also qualitative criteria.

Keywords: Audit committee expert, audit committee gender, earnings management, Public Listed Companies

1.0 INTRODUCTION

Accounting figures and financial information reported to stakeholders are essential for measuring a company's performance and financial condition. Accounting earnings are also the most important components in a financial statement since they determine capital market resource allocation. As a result, financial reports should not be made with the intention of misleading users. Instead, the statement should give investors with accurate, timely, and relevant information to help them make decisions (Bala, Amran & Shaari, 2019; Rahman & Mansor, 2018). According to recent research, managers frequently alter financial statements with the intention of improving its performance (Bouaziz, Fakhfakh, & Jarboui, 2020; Lento & Yeung, 2017). This is said to be earnings management manipulation.

Earnings management has a variety of definitions, and scholars have come up with a variety of concepts. Earnings refers to a company's earnings as indicated in the income statement's bottom line and a summary item in the accounts (Rahman, Moniruzzaman & Sharif, 2013). Earnings management occurred when managers used their financial reporting decisions to alter reports in order to either deceive stakeholders about the company's performance or influence outcomes that are based on accounting information (Healy & Wahlen, 1999). Thus, there is no surprise when company management has an interest in how the accounting numbers are reported or in other words the management knows how to manage earnings.

The failure of well-known firms has been related to earnings management. Earnings management of a significant amount is considered as fraudulent financial reporting which lead the company to involve in accounting scandal. Firms such as Enron, WorldCom, Parmalat, and Tyco are some examples of firms that have been linked with the accounting scandals (Salome, Ifeanyi, Ezemoyih, & Echezonachi, 2012). These company's managers mislead the accounting information to produce the targeted results. While in Malaysia, there are several cases such Sime Darby Berhad, a multinational corporation in Malaysia which did not reveal substantial details that had been disclosed and a case reported on Transmile Group Berhad (TGB) in 2007 it exposed that the responsibilities of financial affairs not only for management, accountant and auditor but also the audit committees. As a

result, corporate governance mechanisms such as the audit committee have been formed to match the interests of shareholders and managers to increase financial statement quality and avoid company failures.

Audit committees play a significant role in financial reporting's consistency and performance since they serve as part of the framework for improving operations and the economic benefits of companies. It is in line with the new MCCG 2021, which emphasizes that a well-functioning audit committee can provide the transparency, concentration, and independent judgement necessary to oversee the financial reporting process. Furthermore, the audit committee is an important part of the governance structure of a firm. As a result, it is suggested that the effectiveness of AC has an impact on the quality of earnings. The effectiveness of audit committees' roles are expected to play an important role in minimizing the earnings management, which has been focus of most prior study. A recent research by Astami and Rusmin (2020) indicate that active audit committee plays an important role in identifying and minimizing the risk of earnings management. However, the literature to date seems to offer inconsistent results, even though studies mostly show significant relationship. There is very limited research on the impact of audit committee characteristics, such as AC expert and AC gender (Qi & Tian, 2012). This conclusion shows that the audit committee's effectiveness needs to be improved, and future research should look into the function of audit committee characteristics in EM mitigation. As a result, the study's research attempts to see if audit committee characteristics like audit committee expert and audit committee gender constraints earnings management.

The integration of agency theory to the study of earnings management may lead to a direct assessment of the cause-and-effect relationship between this theory and earnings management in the literature. The emphasised agency theory has previously been used to explain why managers sometimes appear to make project continuance decisions that are not in the best interest of the firm, based on a few previous research (Harrison and Harrell, 1993; Harrell and Harrison, 1994). When the principal and the agent have asymmetric information, this situation arises. Information asymmetry occurs when an agent has access to information that the principal lacks at the moment the agent makes a judgment. In summary, this theory explain that the existence of an audit committee ensures that managers act in the best interests of shareholders. The primary motive of establishing audit committee is to impose significant influences on the board of directors in the area of financial reporting (Rahman & Ali, 2006). In addition, from the standpoint of agency theory, the audit committee supports the shareholders through its supervision, control, and monitoring functions (Ika & Ghazali, 2012).

Thus, shareholders and investors will put a lot of emphasis on financial information provided by audit committees. Therefore, firms organise audit committees in order to improve the quality of financial reporting. (Saleh, Iskandar, & Rahmat, 2007). The audit committee's also responsible for disciplining and monitoring managers' discretion and tendencies to falsify accounting earnings (Hamdan, Al-Hayale, & Aboagela, 2012). Similarly, the audit committee's responsibility is to assess the company's financial reports and confirm that they appropriately reflect the business 's financial and actual economic performance (Klein, 2002). Furthermore, the audit committee is promoted as government and regulatory authorities as a legitimate instrument for improving financial statement transparency and quality (Bamahros and Bhasin, 2016).

2.0 LITERATURE REVIEW

2.1 Audit committee expert and earnings management

The firms will benefit from the presence of AC expertise in ensuring that financial difficulties are managed properly and effectively. According to the agency's theory, AC expertise will provide adequate supervision, causing a reduction in agency issues. Financial experts such as having members who have skills in accounting and finance are better in improving the financial reporting quality. Therefore, audit committee include financial expertise which can improve the effectiveness of audit committee functions, financial reporting and financial disclosures (Mangena & Pike, 2004).

According to MCCG 2021, para. 9, practices 9.5 stated, "Audit Committee should possess a wide range of necessary skills to discharge its duties. All members should be financially literate, competent and are able to understand matters under the purview of the Audit Committee including the financial reporting process" (emphasis added).

According to other research, audit committees with financial expertise and hands-on experience producing financial statements, as well as industry experience, are better able to supervise financial reporting than those with none (Sun, Wei, & Xu, 2012). As a result, the audit committee expert can prevent and detect fraudulent financial reporting. The audit committee members also can ensure that the company is compliance with the legal and regulatory requirements. Since the financial reporting process is the responsibility of the AC, the board members of the AC should have the skills and financial experience to sit on the AC (Zalata, Tauringana & Tingbani, 2018).

Financial experts on audit committees are also better at monitoring earnings management than audit committees that lack this expertise. As a result, some regulations requiring at least one "financial expert" on audit committees. According to a prior study, audit committees with financial experience have a better chance of overseeing firm earnings management than those who don't (Qi & Tian, 2012).

In view, financial expert and qualified accountant has been found to have significant relationship with the earnings management. Qualified accountant has lower impact in earnings management (Abdul Rahman & Mohamed Ali, 2006) while audit committee with financial expertise reduces financial restatements that suggest the earnings management activities (Xie et al., 2003; Bedard, Chtourou, & Courteau, 2004; and Abbott, Parker, & Peter 2004.) Therefore, audit committee with financial expertise has significant relationship towards earnings management. This has substantial consequences for policymakers and corporate boards in emerging economies when it comes to the need to appoint financial expertise (Rezaee, Asiaei, & Delooie, 2021). Based on the above indicators, it is confirmed that the agency theory indicates that the presence of audit committee has significance relationship with the quality of financial statements.

In contrast, a study indicated that earnings management has no effect on the audit committee's financial expertise (Ghosh, Marra & Moon 2010). Their findings are similar to those of Abdul Rahman and Mohamed Ali (2006), who found no link between having an audit committee with at least one competent accountant and having less earnings management. According to Be'dard, Chtourou, and Courteau (2004), earnings management is negatively connected to AC members' accounting expertise. Zahn and Tower (2004) found no link between earnings management and the financial expertise on the audit committee. Based on empirical study (DeZoort and Salterio, 2001) financial expertise has been associated to improved committee support for the auditor in corporate management challenges. Even past studies documented mixed results, it is suggesting that the knowledgeable of financial for audit committee is important to detect or prevent earnings management. Based on the discussion above, from the past studies, the findings will lead to the follow hypothesis:

H1: Audit committee with financial experts is associated with low earnings management.

2.2 Audit committee gender and earnings management

Most research in Malaysia and others have identified gender as a key factor in audit committee earnings. The inspiration for this study stems from the Sarbanes-Oxley Act of 2002, which sought to improve the audit committee's composition as an essential function in the financial reporting and governance process. Female directors, according to Adams and Funk (2012), are more giving and completely committed, but less power-oriented than men. The findings may be substantiated, especially since the lack of female participation on boards has recently been a serious issue that must be addressed due to the benefits derived from gender diversity in boardrooms (Julizaerma & Sori, 2012). The finding indicates that a positive association exists between gender diversity and firm performance. It is consistence with most of the studies indicate positive relationship with company performance. In relation to the appointment of male audit committee members, Huang, Yan, Fornaro, and Elshahat (2011) find that the appointment of female audit committee members has a significant positive with abnormal returns. As a result, the study demonstrates that having a female member on the audit committee can help to improve corporate governance. These findings suggest that female audit committees are associated with less earnings management than male audit committees (Qi & Tian, 2012), which is consistent with Peni and Vahamaa (2010), who discovered that female directors use accruals to manage earnings less than male directors (Peni & Vahamaa, 2010). In conclusion, female audit committees are more efficient than male audit committees.

Addition, Krishnan and Parsons (2008) find that the higher proportion of female managers in a firm's, the higher earnings quality is. Thiruvadi and Huang (2011) pointed out that having a female director on the audit committee has several benefits, including a better corporate governance practice. While Liu, Wei and Xie (2016) in their study highlighted that female are less aggressive in earnings management compared to men. Hence, to demand a better audit quality, it is believing that the presence of female's audit committee can help to enhance the effectiveness of audit committee. There is explanation that female audit committees are also seen to help companies generate more earnings. The discoveries could bolster efforts in many nations to increase the number of women on corporate boards of directors through legislation or regulation (Qi & Tian, 2012). The presence of female committee members in the audit committee also is negatively associated with earnings management (Salleh & Haat, 2013). It is supported by prior study implies more board of member's diverse gender may better to avoid the practices in earnings management, thus it provides the shareholders with more reliable figure on financial reporting (Gallego, Garcia & Rodriguez, 2010). It is confirmed by agency theory suggests that more board diversity can provide better monitoring of the firm. Therefore, the propose study the hypothesis is stated as follows:

H2: Audit committee gender (female) is associated with low earnings management.

3.0 CONCEPTUAL FRAMEWORK

Based on the literature and the above discussion leads to the following framework.

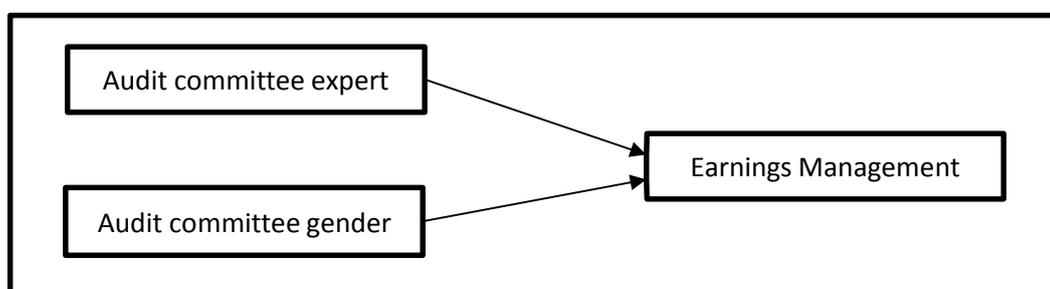


Figure 1: Proposed Conceptual Framework
 Source: *Developed for this study*

4.0 METHODOLOGY

4.1 Sample selection and data sources

The sample used in this paper consists of all public listed companies in Malaysia from main market and ACE market. Companies listed in these markets are different in nature of business and listing requirements. All the data related will be taken from financial report of these listed firms accessed from Thompson Reuters DataStream, Bloomberg, and annual reports of the listed firms.

4.2 Measurement of variables

4.2.1 Measurement of earnings management

The measurement of the earnings management is similar with prior research by using total accruals (TACC) which is divided into two parts: non-discretionary accruals (NDAC) and DAC:

$$TACC = NDAC + DAC$$

Total accruals (TACC) for company are computed by using the difference between Net Income (NI) and Cash Flows from Operation (CFO) divided by Total Assets previous year (TA - t):

$$TACC = \frac{NI - CFO}{TA - t}$$

The Modified Jones Model, developed by Dechow, Sloan, and Sweeney (1995), would be used to compute discretionary accruals.

$$DACC = \alpha_1 \frac{1}{TA-t} + \alpha_2 \frac{(\Delta REV - \Delta REC)}{TA-t} + \alpha_3 \frac{PPE}{TA-t} + e \quad (1)$$

Where,

TACC = total accruals measured by net income – cash flows from operation

TA-t = prior total asset

ΔREV = change in sales or revenue

ΔREC = change in trade receivables

PPE = property, plant and equipment

DACC = discretionary accruals from the residual estimated from model 1

4.2.2 Measurement of audit committee expert and gender

The expert and gender data for audit committees will be collected from each company's annual financial report. The details can be accessed in the profile of the audit committee report of the company's financial report for each firm. The proportion of audit committees with expert (ACEXPERT) will be value of 1 if audit committee is financial expert (i.e. accountant or auditor) and 0 is non-financial literate. For the audit committee gender (ACGENDER) the value of 1 if audit committee is male and 0 if audit committee is female.

5.0 CONCLUSION AND DISCUSSION

A conceptual model was developed based on the literature review. The purpose of this study is to evaluate the propose hypotheses by looking at the effects of audit committee expertise and gender on earnings management. The model will be tested, validated, and improved in the future. The results will be provided in the following article.

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BAFE046:
IMPACT OF ACCOUNTING NUMBERS ON MARKET VALUE OF LISTED COMPANIES IN NIGERIA

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Abstract

The Nigerian Stock Exchange is full of activities; the past six (6) years show that all Nigerian listed companies from all the sectors of the economy continue to drop in prices, a situation which is attributed to the decline in Market value. This study examines the extent to which market value of all the listed companies in Nigeria are associated with fundamental accounting numbers the variables studies are price-earnings ratio (PER), dividend per share (DVPS), book value per share (BVPS) and earnings per share (EPS). In addition, it also investigates impact of accounting numbers on Market value of listed companies in Nigeria using data obtained from the Nigerian Stock Exchange (NSE), annual report of the companies for the period 2015 to 2020. The study uses ordinary least square (OLS). Random Effects (RE) model and Fixed Effects (FE) were used for data analysis. After applying filtering methods like mergers and acquisition, voluntary withdrawal, technical suspension / delisting and non - availability of data as ninety-six (96) companies were selected as a sample of the study. The result of the study revealed that all the explanatory variables are statistically and significantly influenced the outcome variable. This implies that accounting numbers, which the listed companies in NSE published, have high impact on the Market value for the investors in making investment decisions on the companies. However, individual explanatory variables, EPS; PER; BVPS; and DVPS, also increase market value increases, findings revealed that there was positive significant impact on Market value. Recommendations of this research is that there should be clear and understandable corporate information on the annual reports, also regular check on the reaction of existing investors and the historical information on investment decision making process in the capital market should be made available to investors in Nigeria.

Keywords: Disclosure, Information asymmetry, Corporate Market Value, Capital Market

INTRODUCTION

Accounting is regarded as the language of business by which the annual reports and accounts of corporate firms containing the required financial accounting numbers is communicated to various users. Accounting number originates in the form of ratio, book value per share (BVPS), dividend per share (DVPS) and earnings per share (EPS), while non-accounting numbers means information, but not rumor and speculations. Accounting number serves as a means of measuring and communicating economic event to the management of business enterprises and the general public; hence, the management of the listed firms use it to predict future EPS, PER, BVPS and DVPS of their firms through annual reports that must be relevant and reliable to the investors. For the purpose of this study, accounting numbers is described as written information that contains complete or final reports which include consolidated and separate statements of profit and loss account and other comprehensive income, statement of financial positions and separate statements changes in equity that enable the users to think of investment decision.

Annual reports of listed firms contain accounting numbers used by the management team and investors to evaluate the performance of their firms in order to make better investment decisions. The annual report has the main objective of providing a reliable, timely and relevant accounting numbers to investors. However, Osahon (2012) opines that external reporting system is used to measure the performance of publicly disclosed audited annual reports of listed firms. There is the need to appreciate annual report of a corporate firm for betterment of the investors trading on the stock market as the objective of investors is to gain rather than to lose.

Market value is the value of share in the stock exchange market. The value is attached to securities in the stock based on various factors such as micro and macroeconomic indices. While macro variables such as inflation rate, interest rate, Gross Domestic Products (GDP) are being tested in economics and finance fields, the micro factors like accounting information are major factors utilised in the accounting research. Prior researches have considered the potential impact of accounting Numbers on Market price from both develop and under develop economies. The results show most of the research is influenced by factors such as location, and market structures, of the country of studies and environmental development in the location of the reports and financial accounting.

There is in depth literature of researched on Earnings per share (EPS) and share prices. Studies, such as Saheb and Muhammed (2013), Ademola (2016), Oliveira and Taques (2016), have considered the significant impact of EPS on the stock prices. They define earnings per share as the amount profit attributable to each equity share as the amount of profit not distributed to shareholders as this could be the most important factor for deciding the health of any firms that could equally influence the buying tendency in the stock market. Market value is influenced by the firms' EPS as the relation is measured by profit after tax divided by the total numbers of ordinary shares issued. The expectation of every investor is market value to rise as buying and selling increase. This makes the investors to have more confidence in the stock market. EPS is a vital variable that can be used for measuring accounting numbers' impact on market value of listed firms in Nigeria.

Also, Kouser and Azeem (2011) examine the correlation between share price, and earnings and book value of equity on Karachi stock exchange in Pakistan between 2002 and 2009, covered period of eight years. Findings revealed a significant correlation among share price, earnings and equity book value. Furthermore, Ebrahim and Chidegani (2011) investigate the relationship that exist between dividends, earnings and stock price in order to examine whether the current period earnings divided by the stock price at the beginning of the stock market prior dividend divided by stock price at the beginning of the stock market period and the reverse of the stock at the beginning of stock market period are positively significant related to explain stock market returns on Tehran stock exchange.

The researcher is thus motivated to study the extent to which accounting numbers influenced market value in the Nigeria stock. The study of the likelihood of the market value of stock listed on the Nigeria Stock Exchange being a reflection of accounting information is very essential to investors as well as policy makers. Recent result shows that stock markets have positive impact on economic growth (Healy and Willliston, 2005). In a bid to collaborate the aforementioned, the perception of corporate firms and individual investors about importance of annual reports that have transparency and accountability, efficiency and investment decision is also considered. The value and the quality of accounting numbers are determined by how well it meets the needs of users (Khanagha, 2011). Therefore, the flow of reliable information is crucial to the growth of the capital market – without it investors would simply keep their hard – earned savings under their box.

It may not be over statement to say that capital market will not function well without efficient and transparent accounting information. Deficiency in the capital market will affect Nigeria as emerging economy because capital market is the engine of the economy growth (Okeke, 2004). Hence, the study of whether the market value of stock listed on the Nigeria Stock Exchange reflects accounting information is not only important to investors but also crucial to Nigeria economic growth. The adoption of international financial reporting standard become necessary as the period of the research covered IFRS adoption in Nigeria. The study is to examine impact of accounting numbers on market value of listed firms in Nigeria. The result from the data analyses reveals that individual explanatory variables, EPS; PER; BVPS; and DVPS, also increase market value increases, findings revealed that there was positive significant impact on Market value. The remaining section of this study include literature in section two, methodology in section, data analyses in section and conclusion in section five.

LITERATURE REVIEW

Accounting Numbers and Market Value

Ball and Brown (1968) examine the relationship between the market value and accounting numbers of listed firms on New York Stock Exchange. The study period covers 1957-1965 with 261 listed firms. The study tested the hypotheses and reveal how abnormal returns on the stock market in relation to the announcement of the preliminary annual earnings per share numbers which was the first annual EPS figure announced. Findings reveal that there is positive significant relationship between market value and earnings numbers. Clout (2007) studied the Australian firms and empirically reported that there is an equilibrium correlation relationship between market values and accounting numbers.

Adetula, Obigbemi, Owolabi, and Nwobbu (2016) examine accounting numbers and stock prices in Nigeria stock market as an indicator of value relevance. The study period covers 2002 - 2015 with the uses ordinary least square to measure information contents of various accounting numbers. The study reveals that there is significant relationship between share prices and accounting information of firms listed on the Nigeria. Asif, Arif and Akbar (2016) investigate accounting information's effects on the share price of listed 30 firms on Pakistan Stock Exchange Stock Exchange market with the time frame from 2006 to 2013, using OLS regression model. The study reveals that the accounting variables are important factors of price speculation in the Pakistan Stock Exchange.

Similarly, Kargin (2013) examines impact of IFRS on the value relevance of accounting information of listed firms on the Istanbul stock exchange market; it covers two periods 1998 to 2004 (pre-IFRS) and 2005 to 2011 (post-IFRS). The study employs Ohlson model (1995) for the analysis of the data, and reveals that accounting information's value relevance is significantly influenced by IFRS in the Istanbul stock exchange. Roshan (2013) examine correlation between accounting information items and share price movement and in investment. The study compares investors in the Tehran stock exchange and investors on Indian stock exchange. It reveals existence of a positive correlation between the accounting figures and the value of listed firms expressed mainly through market capitalization. The study by Vigitha and Thasam (2014) examines the correlation between share prices of the listed firms on the Colombo stock exchange and accounting information's value relevance. The empirical evidence shows accounting information's value relevance on manufacturing companies. The study finds that the share price of Colombo stock exchange market is influenced by accounting information's value relevance significantly. Kim and Yoon (2012) examine empirical evaluation of fair value accounting numbers to check the usefulness of existing information in the capital market and thereby sent in new information to the market. The study reveals firms with market-to-book ratio below one is required to report impairment losses are to effectively raised concerns by critics of fair value accounting. Findings results show how firms with delay write-off have significantly higher buy- and hold abnormal returns prior to the announcement of earnings as fair value accounting numbers reflect existing and new information in the market.

Adetula, et,al (2016) investigate financial accounting numbers and the emerging Nigeria Stock market. The study period covers 2002 -2008 and the study reveal that financial accounting numbers are reflection of stock prices, and indicating of value relevance. Accounting data is deemed value relevant if it is significantly connected with the stock prices. Findings reveal that there is major positive correlation between financial accounting numbers and stock prices of listed firms on the NSE. Givoly, Hayn. and Katz (2013) examine changing relevance of accounting numbers to debt holders over time. The study period covers 1975-2008 with the uses of proprietary longitudinal data. The unique features of the study include bond valuation and bond returns responding to accounting information. The study shows the association between accounting information and bond values has become stronger over time with results from linear regression. Findings shows there is positive significant increment on information contents of accounting numbers from the debt holders' perspective. Salman, Liu and Khan (2015) examine the relationship between market value and accounting numbers of firms in Pakistan Cement industry. The study period covers 2005-2014. The study used seventy (17) companies listed on Karachi Stock Exchange and uses market returns and market price as dependent variables while independent variables include breakup of shares, dividend to equity ratio and gearing ratio. The results of findings shows that accounting numbers has positive

influence on the market prices, also is earnings per share that is statistically has significant influence on the market prices of Pakistan Cement Industry.

Using information obtained from listed companies in Nairobi Securities exchange, Nyabundi (2013) investigates value relevance of financial statements information. The study focuses on the period from 2005 to 2010. The study reveals that there is exists a significantly positive correlation among the dividends, book value, stock price, and earnings of the listed on the Nairobi stock exchange. Khanagna, (2011) examine the value relevance of accounting information in pre and post periods of international financial reporting standard implementation using regression and portfolio approaches for sample of the UAE companies. The results obtained from combination of regression and portfolio approaches showed accounting information was value relevant in UAE stock market.

In addition, Abba and Suleiman (2016) study the share value and corporate attributes of listed Nigerian pharmaceutical companies in Nigeria. The study investigates the relationship between the two variables; it focuses on the period from 2004 to 2013. The findings show there is a significantly positive correlation among company size, leverage, profitability, growth and share price; all these variables lead to increase in share price. On the other hand, the study reveals that there is a negative correlation between share price and liquidity. This implies that the Nigerian listed pharmaceutical companies' share price is not influenced by liquidity.

Theoretical and conceptual framework

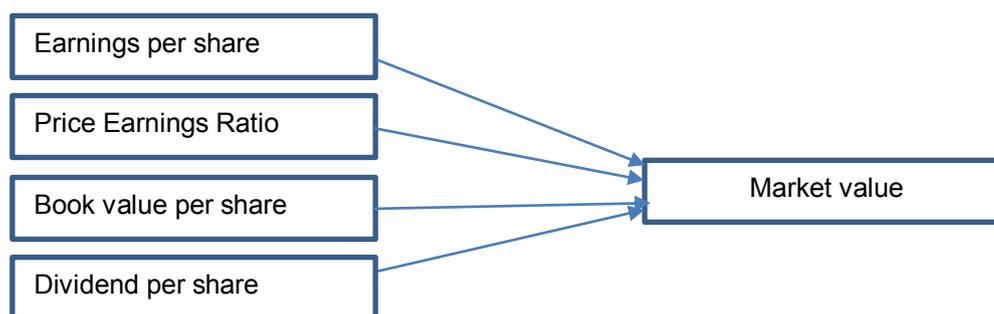
Signaling Theory

Spencer (1973) propounds the signalling theory to describe labour market behaviour, but it can also assist in explaining voluntary disclosures of accounting information among corporate entities (Watson, Shrivies & Marston, 2002). This theory focuses on how to solve the problems relating to information asymmetry in social situations; it proposes minimizing information asymmetry if signals could be transmitted from the information source to other relevant stakeholders (An, Davey and Eggleton, 2011). The theory proposes that corporate entities with better performance or high-quality firms would like to distinguish themselves from other low-performing or low-quality companies by sending signals to the market through voluntary disclosure and consequently minimising the information inequality (Watson et al., 2002).

Adaramola and Oyerinde (2014) state that better relevant information is sent to the capital market to source capital by efficient firms than less efficient ones do. Also, Kerimu, et al, (2013) argue earning is employed as a signalling instrument by firms' managers for disseminating the information on the opportunities in the firm. They argue further that stock price changes are usually influenced by earnings contained in the immediately preceding public announcement if it conveys relevant and valuable information. In addition, increase in issuance of debt instruments causes' prices increase actions; stock splits lead to rise in price, while increasing issuance of a company's equity share leads to reduction in its share price. Berhad, Douglas and Robertson (2007) have observed that markets, in most cases, are disequilibrium that information comes at a cost; everyone does not have access to it at the same time. Perera and Thrikawala (2010) state that any time dividends or earnings is announced by a company, the shareholders get a signal from it and the share prices of the firms listed in the stock market are affected if the received signal according to expectation.

Based on the prior expectation of this study, the accounting numbers are expected to signal information to the market participants, hence, affect the positions to be taken. Besides, Watson et al. (2002) opine that for any corporate entities to signal quality information, the signal must not only be credible but also reliable, as verifiability of such acclaimed quality will ensure achievement of company's credibility among market participants. Therefore, transmitting of a signal is usually dependent on the supposition that it should be favourable to the sender (An et al., 2002).

CONCEPTUAL FRAMEWORK



Hypothesis development

Earnings Per Share and Market Value

Earning is a fundamental and prominent accounting variable when it comes to the investigation on the impact of accounting numbers on market value. Earnings per share which is parameter that can be used to measure the earnings ability of firms is required to be disclosed by companies quoted or about to be quoted in the public security market (Adetula, 2016). The non-public enterprises to the extent that it would enhance their financial report comparability, are encouraged to present their EPS on the income statements (Menaje, 2012). Contrary to the past practice of presenting information's on the earnings per share in the form of primary and fully diluted EPS. Mulenga (2015) examines accounting information's value relevance of the public-sector banks listed on Bombay stock exchange (BSE). Two panel data technique model, which comprises random effect model and fixed effect model, was employed for data analysis. The study finds that there exists between share per price and earnings per share a significant positive correlation. However, returns on equity, book value per share and assets turnover ratio with share price have an insignificant correlation. It was also found that there is a very low positive relationship between share price and return on equity, while share has a positive relationship with return on equity, book value per share and earnings per share banks listed in BSE.

Also, Uwuigbe, Uwuigbe, Jafaru, Igbinoba and Oladipo (2016) examine share price and financial statements' value relevance on listed banks on Nigerian stock exchange. The findings show that earning per share has a significantly positive relationship with the last day share price on the Nigeria Stock Exchange. Ernest and Oscar (2014) explore the value relevance of the financial information in the petroleum and banking sectors in Nigeria. The periods of the study covered from 2007-2011. Multiple regression analysis and Ordinary Least Square were used for data analysis and method of estimation from selected companies' financial reports. It is discovered that the financial information disclosed by oil and gas sector has more significant value relevance than that disclosed by the banking sectors. All revealed that EPS information is significant value relevant to investors.

Also, Erin, Olajede and Ogundele (2017) examine accounting data's value relevance in the Nigerian pre- and post-IFRS periods. The study covers the periods 2008 - 2011 before IFRS and 2012 - 2015 after IFRS adoption and fifty-two 52 listed firms from Nigeria stock exchange (NSE) were used. The study adopted accounting data's returns regression model and price regression model. The findings show that the accounting data's value relevance is significant in the post-IFRS period; and the value relevance of accounting data, e.g book value, earnings, net income on NSE and cash flow, is enhanced by the implementation of IFRS. Olugbenga and Atanda (2014) investigate the correlation among the Nigerian market value and accounting information. Panel model and Generalized Least Squared regression techniques are employed for data analysis. The study finds that cash flows, dividends, accounting information on earnings and book value are means of predicting share prices of quoted firms in Nigeria. It also revealed existence of a significant correlation among the share prices of quoted companies in NSE and accounting information.

Adaramola and Oyerinde (2014) examine the accounting information's value relevance of sixty-six listed financial and non-financial firms and their annual financial reports are obtained from the Nigeria stock exchange. The study employs trend analysis, focusing on the period of global economic

meltdown from 2005 to 2009 and the period of political crisis as a result of the military dictatorship between 1992 and 1998. The Ordinary Least Square regression method was used. It is revealed that accounting information's value relevance is not followed due to the trend in the Nigeria capital market. The findings also show that securities' value is directly influenced by accounting information in the capital market. It recommends the listed firms on the Nigeria stock exchange should comply with accounting standards. Hence, the current study hypothesized as follow:

H₁ There is no significant impact of Earnings Per Share on Market Value of listed company in Nigeria.

Price-Earnings Ratio and Market Value

Cruz and Aeson (2015) examine earnings management choice on the earnings management's effects on stock returns. The study reveals that accounting choice depends on two earnings management strategies, accounting-based and real activities-based which affect capital market incentive for firms. The study considers financial analysts and investors' increased use of accounting information for valuing stock as managers use earnings to influence stock returns. It shows that financial information is used by the investors in determining their expectation in the presence of earnings management.

Irsath, Haleem and Ahamad (2015) examine accounting information's value relevance and stock price reaction of quoted, tobacco, beverages and food firms; the study covers the period from 2010 to 2014 and twenty-two quoted banks on the Colombo Stock Exchange. The study uses published annual reports and website of the firms listed in CSE. It reveals that stock price is significantly and positively influenced by independent variables i.e., DPS, EPS and NAVPS. Also, EPS, DPS, NAVPS are significantly correlated with stock price in CSE. Liu and Liu (2007) investigate accounting information's value relevance of the listed firms' EPS, PER and BVPS in various parts of stock market shares in Chinese stock exchange market. Ohlson Model is used for data analysis and it covers the period from 1999 to 2003. It reveals that the opening event of EPS, PER and BVPS share to domestic investors shows a significant value reliance to accounting information of the Chinese stock exchange. Mousa (2015) examines correlation between stock price and financial statement disclosure in industrial shareholding firms. The study finds out whether investors' use of this information can make them earn abnormal return. The study employs market model for evaluation of and the change behaviour of stock price and normal return of all industrial shareholding companies listed in Amman bourse.

Eriable and Egbide (2016) examine share prices and accounting information in the foods, beverages and conglomerate sub-sector of stock exchange in Nigeria. The study covers the period from 2005 to 2014, using Ohlson model (1995). It reveals that accounting information significantly affects markets prices per share in the foods and beverages subsector. Also, Saheb, and Muhammad (2013) examine factors that determine stock price on Dhaka stock exchange. The study reveals that stock price is affected by some qualitative factors such as company announcement, market sentiment, analysts report, AGM, print and electronic media, company goodwill, unexpected circumstances, technical influence, political turmoil, international situation, change in government policy; and quantitative factors, including market capital, dividends, price- earnings ratio, margin loan, Earnings per share, retained earnings, net income return on investment, merger, stock split, demand and supply of stock price of stock, interest rate, inflation, exchange rate. Investigation shows that economic condition, price earnings ratio, demand for the share, stock price rumour, environment, local and foreign politics, and change in government policies affect Dhaka stock price most. Hence, the current study hypothesized as follow:

H₂ There is no significant impact of Price-Earnings Ratio on Market Value of listed company in Nigeria.

Book Value Per Share and Market Value

Glezako, Mylonakis and Kafouros (2012) examine accounting information's effect on stock prices of 38 listed firms on Athen stock market within the period from 1996 to 2008. Ohlson's 1995 model is adopted and the results reveal that accounting information, book value, is more significant on stock prices compared to earning information. Pirie and Smith (2005) examine the relationship among accounting information and stock price with review of Ohlson Model and residual income. It is found that a more significant correlation among book value and earnings than either variable alone, and that

the relationship differs in various accounting regimes. Clout (2007) investigates the correlation among accounting numbers and market value of 30 companies listed on Australian stock exchange (ASE). The study covers the period between 1950 and 2004, using equilibrium correction modelling technique. It reveals that there is significant correlation among book values and market value of listed companies in ASE.

Alkali and Lode (2016) examine accounting disclosure's value relevance with international financial reporting standard (IFRS) among listed firms on Nigerian stock exchange and Ohlson model (1995) is used to determine the stock price relationship that exists between assets and liabilities. It reveals that a significant relationship exist among liabilities and assets with the stock price as empirical evidence shows that the difference on the value relevance of assets and liabilities prepared and disclosed under IFRS is statistically significant in the context of listed firms on Nigeria stock exchange. Similarly, Solomon, et al. (2016) examined the equity share investment and earnings per share in listed firms in NSE. The study covers the period of ten years, between 2004 and 2014. Fifty-eight (58) companies are used for data collection. It reveals existence of significantly positive correlation among equity share investment and accounting information in the quoted firms in Nigeria. It also discovers that there exists a positive relationship between equity share investment and variables of accounting information such as BPVS. In addition, the findings reveal that equity investment share is significantly affected by earnings per share in the listed firms in NSE. Olowolaju and Ogunsan (2016) examine accounting information's value relevance on Share price determination of twelve banks listed on the Nigeria Stock Exchange (NSE). Descriptive and inferential statistic was use for analysis. It is revealed that market value per share, dividend per share, book value per share, and earnings per share have a significant correlation. It is also revealed that market value of share in Nigeria banks responds positively to earnings per share and dividend per share which contribute significantly to the market price of banks' share in the Nigeria Stock Exchange. Hence, the current study hypothesized as follow:

H₃ There is no significant impact of Book Value Per Share on Market Value of listed company in Nigeria.

Dividend Per Share and Market Value

Dividends are proportion of corporate profit paid to its ordinary stockholders or shareholders. Many studies have been conducted on dividend policies earlier which explain the relationship between dividend policy and stock prices. These studies help new researcher to explore the dividend policy in a new way. Discussion of dividend policy cannot be completed without including the work of (Linter 1956). Linter (1956) raises the question, which is still important. "What choices made by manager do affect the shape, size and timing of dividend payments?"

Gordon (1963) gives another view about dividend policy by presenting the concept of dividend relevance theory. He says that dividend policies do affect the value of firm and market price of shares. Investors always prefer secure and current income in the form of dividends over capital gains. Glezako, Mylonakis and Kafouros (2012) examine the relationship between stock price and accounting information; 38 listed firms on Athens stock exchange (ASE) are used, covering the period from 1996 to 2008. Ohlson's 1995 model is employed for data analysis; the results reveal that accounting information book value is more significant on stock prices compared to earning information. Pirie and Smith (2005) examine the relationship among accounting information and stock price with a review of Ohlson Model and residual income. It is revealed that book value and earnings have more significant relationship than either variable alone, and that the relationship differs in various accounting regimes. Ademola, Olajumoke and Ifayemi (2016) examine the relationship between stock price volatility and accounting information on stock price volatility in the 5 listed manufacturing companies Nigeria Stock Exchange (NSE), covering the period from 2005 to 2014. Hausman test is use as a model. The results reveal that stock price volatility is significantly affected by accounting information compared to other variables. Furthermore, Khanna (2014) examines the accounting information's value relevance in quoted companies on Bosonnia stock exchange; it covers the period between 2006 and 2011. It is revealed that accounting information's value relevance is represented by a combination of book value per share and earnings per share in Bostonian stock exchange market.

Duke, Ikenna and Nkamare (2015) examine the correlation between share price evaluation and dividend policy in Nigeria banks. It uses two commercial banks United Bank for Africa (UBA) and Guaranty Trust Bank (GTB). The independent variables used are dividend yield, retention ratio, while the dependent variable is the market price. The study employs, through E-view software packages, Ordinary Least Squares Test and Unit Root Test. It is found that dividend policy share price is significantly and positively affected by dividend policy, but significantly and negatively affected by retention ratio. The study recommends that regular update of shareholders record for prevention of any purposeful diversion and withholding unclaimed dividend warrants unduly. It also suggests that there should be a robust dividend policy in place and a body should be established for managing unclaimed dividends to bring the situation under control and reduce the problem to the minimal level. Hence, the current study hypothesized as follow:

H₄ There is no significant impact of Book Value Per Share on Market Value of listed company in Nigeria

RESEARCH METHODOLOGY

3.1 Sampling Design

The study samples all the one hundred and seventy-two (172) companies listed on the main board of Nigeria Stock Exchange as at 01/01/2015. Also, the study uses five criteria for filtering firms. First, some companies opted out during this period by writing NSE to delist them from the official list because they were unable to meet listing requirements continuously. Second, some firms were technically delisted or suspended by regulators from 2015 to 2020. The third categories were firms involved in merger scheme and acquisition at the period of this research. Belonging in the fourth category are any firms that the government, through it agencies, nationalised and firms which were unable to provide enough data on the variables which the present study uses. It was discovered 25 firms could not either made their data available or, where they were available; the variables of interest to this study were not adequately presented in the reports. This was examined thoroughly from 2015 to 2020. Similarly, the population has been filtered down to 96 firms, which is equivalent to about 56% of the companies listed in NSE within the period investigated by this study. This is presented in the Table 1 below:

Table1: Sampled Firms after the Filters

As of 1st January,	2015	2016	2017	2018	2019	2020
Firms	172	159	144	137	137	128
Merger and Acquisition	0	4	0	0	2	1
Voluntary withdrawal	1	3	1	0	2	6
Technical suspension/delisted	12	5	6	0	5	0
Nationalized: CBN	0	3	0	0	0	0
Non- availability of data	0	0	0	0		25
As of 31st December	159	144	137	137	128	96

Source: Author's computations (2020)

3.4 Research Procedure

To test the hypotheses, the explanatory power of dividend per share, earnings per share, book value per share and price-earnings ratio are estimated by comparing the coefficient of the determination of the models stated below and Ordinary Least Square Method is employed for evaluating the effect of accounting numbers on market value using panel data. Also, the effect will be measured at 5% of significance and Hausman test will be used to determine random and fixed effect techniques.

3.4.2 Model Specification

In this study, the researcher adopts models to ensure all variables are presented in a functional sign to examine the effect of accounting numbers on market value in Nigeria stock market.

Also, the variables are to be used to determine the research objectives. Stochastically, the proposed relationship is presented as follows:

$$MV_{it} = \delta_0 + \delta_1 EPS_{it} + \delta_2 PER_{it} + \delta_3 BVPS_{it} + \delta_4 DPS_{it} + \varepsilon_{it}$$

Where;

MV_{it} = Market Value of firm *ai* at time *t*
EPS_{it} = Earning Per Share of firm *ai* at time *t*
PER_{it} = Price – Earning Ratio of firm *ai* at time *t*
BVPS_{it} = Book value Per Share of firm *ai* at time *t*
DPS_{it} = Dividend Per Share of firm *ai* at time *t*;
 δ_0 = constant term; $\delta_1 - \delta_4$ = coefficient estimate

DATA ANALYSIS

The summary of the descriptive statistics of the variables used in this study is presented in the Table 2 below. We conducted further analyses for the purposes of establishing normality of the variables. The 96 firms sampled over six years give 565 observations and aggregate observations of 5.89 based on six variables employed in the analyses of the present study, which is adequate for carrying out various regression analyses. The summary of statistics, including Jaque-Bera, mean, median highest, kurtosis and skewness, to draw insights from the variable distribution patterns.

Table 2: Descriptive statistics

	Mean	Median	Std. Dev.	Skewness	Kurtosis	J-Bera	P-Value	Obs
SV	13.81	1.58	37.98	4.84	29.74	19037.82	0.000	565
BVPS	163.91	0.00	614.44	4.98	28.01	17057.68	0.000	565
DVPS	14.81	0.00	65.47	7.13	67.28	102051.90	0.000	565
EPS	41.96	1.99	132.59	3.50	27.49	15270.96	0.000	565
PER	2.64	0.05	23.81	-3.94	160.08	582322.70	0.000	565
AGE	37.59	36.00	20.55	0.23	2.25	18.12	0.000	565

Source: Computations by the researcher (2020)

From table 4.3.1 above, the average price of the sampled firms is about fourteen naira with a median value of about two naira. The deviation of the price from the mean shows about 38% which indicates the possibility of non-normality of the data. A further look at skewness shows that it is above the threshold value of 0 with the kurtosis value of above 3 points. This also confirms the series market value is not normally distributed. Similarly, the result of Jaque-bera confirms the non-normality of the series. In the same vein, all other series indicate non-normality of series based on their skewness, kurtosis and jaque-bera results. This is expected because the firms used in this study are sampled from different sectors such as agriculture, conglomerate, construction, real estate, consumer goods, financial services, healthcare, ICT, industrial goods, natural resources, oil and gas and services. The existence of non-normality indicates that test for heteroscedasticity is necessary to detect the significance of its impact on the regression results and the need for robust regression to correct outliers. However, the non-normality of series does not pose any significant problem since none of basic assumptions of regression has been violated.

4.1 Analysis of findings on the effect of accounting numbers on market value

The analysis of the correlation among market value and accounting numbers begins with the test for multicollinearity using coefficient of correlation and variance inflation factor. The analyses are to confirm the possibility of perfect collinearity among independent variables and, possibly, control variables. The results of the correlation matrix and VIF are presented as follows.

4.2 Correlations among Variables

This section discusses the level of correlation between the independent (Accounting numbers), control variable (Age) and dependent variable (Market value) in order to determine the level of multicollinearity among the variables. The matrix of correlation on used for the regression

model to test the hypotheses of this is presented in table 4.3.2 below. Summarily, the results reveal that there a weak relationship among the variables. This implies that the regression analysis could not have a major problem of multicollinearity. A coefficient of correlation that is >0.8 could cause a problem of collinearity problem (Gujarati & Porter, 2009; Field, 2013), while ≤ 0.7 could means there is no multicollinearity between the explanatory variables (Kennedy, 2008). Hence, the present study aligns with the suggestions of Kennedy (2008) as the basis of determining multicollinearity using coefficient of correlation. Table 3 presents tolerance value and VIF are further considered. It is found that the variables have >0.5 tolerance and <2 . According to Hill et al. (2011), Field (2013) and Wooldridge (2010), this also indicates there is no multicollinearity because the values are above tolerance benchmark of 0.10 and lower than 10 for VIF.

Table 3: Correlation Coefficient Matrix

	MV	EPS	PER	BVPS	DVPS	Age
MV	1					
EPS	0.252**	1				
PER	0.246**	-0.031	1			
BVPS	0.256**	0.483**	-0.027	1		
DVPS	0.333**	0.587**	-0.018	0.609**	1	
Age	0.099*	-0.04	0.004	0.234**	0.061	1

**,* Correlation is significant at 5% and 5% level respectively.

Source: Computations by the researcher (2020)

From the table 3, it is observed that the relationship among all accounting numbers' measures and market value is positively significant. This indicates that the higher the accounting information is, the better the market value of listed firms in Nigeria would be. This also provides the basis for further regression analysis of the series. To confirm the possibility of multicollinearity, the correlation among the independent variables is moderate as none of them is above 80%, hence, there is no basis for transformation of data or dropping of the series. In addition, table 4 below presents the results of variance inflation factors. The results indicate absence of the multicollinearity among the independent variables.

Table 4: Result of Variance Inflation Factor

Variable	VIF	1/VIF
DVPS	1.87	0.53391
BVPS	1.77	0.565053
EPS	1.69	0.592599
AGE	1.05	0.950155
PER	1	0.998904
Mean VIF		1.48

Source: Author's computations (2020)

The next section considers the presentation and interpretation of regression results of the effect of accounting numbers on the market value of companies quoted in Nigeria.

4.3 Regression results of the impact of accounting numbers on the market value

For the purpose of testing the hypothesis correlation among the dependent variable and the independent variables, the results of various regression estimations carried out are presented as follows. The presentation begins with pool OLS in the Model as presented in appendix. The result indicates that, in the overall, the combined effect of accounting numbers on the market value among the sampled firms during the period under study is about 19%. Meanwhile, the individual explanatory variable has a positive impact on the market value though at various degrees of significance. While only two variables are statistically significant, that is PER and DVPS, at 5% EPS, the control variable (AGE) is at 10% level. Looking at the overall fitness, the model is statistically significant with F value of 25.86 ($p < 0.05$). Further, the study tests for possibility of heteroskedasticity of the regression using Breusch-Pagan/Cook-Weisberg. The result indicates absence of homoscedasticity since the probability of chi-square is less 0.05 as presented as follow.

4.4: Test of heteroskedasticity

Breusch-Pagan/Cook-Weisberg test for heteroskedasticity
 Ho: Constant variance
 Variables: fitted values of mv
 chi2(1) = 6061.24
 Prob>chi2 = 0.0000

In order to overcome the possible impact of non-Constancy of the variance of error term, the study estimates robust regression analysis as presented as model B in the table 4.6. The result of estimate, while controlling for heteroscedasticity (Robust HC3), indicates that individual independent variables have positive impact on the dependent variable surrogated in the study by market value. A closer look at the model B shows all the independent variables have a statistically significant effect on the market value. Besides, another suggested way of minimizing the effect of heteroscedasticity is to estimate the parameter using panel data analysis. Hence, the study estimated the two most common used panel estimates via fixed and random effect estimates. While the former is based on OLS assumption, the latter is estimated based on GLS principles. The results of the two estimates are presented in the table 4.5 as follows.

4.5 Result of Fixed and Random Effect Estimation

Panel regression which considers the fixed and random cross-sectional effect of the sampled firms was adopted further to test hypotheses formulated for this study. The panel regression result obtained is presented and discussed below.

Table 5: Result of Fixed and Random Effect Estimations

MV	Fixed Effect				Random Effect			
	Coef.	Std. Err.	T-value	P-value	Coef.	Std. Err.	Z-score	P-value
EPS	0.02022	0.00907	2.23	0.0260	0.0209	0.00909	2.31	0.021
PER	0.15118	0.03459	4.37	0.0000	0.17151	0.03527	4.86	0.000
BVPS	0.00403	0.00357	1.13	0.2590	0.00587	0.00315	1.86	0.063
DVPS	0.01271	0.02182	0.58	0.5600	0.02950	0.02175	1.36	0.175
AGE	-0.18402	0.42072	-0.44	0.6620	0.11553	0.13478	0.86	0.391
_CONS	18.6338	15.9406	1.17	0.2430	6.64439	5.85584	1.13	0.257
R-Sq: within		0.066			Wald chi2(5)		49.73	
F(5,464)		6.550			P-value		0.000	
Prob> F		0.000						

Source: Author's computations (2020)

Table 4.5 presents the two-panel data estimation techniques results (random effect and fixed effect). The results revealed difference in the magnitude of the coefficients, signs and the number of insignificant variables. The estimation of the fixed effect panel regression was based on the assumption that there is no correlation between explanatory variables and the error term, while that of the random effect, considers that there is a correlation between explanatory variables and the error term. In selecting from the two panel regression estimation results, the Hausman test was conducted and the test is based on the null hypotheses that the random effect model is preferred to fixed effect model.

4.6 Result of Hausman Fixed and Random Estimations

A look at the p-value of the Hausman test (0.00) indicates that the null hypothesis should be rejected and the alternative hypothesis at a significance level of 5% level is accepted. This implies that we should adopt the fixed effect panel regression results in drawing our conclusion and recommendations. This also implies that the fixed effect results tend to be more appealing statistically when compared to the random effect.

Table 4.6: Result of Hausman Fixed and Random Estimations

	FIXED	RANDOM	DIFFERENCE	S.E.
EPS	0.02022	0.020967	-0.0007469	.
PER	0.1511848	0.1715128	-0.020328	.
BVPS	0.0040349	0.0058746	-0.0018397	0.0016729
DVPS	0.0127185	0.0295084	-0.01679	0.0017204
AGE	-0.1840233	0.1155338	-0.2995571	0.3985526
chi2(5)			84.25	
Prob>chi2			0.0000	

Source: Author's computations (2020)

4.7 Summary of all the Estimated Regressions

Having considered the results from the four estimators used in the study, this section presents the summary to enable test of hypotheses. Since the Hausman test confirms the superiority of Fixed effect over Random effect estimator, the present study ignores the randomness assumptions of GLS and aligns with the assumption of OLS. However, since the fixed effect is based on OLS and the comparison of robust estimator was conducted to control for heteroskedasticity effect, the study prefers the results of this estimate to the fixed effect and pool OLS results. Thus, this was used to test the hypothesized correlation among accounting numbers and the market value of the listed firms in Nigeria as follows.

Table 4.7: Summary of all the Estimated Regressions

Variable	OLS	ROBUST	FIXED	RANDOM
DVPS	.14314808***	.13043227***	0.01271848	0.02950845
BVPS	0.00327146	0.00176859**	0.00403486	0.00587455
PER	.40397745***	0.51603749***	.15118482***	.1715128***
EPS	0.02616808	0.0425734***	.02022001*	.02096695*
AGE	0.13448481	0.24307738***	-0.1840233	0.11553376
_CONS	3.936823	-0.24552128	18.633862	6.6443902
N	565	28141	565	565
r2	0.1878476	0.196627	0.06594677	
AIC	5606.7051	281739.64	4738.9557	.
BIC	5632.7261	281789.11	4764.9767	.

Source: Author's computations (2020)

***, **, *, implies statistical significance at 5%

Hypotheses testing

As presented earlier, EPS is one of the proxies of the accounting numbers which measures the information content of financial statement. The outcome of Robust HC3 data estimation is presented in table 4.7, using market value as a measure of dependent variable. The regression results of indicate that EPS and market value of the companies sampled have a significantly positive correlation at 5% within the period studied. Because of inconsistency with hypothesis1 of this study, hence, the hypothesis is rejected and the study concludes that EPS has a significantly positive effect on market value. The possible explanation of this might be that the investors are concerned with EPS in deciding on ask and bid prices of the securities of the companies listed on NSE. Similarly, the result of Robust HC3 data estimation is presented in Table 4.7 using market value as a measure of dependent variable. It indicates that PER and market value of the companies sampled have a significantly positive correlation at 5% within the period studied. Because of the inconsistency with hypothesis1 of this study, the study rejects the hypothesis and concludes that PER has a significantly positive effect on market value. The possible explanation of this might be that the investors are concerned with PER in deciding on ask and bid prices of the securities of the companies listed on the floor of NSE.

In the same vein, the hypothesized relationship between BVPS and market value was rejected; table 4.7 presents the result of Robust HC3 data estimation. It indicates that BVPS and market value of the companies sampled have a significantly positive correlation at 5% within the period studied. The possible explanation of this might be that the investors are concerned with BVPS

in deciding on ask and bid prices of the securities of the companies listed firms on the floor of NSE. Also, the result of Robust HC3 data estimation is presented in table 4.7. It indicates that DVPS and market value of the companies sampled have a significantly positive correlation at 5% within the period studied. Because of inconsistency with the hypothesis1 one of this study, we reject the hypothesis and the study concludes that DVPS has a significantly positive impact on the market value. The possible explanation of this might be that the investors are concerned with PER in deciding on ask and bid prices of the securities of the companies listed on the floor of NSE.

4.9 Discussion of Findings

The outcome of the empirical quantitative data analyses is encapsulated and discussed in the present section. Table 4.8 presents the findings on the four hypotheses in the current study. After that, the discussion of findings based on the stated research objectives and questions in the introductory chapter are considered.

Table 4.8: Summary of Research Findings

S/ No	Hypotheses	Findings	Decision
H ₁	Earnings Per Share has no significant impact on the market value of listed firms in Nigeria.	Significant	Rejected
H ₂	Price Earnings Ratio has no significant impact on the market value of listed firms in Nigeria.	Significant	Rejected
H ₃	Book Value per share has no significant impact on the market value of listed firms in Nigeria.	Significant	Rejected
H ₄	Dividend per share has no significant impact on the market value of listed firms in Nigeria.	Significant	Rejected

Source: Author's computations (2020)

Findings from the test of our first hypothesis clearly show that, after the adoption of accounting numbers, EPS, PER, BVPS and DVPS have significant impacts on the market value of the listed firms in Nigeria. This can be attributed to investors' usual reaction to changes in corporate information concerning the proxies utilised in the present study. This significant impact can also be attributed to the fact that investors are more sensitive to EPS, PER, BVPS and DVPS changes which are the major component accrual based on the measure of annual reports.

Specifically, EPS is one of the major bases of corporate valuation in the finance literature, hence, Nigerian investors could be said to be careful of this item when making investment decisions. The finding is in line with earlier studies such as Asif, Arif and Akbar (2016), Adetula (2016), Salman, Liu, and Khan (2015), Vigitha and Thasan (2014) and Nyabundi (2013) that document the significant positive correlation among share prices and EPS.

Further, the significant positive correlation between price earnings ratio and market value could be explained as a reaction of existing and potential investors to the companies' fundamentals before making investment decisions in Nigeria. This is because PER combines both information from financial statement and market information. This finding is in line with that of Eriable and Egbide (2016), Saheb and Muhammad (2013), Cruz and Areason (2015), Irsath, Haleem and Ahamad (2015) and Liu and Liu (2007) who reveal the significant positive effect of PER on the companies' share prices.

Besides, the results of the impact of DVPS share on the market value explain its significance to the average investor in Nigeria. It is an indication that investors in the country prefer regular flow of income to the capital growth resulted from retained earnings of the profit from the corporate entities. This finding is line with Oyinlola and Ajeigbe (2014); Duke, Ikenna and Nkamare (2015) and Ejubekpokpo and Edesiri (2014) who reveal the significant positive impact of DPS on the companies' share prices. Finally, investors in Nigeria utilize historical information in decision making process in capital market as book value per share is positively significant to market value among the companies sampled in Nigeria. The finding is in line with Mgbame and Ikhatua (2013).

CONCLUSION AND DISCUSSION

In conclusion, it is glaring that after the adoption of accounting numbers, Nigerian investors are more sensitive to corporate information in order to make investment decisions. Also, investors prefer regular flow of income to capital growth that resulted from retained earnings of the profit from the corporate entities. However, investors' usual reaction to changes in corporate information concerning the proxies utilised in the present study led to the significant impact because investors are more sensitive to EPS, PER, BVPS and DVPS changes which are the major components in accrual-based measures of annual reports.

Specifically, EPS is one of the major bases of corporate valuation in the finance literature, hence, Nigerian investors could be said to be careful of this item when making investment decisions. Finally, investors in Nigeria utilise historical information in decision making process in capital market as the book value per share has a positively significant effect on market value among the sampled firms in the country. In order to achieve the objectives of this study, we formulated four null hypotheses, each covering one of the explanatory variables which state that dividends per share, earnings per share, book value per share and price-earnings per share have no significant impact on the market value of the firms listed in the Nigerian economic sectors. The findings of this work are based on the data collected for the period of 6 years, 2015 to 2020, with a sample of 96 companies listed on NSE. From a population of 172 companies, the sample consisting of 96 was selected from all the sectors using filtering method. The panel data of 96 firms for 6 years result in 565 observations. The choice of the period under study is necessitated by the adoption of IFRS in Nigerian stock market. The results of the study reveal that after the adoption of accounting numbers, all the explanatory variables are significant in explaining the market value of the sampled firms. The four variables are all significantly positive at 5% level. Thus, the accounting numbers used in this study prove to have a significantly positive impact on the market value of the listed firms in Nigeria. This can be attributed to investors' usual reaction to change in corporate information concerning the proxies used in the present study that make investors more sensitive on variables' changes that are the major components in accrual-based measure of annual reports.

This study is a contribution to literature on finance; it provides evidence that supports the positive role of accounting numbers of the study firms, thus, confirming the reliability of the disclosed annual reports. Also, the reaction of existing and potential investors to the firms in making investment decision in Nigeria must determine the relationship that exists between price earnings and market value. Additionally, the results could provide investors with regular flow of income against the capital growth as a result of retained earnings of the profit of the corporate entities. From the above conclusion and discussion, it becomes expedient to make recommendations thus: It is important for investors in the Nigerian stock market to be provided with clear and understandable corporate information on the annual reports. Finally, historical information in decision making process in the capital market should be made available to the investors in Nigeria.

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**SUBJECTIVE FINANCIAL WELL-BEING OF WORKING ADULTS IN
MALAYSIA: THE IMPACT OF PERSONAL TRAITS**

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Abstract

The increase in life expectancy and standard of living makes managing personal finance an unavoidable responsibility for everyone to achieve his financial well-being. Nonetheless, Malaysian's financial well-being has not reached a satisfactory level. Evidently, the household debt to GDP ratio and the number of bankruptcies in Malaysia has increased continuously in Malaysia, which signals poor financial management among Malaysians in their daily lives. This study examines the impact of subjective financial knowledge, emotional coping, and social comparison on working adults' subjective financial well-being in Malaysia. Judgmental sampling was employed, in which Malaysian working adults aged 18-60 were approached in this study. Partial Least Squares Structural Equation Modelling (PLS-SEM) analysis was used to analyze the 100 sets of survey responses collected from electronically distributed questionnaires. Findings revealed that both emotional coping and subjective financial knowledge have a significant impact on subjective financial well-being. A person with good emotional coping can manage his negative emotions from those stressful financial events or sudden financial shocks. Thus, the individual can adjust to the satisfactory level of financial conditions faster even if harmful incidents happen. On the other hand, one with strong subjective financial knowledge indicates a higher level of financial confidence. The person feels calm about the financial decisions that he has made, and this confidence drives him to have a higher level of satisfaction in his financial conditions. Surprisingly, social comparison is found to have no significant impact on subjective financial well-being.

Keywords: Subjective financial wellbeing, Emotional coping, Financial knowledge, Social comparison

INTRODUCTION

The increase in life expectancy and standard of living makes managing personal finance an unavoidable responsibility for everyone to achieve his financial well-being. Financial well-being is defined as the ability of a person to fulfil his current and future obligations and feel secure and satisfied with his finance-related decision-makings (Consumer Financial Protection Bureau, 2015).

Financial well-being is affected directly by financial behaviours and financial literacy. Financial behaviours are influenced by personal traits such as self-confidence, social comparison and emotional coping (Brüggen et al., 2017). Wills (1981) explained that people would feel better off if they compare with others deemed inferior. On the other hand, a person with high financial literacy tends to achieve financial well-being. It is because a financially illiterate person is vulnerable to any emergency or financial shock such as losing a job or suffering from critical illness as the person is unlikely to manage his personal finance well. Researches show that financial literacy is highly correlated with financial knowledge (Riitsalu & Murakas, 2019; Yong et al., 2018).

In Malaysia, the government actively promotes the idea of well-being to the citizens. For example, Economic Planning Unit (2013) applies the Malaysia Quality of Life Index (MQoLI) and Malaysian Well-being Index (MWI) to measure the level of Malaysians' overall well-being. Moreover, the Credit Counselling and Debt Management Agency (AKPK) set up by the Bank Negara Malaysia

endeavours to advocate financial wellness and positive financial behaviour among Malaysians to enhance the households' financial well-being (AKPK, 2018).

Nonetheless, Malaysian's financial well-being has not reached a satisfactory level which could be seen from the increasing household debt to GDP ratio and the number of bankruptcy cases (CEIC, 2020; Malaysian Department of Insolvency, 2020). The household debt to GDP ratio in Malaysia has increased from 60.4% in 2008 to 82.7% in 2019 (CEIC, 2020). Meanwhile, the number of bankruptcies in Malaysia has increased continuously, and the total number of bankruptcies has reached 299,186 cases as of December 2019 (Malaysian Department of Insolvency, 2020). Out of the total bankruptcy cases, the age group of 25-to-34 years old and 45-to-64 years old has accounted for one-quarter, respectively (Carvalho et al., 2019).

The high level of household debt and bankruptcy cases also signal poor financial management among Malaysians in their daily life. In Malaysia, one-third of Malaysians perceive low financial knowledge, especially those from low-income households (Financial Education Network, 2019). A report of Financial Education Network (2019) revealed that approximately 30% of Malaysians faced difficulties following their spending behaviours based on their budget. Meanwhile, 20% of working adults do not have savings in the past six months, and 30% of them need borrowings to purchase the necessities. Besides that, 52% of Malaysians feel it is challenging to raise RM1,000 when they face an emergency. Furthermore, for retirement planning, 68% of the EPF members do not meet the basic savings recommended based on their age ranges.

Poor financial planning and management deteriorate financial well-being (Gerrans et al., 2014; Joo & Grable, 2004). The individual and household financial vulnerability lead to financial distress, and this situation is worsened when there are economic hardships, such as financial crisis and pandemic Covid-19 (Georgarakos et al., 2010). These hardships further pressured the household's financial conditions, especially the low-income groups, because they struggled to meet their basic needs and could not weather the financial difficulties. (Taylor et al., 2012).

Based on the above discussion, financial well-being is essential because it affects the livelihood of individuals and households and affects the stability and sustainability of society and country. Mahdzan et al. (2020) discovered that subjective financial well-being provides a more precise and direct depiction of a person's financial well-being than objective financial well-being. Therefore, in this study, the financial well-being of working adults in Malaysia is examined from the psychological perceptions, i.e. subjective financial well-being. In recognising the importance of financial confidence that is derived from financial knowledge, subjective financial knowledge is included as one of the explanatory variables in this study. Furthermore, psychological-related elements such as emotional coping and social comparison are also examined to know their effects on an individual's subjective financial well-being.

LITERATURE REVIEW

Subjective Financial Well-Being

Financial well-being is one of the sub-domains of personal well-being and its definition varies among researchers (Brüggen et al., 2017). Strumpel (1977) described financial well-being as the happiness or general satisfaction with an individual's financial situations, enveloping a person's fulfillment with wage and investment funds, a sense of material security, perceptions of opportunities available, and a sense of rationality of the reward distribution system. Other researchers defined it as the state of a financially sound person, satisfied as well as worry-free from financial situations (Joo, et al., 2008; Sabri & Falahati, 2012).

The domain of financial well-being is branched into objective financial well-being and subjective financial well-being (Mahdzan et al., 2019; Mahdzan et al., 2020). Objective financial well-being examines the level of satisfaction by using measurable information such as the savings level, debt level, borrowing-to-income ratio, etc. Meanwhile, subjective financial well-being studies the level of satisfaction based on the "invisible" attribute, for example, an individual's satisfaction with the personal financial situation and perceived financial wellness.

The common parameters used in the study of subjective financial well-being include socioeconomic and demographic factors (Hira & Mugenda, 1999), money attitude (Chikezie & Sabri, 2017; Sabri et al., 2020), financial practices (Kim et al., 2003; Sabri et al., 2020), perceived financial self-efficacy (Netemeyer et al., 2018; Sabri et al., 2020) and emotion coping (Sabri et al., 2020). Nonetheless, the topic of financial well-being needs more exploration as it still has many unknowns (Brüggen et al., 2017).

Emotional Coping

Coping refers to the self-engaged efforts to reduce the negative impacts arising from an event or stressful situation (Carroll, 2013). Coping strategies can be broadly classified into two types: problem-focused coping and emotion-focused coping (Lazarus & Folkman, 1984). Problem-focused coping aims to minimise the adverse impacts by removing the source of the stress, while emotion-focused coping aims to manage the negative emotions arising from the stressful events rather than changing the event itself. In the context of financial well-being, Barnard et al. (2010) found that a stronger sense of coherence positively relates to employees' financial well-being. More recently, Sabri et al. (2020) documented a significantly negative effect of emotional coping on the financial well-being of Malaysian public sector workers, implying that emotion-focused coping worsens the overall financial well-being rather than improving it. Therefore, based on the previous discussion, the following hypothesis is proposed:

H1: Emotional Coping is significantly related to the subjective financial well-being of working adults in Malaysia.

Social Comparison

Social comparison refers to the action where ones are attempting self-evaluation or self-enhancement by comparing themselves to other individuals within a social group (Thornton & Arrowood, 1966; Wills, 1981). The seminal study of Wills (1981) suggested that one can increase their self-regard by looking into another individual deemed inferior or worse-off than themselves (downward comparison). Similarly, an upward comparison can cause people to lower their self-regard when comparing themselves to someone they deem better-off (Tesser et al., 1988). The existing studies of social comparison and financial well-being are relatively scant than those of other domains such as economics. Within the limited number of evidence, Thomas and Azmitia (2014) found that undergraduates tend to feel worse-off financially when comparing themselves with peers. More recently, Sorgente and Lanz (2019) revealed that older emerging adults (aged 25 to 29) tend to believe that they are financially better off when compared to the younger emerging adults (aged 18 to 24). In line with the above discussion, the following hypothesis is postulated:

H2: Social Comparison is significantly related to the subjective financial well-being of working adults in Malaysia.

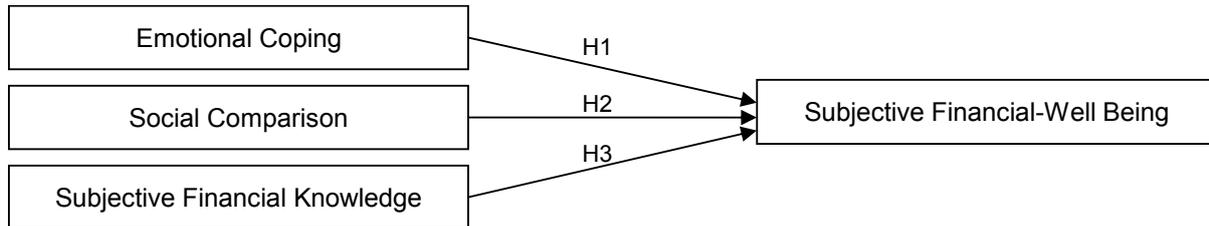
Subjective Financial Knowledge

Subjective financial knowledge can be defined as a person's confidence in his knowledge of financial issues (Lind et al., 2020; Rosen & Sade, 2019). Previous studies found that subjective financial knowledge has a stronger relation with financial well-being than objective financial knowledge (Allgood & Walstad, 2016; Lind et al., 2020; Riitsalu & Murakas, 2019). Allgood and Walstad (2016) found that a score that measures both subjective and actual knowledge correlates better with the behaviour than what separate estimates do, but the majority of the financial education programs tend to concentrate on promoting objective knowledge alone. Moreover, Riitsalu and Murakas (2019) discovered that subjective financial knowledge is more important than objective financial knowledge in contributing to an individual's financial well-being. They even advocated the government focusing on the financial education programme that could increase citizens' confidence in enhancing their financial conditions to improve their financial well-being. Based on the above discussion, the following hypothesis is elicited:

H3: Subjective financial knowledge is significantly related to the subjective financial well-being of working adults in Malaysia.

CONCEPTUAL FRAMEWORK

Figure 1: Proposed Conceptual Framework



RESEARCH METHODOLOGY

In this study, the quantitative research approved is applied to understand the impacts of personal factors on Malaysian working adults' subjective financial well-being. Judgmental sampling was employed, in which Malaysian working adults aged 18-60 were approached in this study. The questionnaire is distributed to the targeted respondents electronically, i.e. Google Form, due to the imposition of Movement Control Order in responding to the Covid-19 pandemic. According to Heckler (1996), the sample size should be larger of five times the number of variables, or 100. Gorsuch (1983) and Kline (1979, p. 40) recommended the sample size of at least 100 (MacCallum et al., 1999). a sample size between 100 and 200 is sufficient in carrying out the path modeling. Hair et al. (2010) revealed that selecting a proper sample size relies on the model complexity and basic measurement model characteristics. The minimum sample size for five or fewer latent constructs is 100. As illustrated in the conceptual framework, there are three causal variables in this study. Hence, a total of 100 responses were collected for this study.

The collected data were analysed using the Partial Least Square Structural Equation Modelling (PLS-SEM). PLS-SEM is particularly relevant in explaining complex cause-effect relationship models between dependent and independent variables. Both measurement model assessment and structural model assessment are carried out to estimate the amount of explained variance in latent variables.

DATA ANALYSIS

The measurement model assessment starts with checking outer loadings to examine the significance of the item in representing the construct. The items with outer loadings value of less than 0.7 should be removed, yet Hulland (1999) mentioned that the value between 0.40 and 0.70 is acceptable. Hence, the items with the outer loadings value of 0.40 and above are retained in the model. The results in Table 2 show that all items achieve an outer loadings value of more than 0.40 except EC5, EC6, EC7, EC8, SC1, SC6 and SWB7. These variables have been excluded for the further analysis.

The reliability of the model is examined by the composite reliability, which calculates the ratio of total true score variance to total scale score variance (Netemeyer, 2003). As shown in Table 1, all constructs have fulfilled the requirement of composite reliability, which has the threshold condition of 0.80 (Hair et al., 2012).

Table 1: Composite reliability and average variance extracted

	Composite reliability	Average Variance Extracted
Emotional Coping (EC)	0.842	0.572
Social Comparison (SC)	0.842	0.476
Subjective Financial Knowledge (SFK)	0.953	0.720
Subjective Financial Well-Being (SFWB)	0.894	0.548

In terms of validity, the convergent validity and discriminant validity of the model are assessed through their respective measurements. Three constructs, emotional coping, subjective financial

knowledge, and subjective financial well-being, have recorded an average variance extracted of more than 0.50 except social comparison, which scored only 0.476, as shown in Table 1. It shows that the social comparison does not demonstrate the convergent validity.

Table 2: Outer Loadings and Cross Loadings

Items	Outer Loadings	Cross Loadings			
		EC	SC	SFK	SFWB
EC1	0.787	-	-0.031	0.178	0.211
EC2	0.700	-	-0.047	0.142	0.196
EC3	0.829	-	0.082	0.246	0.354
EC4	0.702	-	-0.034	0.067	0.162
SC2	0.652	0.039	-	0.118	0.089
SC3	0.644	-0.090	-	0.076	0.070
SC4	0.812	0.021	-	0.126	0.140
SC5	0.738	0.004	-	0.135	0.092
SC7	0.767	0.003	-	0.142	0.144
SC8	0.477	-0.030	-	-0.005	-0.093
SFK 1	0.562	0.214	0.069	-	0.368
SFK2	0.89	0.278	0.155	-	0.442
SFK3	0.899	0.188	0.129	-	0.437
SFK4	0.908	0.234	0.082	-	0.468
SFK5	0.909	0.280	0.140	-	0.547
SFK6	0.830	0.070	0.317	-	0.365
SFK7	0.864	0.111	0.225	-	0.411
SFK8	0.872	0.144	0.204	-	0.457
SWB1	0.766	0.209	0.088	0.324	-
SFWB2	0.739	0.157	0.181	0.420	-
SFWB3	0.749	0.294	0.266	0.305	-
SFWB4	0.798	0.220	0.289	0.408	-
SFWB5	0.74	0.130	0.226	0.432	-
SFWB6	0.811	0.302	-0.035	0.457	-
SFWB8	0.552	0.379	0.000	0.330	-

Table 3: Discriminant validity - Fornell and Locker Criterion

	Emotional Coping	Social Comparison	Subjective Financial Knowledge	Subjective Financial Well-Being
Emotional Coping	0.757			
Social Comparison	0.011	0.69		
Subjective Financial Knowledge	0.23	0.191	0.849	
Subjective Financial Well-Being	0.33	0.201	0.522	0.741

Table 4: Discriminant validity - Heterotrait-Monotrait Ratio

	Emotional Coping	Social Comparison	Subjective Financial Knowledge
Social Comparison	0.12		
Subjective Financial Knowledge	0.251	0.181	
Subjective Financial Well-Being	0.382	0.255	0.573

For the discriminant validity, the cross loadings of each construct show a larger value than other constructs, as shown in Table 2. In addition, the Fornell and Locker Criterion fulfils its requirement and the Heterotrait-Monotrait ratios of all constructs are below 0.90. These results have justified the discriminant validity.

Structural Model Assessment

The structural model assessment starts with the checking on collinearity. As shown in Table 5, all constructs have not diagnosed the multicollinearity problem because their inner VIF values are less than 3. Then, the path coefficients are developed via the bootstrapping procedure with 1000 subsamples. As shown in Table 6, the path coefficients of subjective financial knowledge and emotional coping are significant at the level of 0% and 5%, respectively. However, social comparison is found to be insignificant because its p-value has exceeded 0.10. The subjective financial well-being is affected by emotional coping (0.225) and subjective financial well-being (0.45).

Table 5: Collinearity

	Inner VIF
EC	1.057
SC	1.039
SFK	1.097

Table 6: Significance on Path Coefficient

Hypothesis	Path	Path Coefficient	T statistic	P-value
H1	EC → SFWB	0.225	2.396	0.017
H2	SC → SFWB	0.111	0.667	0.505
H3	SFK → SFWB	0.450	4.857	0.000

Predictive Relevance and Effect Size

The result of R-square shows that the latent variables can explain 33.2% of the variation of subjective financial well-being. In addition, the cross-validated redundancy (q-square) value is 0.163, i.e. greater than zero, indicating that the model confirms the predictive relevance (Hair et al.,2017).

On the other hand, subjective financial knowledge is found to have a moderate effect on subjective financial well-being because the f-square is between 0.15 to 0.34 (Cohen, 1988). Meanwhile, emotional coping is found to have a small effect on subjective financial well-being as its f-square was recorded at 0.071. Finally, similar to the result on path coefficient, social comparison is found to have no effect on subjective financial well-being because the f-square is less than 0.02 (Cohen, 1988).

Table 7: Predictive Relevance and Effect Size

Endogenous variables	R - square	Q-square	Exogenous variables	F – square Effect Size
SFWB	0.332	0.163	EC	0.071
			SC	0.018
			SFK	0.276

DISCUSSION AND CONCLUSION

The results revealed that both emotional coping and subjective financial knowledge have a significant relationship with subjective financial well-being. A person with good emotional coping can manage his negative emotions from those stressful financial events or sudden financial shocks. Thus, the person can adjust to the satisfactory level of financial conditions faster even if harmful incidents happened. A similar result has been found by Barnard et al. (2010) and Netemeyer et al. (2018). On the other hand, an individual with strong subjective financial knowledge indicates a higher level of financial confidence. As a result, the individual feels calm about the financial decisions that he has made, and this confidence drives him to have a higher level of satisfaction in his financial conditions (Riitsalu & Murakas, 2019).

Nonetheless, social comparison is found to have no significant relationship with subjective financial well-being. The result contradicts the past research as the past researchers proposed that people satisfaction level is higher when they compare themselves with someone worse off (Sorgente & Lanz, 2019; Wills, 1981). The upward social comparison has a negative relationship with subjective

financial well-being because the frequent comparison with someone better off brings negative emotions such as envy, unhappiness and dissatisfaction, and negative thinking about their financial conditions (Chatterjee et al., 2019). One possible reason that social comparison has no significant relationship with subjective financial well-being is that someone treats social comparison as a benchmark and motivation of improvement (Heru & Haryokusumo, 2018; Lee et al., 2019), which in turn improves their self-efficacy. This positive force in self-efficacy might contra the negative impact of upward social comparison brings to the subjective financial well-being as discovered in the past researches and causes a possibility to make two variables have no relationship or even positive relationship. Nonetheless, this explanation remained a puzzle to be explored in the body of knowledge of subjective financial well-being.

In a nutshell, the results of emotional coping and subjective financial knowledge are consistent with the expectation, i.e. having a significant relationship with the subjective financial well-being. Surprisingly, the impact of social comparison is contradicted with the expected outcome.

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BAFE048:
**AUDIT COMMITTEE CHARACTERISTICS AND AUDIT REPORT LAG
AMONG MALAYSIAN PUBLIC LISTED COMPANIES**

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Abstract

The unprecedented Covid-19 situation has affected auditors in completing the audit on a timely manner. Timeliness of accounting statements is a vital part of its value as users' evaluation of its impact on their decision making is dependent on how fast it is received. The audit committee's roles and responsibilities have over the years been reported as vital in the sustenance of the current market economy. Therefore, audit committee training would serve as a perfect gauge for companies as appropriate source of knowledge and practical sessions, which may bring positive impact in enhancing their knowledge up to date. Moreover, MCCG (2021) required all AC members to be well-versed with the applicable changes in the standard, practices and regulations pertaining to accounting and auditing, through their continuous professional development. Thus, training for AC members, especially related to accounting and auditing, is critical for protecting investors, the health of the capital markets, and to ensure the audit committee's quality. However, there is lack of studies on Audit committee training and audit report lag in Malaysia. The goal of this paper is to discuss on the relationship between Audit committee characteristics such as (independency, meeting, training, size and financial expertise with Audit Report lag. This study will offer some useful insights for all stakeholders, including policymakers, regulators, academics, the board of directors and audit committee to ascertain that the code of corporate governance is properly governed according to Bursa Malaysia requirements.

Keywords: Audit Report Lag, Audit committee training, Audit committee independence, Audit committee size, Audit Committee meeting, Audit Committee financial expertise

BAFE051:
CORPORATE GOVERNANCE AND IPO UNDERPRICING:
EVIDENCE FROM 5-SOUTHEAST ASIAN MARKET

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Abstract

Southeast Asian market is the highest growth economies in the last two decades. The countries in the region portray divergence in the capital market and corporate governance while competing to attract capital investment domestically and internationally. Whether IPOs underpriced is an interesting issue in this region. This study examines 514 Initial Public Offerings (IPOs) in Indonesia, Thailand, Malaysia, Singapore and the Philippines from 2015 to 2019. The study first compares the one-day IPO window where the sample countries recorded an average underpricing of 23.7%. The study uses a cross-sectional study to examine signaling and agency theory on IPO abnormal return from offering price. The model examines ownership concentration and board characteristics-board independence, board size, and woman on board, issues during the first year of initial IPO returns. The study confirms underpricing in Indonesia, Singapore, and Malaysia, but not in Thailand and the Philippines. Largest shareholder discounts short run abnormal return after shareholding goes beyond 62.2% only. Board size is negatively significant in relation to IPO returns, while board independence enhances the abnormal return in the IPO one year performance. The findings confirm heterogenous in corporate governance in Southeast Asia market affect the IPO returns.

Keywords: Corporate Governance, Ownership Structure, Initial Public offerings, Board Characteristics

INTRODUCTION

The topic of IPO underpricing is one of the most pervasive and complicated in the financial sector. In more than 50 nations, several studies and publications have revealed evidence of underpricing. Issuers in the financial sector confront the difficulty of determining the appropriate offer price for an initial public offering (IPO) (IPO). One perplexing feature is that IPOs are frequently underpriced, meaning that their first day closing market price is greater than the offer price by 10% to 24%. The IPO proceeds would have been greater by an amount equivalent to the IPO underpricing if the shares had been sold at the first day closing price, or the same amount could have been raised by selling fewer shares (Loughran and Ritter, 2002). This conundrum arises from the difficulty of determining a young company's basic worth. In an inefficient market characterized by investor heterogeneity and short sales limitations, the first-day closing market price is typically considered to reflect the intrinsic worth of the shares, although this may not be the case (Miller, 1977; Daniel Hirshleifer and Subrahmanyam, 1998; Ritter and Welch, 2002; Derrien, 2005).

Even if the origins of underpricing can be traced back to the latter decades of the twentieth century, market players are nevertheless fascinated by the huge transfer of wealth from a business presenting an offer to purchasing investors that occurs as a result of IPOs. Because of the economic importance of first-day returns, financial researchers have attempted and continue to attempt to identify the key drivers of underpricing and determine whether issuer firms can influence the degree of underpricing by leveraging specific variables—both internal and external to the company.

An IPO is an important transition point in the development of a company as the company moves from being held privately to being a public firm (Certo, Daily, & Dalton, 2001). An entrepreneurial company sells a portion of its stock to the public or prospective investors in an initial

public offering (IPO) to meet its funding needs. However, there are many uncertainties for the IPO process. Such issues are addressed in a wide variety of recent literature. In the past decade, most legislation has been introduced to mitigate conflicts and reduce the expense of going public (Jenkinson, Jones, & Suntheim, 2018). There remain doubts in academic and regulatory circles about how effectively the public equity market works for companies, especially young entrepreneurs (Doidge, Karolyi, & Stulz, 2017). Moreover, different corporate governance quality and ownership structure will affect IPO return (Boulton, Smart and Zutter, 2010; Fan, Wong and Zhang, 2007).

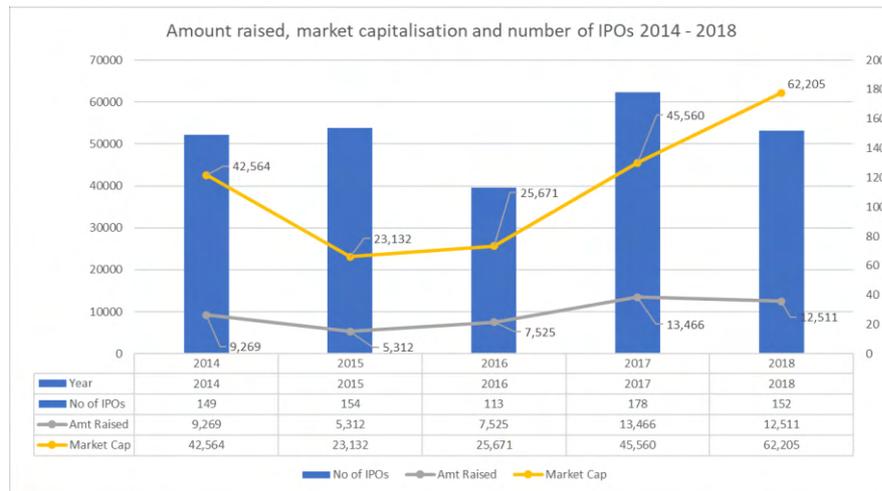
Early authors, in particular Logue (1973) and Ljungqvist (2003), reported that the stocks firms sell seemed underpriced once businesses went public, with the share price increases dramatically on the first day of trading. Thus, in an efficient market, the market price will reflect firm value in the secondary-market stock returns during the initial trading day, reflect whether IPO firms deliberately offer the price below the fair value, which lead to underpricing, which reduces the capital raised by IPOs business through the IPOs process (Purnanandam, 2004).

Nonetheless, an underpricing may not be undervalued. The underpricing could be a strategy that issuers plan to attract subscriptions, while some argue that it is a signal of the quality (Carbone et al., in press). Rock (1986) assumes some investors are better informed than others and thus can avoid participating in overvalued IPOs. Welch (1989) argues in the groundbreaking paper that the issuer is better informed about its true value, leading to an equilibrium in which higher-priced firms use it as a trigger for underpricing. In this perspective, underpricing is an incurred price that insiders pay to maintain control which benefits investors (Boulton, Smart and Zutter, 2010). The phenomenon is prevalent in family control firms leading to greater IPOs underpricing, which can be mitigated via effective corporate governance mechanisms such as board monitoring and the presence of institutional investors (Carbone et al., in press).

Literature has well established that investors are pricing higher in market with fewer chances of expropriating minority shareholders (La Porta, Lopez-de-Silanes and Shleifer, 1999; 2006). Pertaining to this, Bebchuk, Cohen and Ferrell (2008) underline the relevant corporate governance provisions and firm valuation and large negative abnormal returns. There is an acceptance that agency theory is the most prevalent theoretical lens used in corporate governance research (Bebchuk, Cohen, & Ferrell, 2009; Claessens & Fan, 2003; Clarke, 2007; Mallin, 2013; Monks & Minow, 2004; Psaros, 2009; Solomon, 2007; Tricker, 2012). Following this argument, corporate governance issues and concerns emerge because of the misalignment relationship that exists between the principal and the agent. The principals are shareholders (owners) whilst the agents are management. The theory argues that the agents have their personal goals that are not aligned with those of the principals, so they do not always act to advance the interests of the principals.

IPOs underpricing is more severe in countries that are weak in corporate governance. For instance, China reported 256.9% during 1999 to 2000, whereas the US recorded 18.4% (Ritter, 2003; Azevedo, Guney and Leng, 2018). Investors in the IPO market face a higher risk as agency costs are higher in IPOs firms that are newly listed than an existing publicly listed firm, wherein the IPO's investors rely on the prospectus for the investment. Two internal mechanisms could affect agency costs in firms. First, firms with an ownership structure where the initial founder owns a significant portion of interest, may entrench outside shareholders (see Claessens and Fan, 2002). Secondly, board effectiveness is subjected to the quality of legal institutions across countries.

Southeast Asia market provides a good platform to examine IPO's underpricing from the perspective of ownership structure and corporate governance. Generally, highly concentrated family firms and the government manage corporations in the region with a relatively wide range of corporate governance issues and political business linked capital markets (see Claessens and Fan 2002's survey). The IPO trend in 5 Southeast Asia markets illustrated the number of IPOs issued between 113 to 178 during 2014 – 2018 (see Figure 1.1). Amount raised from these Southeast Asian market IPOs steadily increasing from USD 9.26 billion to USD12.51 billion, albeit a slight drop in 2018, with performance. Market capitalization was notable at USD62 billion in 2018.



Source: Data compiled from 5 major stock exchanges webpages
Figure 1 Amount raised, market capitalization and numbers of IPOs 2014 – 2018 in ASEAN

Corporate governance codes have been argued as essential mechanisms that allow a shareholder to minimize managerial control and thus increase the transparency of the financial statements (Chen & Zhang, 2014). There is a divergence of corporate governance practices in Southeast Asian market. Indonesia remains the lowest in corporate governance total score among five selected Southeast Asia markets, while Thailand has scored higher than Malaysia, and Singapore ranked third from 2016 to 2019 (ASEAN Capital Market Forum Working Group, 2019). With the exception of Singapore and Malaysia which set a minimum of 1/3 number of independent directors, Indonesia 30%, Thailand and the Philippines require a minimum of three persons and two persons. Aligning with the recent call on board diversity, Malaysia and Thailand also recorded 13.90% and 12.70% of women participation on boards, while the percentage women on board in the Philippines and Singapore reported 10.90% and 9.90%, respectively (OECD, 2017). The pioneer survey from Claessens and Fan (2002) generally conclude that there is a lack of earnings transparency in Malaysia, Thailand even Singapore. Despite these heterogeneous, Indonesia seems to attract better portfolio investment in the recent years, after Singapore despite ranked behind Malaysia and Thailand in ASEAN corporate governance scorecard (ACMF, 2021)

The study hypothesizes that IPO underpricing across countries can be explained by firm-level ownership structure and corporate governance mechanisms. The study examines IPOs in Indonesia, Malaysia, Thailand, Vietnam, Singapore, and the Philippines from 2015 to 2019. Ownership concentration and board characteristics- board size, board independence and board gender diversity are used to study IPOs return in this market.

LITERATURE REVIEW

The issue of underpricing varies across countries. A study on 4462 IPOs across 29 countries recorded a mean of first-day return around 28%, with a standard deviation of 13.6% (Boulton, Smart and Zutter, 2010). Underpricing theories can be discussed in four different areas: asymmetric information, institutional reasons, considerations of control and approaches to behaviors (Bergström, Nilsson, & Wahlberg, 2006). The best established of these are models based on asymmetric information. The main parties to an IPO agreement are the issuing entity, the bank underwriting and selling the offer and the investors (Cornelli, Goldreich, & Ljungqvist, 2006). Asymmetric data models presume that one of these parties is more aware than the others. The underwriting bank is better informed about demand conditions than the issuer, leads to a problem principal-agent underpricing to induce optimal selling effort (Baron, 1982).

IPO underpricing arises due to the information asymmetry among investors (Rock, 1986). Benveniste and Spindt (1989) investigate the IPO marketing process pursued by investment banks and find that using the information gathered from investors underwriters can reduce the level of IPO underpricing. The authors argue that investors may have additional information about the issuing firm, its competitors or the market overall and thus, have better knowledge of the true IPO value

(Benveniste & Spindt, 1989). Investors tend to retain positive IPO- related information until the issue's trading starts, and hence, benefit from initially set lower offer price.

Baron (1982), on the contrary, analyses the behavior between the underwriter and the issuer and finds that the IPOs are more underpriced whenever the underwriter has superior information about the new issue, as the issuer needs to compensate for the use of such information. The offer prices are, as a result, set lower whenever the investment bank is more informed than the issuing firm. The underwriters usually find it less costly to price the new issue lower because this helps them reduce the risk of possibly insufficient demand for the IPO. To conclude, the IPO underpricing is caused and influenced by information.

Zingales (1995) and Mello and Parsons (1998) are the first to suggest dispersed ownership structure assists entrepreneurs in maximization firm value post-IPOs. Therefore, IPO will be underpricing so that the company's shares are owned by the dispersion of shareholders and thereby affect firm value. The argument is largely based on signaling theory that undervalues an IPO could convey the message of high financial quality and will quickly recoup losses later. Therefore, under signaling theory, there will be a positive relationship with IPO returns.

From the agency perspective, where there is a limitation for the corporate control market, such as emerging economies. The argument is contrary to signaling theory. The IPO is distinguished by lock-up agreements that make retained ownership illiquid after the IPO by original investors and consequently their retained concentrated ownership imposes a burden on those investors. A retained interest thus shows confidence in the company's value to minority shareholders (Brav & Gompers, 2015). Second, centralized ownership reduces the IPO company's management costs associated with multiple types of private and public equity investors. Third, in line with the claims suggested by Jensen and Meckling (1976), ownership concentration provides incentive convergence between the public market and early-stage investors who play multiple principal-agent positions by changing their priorities to shareholder objectives. Therefore, ownership concentration can be a particularly important governance factor that increases the performance of the IPO firm and decreases the "IPO discount" arising from the company conflicts. Similarly, they are also founder-entrepreneurs who will further protect their controlling interest, could raise the offering price, and there is a reduction in underpricing.

Therefore, the study proposes that when agency cost prevails in Southeast Asia countries: -

Hypothesis 1: Ownership concentration of company is negative related to IPO returns in 5-Southeast Asian countries.

One of the signals to the outside investor from informed issuers in the context of signaling theory is the ownership concentration. The signaling theory suggests that the issuing firms use the retention ratio as an indication of the quality of the offer. Although this has not been convincingly corroborated by empirical evidences, the explanation of the theory is quite interesting. A high concentration ratio would indicate a higher quality of firm as the owners are reluctant to release a high proportion of the future cash flows to the outside investors. Another explanation of the ownership structure and initial underpricing is suggested by Brennan and Franks (1997). They illustrate that initial owners underprice their IPOs to attract more applications for the primary shares. The resultant subscription means that the shares are rationed by the initial owners and they will discriminate between applicants so as to reduce the size of new shareholdings. The result of this procedure would be a few large founding shareholders and many small investors. In this aspect underpricing is used as a tool of corporate control. A third explanation of underpricing and ownership structure, which is mostly related to privatization process, offers a different perspective. The main argument is that companies controlled by a majority shareholder have a significantly smaller IPO premium because the market correctly understands the value of control rights, and this information will be reflected in the market price. The underpricing becomes even smaller if the control of a company is not expected to change hands and there is no market for corporate control. This is contrary to the prediction of signaling theory that IPO underpricing signals the quality of the firm, and that a higher retained fraction of ownership should be related to higher IPO returns. This has been empirically supported in the context on Chinese IPOs. Jian Chen and Roger Strange found out that in a sample of 467 listed companies the underpricing was negatively related to the proportion of shares held by largest shareholder. This is other words means that outside investors perceive the unobstructed ability of the

controlling shareholder to pursue private benefits at the expense of the others and therefore lead to lower IPO pricing.

An increased proportion of dispersed shareholder commonly follows IPOs. The changes in ownership structure may prompt existing owners to establish a board that is ideal for their best interest. Also connected to agency costs and signaling theory is the establishment of board independence in IPOs firms. Board independence has different definitions across different countries. The theory surrounding board independence is focused around reducing agency costs (Godfrey et al., 2006). Therefore, there is a need for internal monitoring, and board supervision is one of the more commonly used (Zahra & Pearce, 1989). Dalton and Dalton (2011) argue that the monitoring aspect of the board can be enhanced by having the board members be independent of the company to eliminate biases in decision making. The argument is also supported by Rashid (2014), who concludes that board independence can reduce agency costs. The additional level of control and monitoring provided by the independent board members would ultimately result in better performance and a higher degree of wealth being created for the shareholders (Dalton & Daily, 1999). The majority of board members should be independent of the company.

Suppose the directors have been CEO or had any other important roles at the company or its affiliates earlier. This involvement also includes taking part in the firms auditing process or even being part of another firm that another board member is involved. This also concerns close family members having large stakes in said firm. There could also be a level of board independence from large owners. This assessment is carried out by investigating the members' previous relations with owners, and any existing employment is treated as a dependency. Board independence from owners is seen as positive because the board member will act without any biases from large owners. Board independence from the company is positive as the board member will act in the interest of the shareholders. Board independence seems to have the same signaling value as board diversity. Board independence has been related to abnormal returns (Dalton and Daily, 1999). Having independent board members would subsequently act as a signal to create trust between the firm and the market. affect the underpricing of new listings and issues.

Although the respective code of corporate governance stipulates a minimum standard in respective Southeast Asian countries, the appointment of independent directors is affected by its founder's interest, the initiative of IPO firms on the appointment of independent directors could facilitate communication and information disclosure. The study suggests: -

Hypothesis 2: Independent directors is positively related to IPO returns in 5- Southeast Asian countries.

Board size is another value-relevant dimension of board operations, but its effect on firm performance remains inconclusive in the literature. Numerous researchers have discussed the optimal board size from a range of perspectives. Looking at the monitoring function of a board, Zahra and Pearce (1989) suggest that since it is more difficult for the CEO to dominate large boards, they are more likely to exercise control and monitoring actions. Additionally, a larger board is more likely to comprise directors with a wide range of expertise, leading to more effective oversight (Beasley, 1996; Karamanou and Vafeas, 2005) and access to critical resources (Certo et al., 2001). Additionally, Zahra and Pearce (1989) and Pearce II and Zahra (1992) suggest that large boards typically comprise directors with different backgrounds, education, professional skills and experience who therefore are more likely to secure critical resources (Goodstein et al., 1994).

IPO reflect the transition of firms into higher liquidity event which face agency conflicts from various principals. A new IPO firm may have more difficulties engaging non-executive members. A board of directors could assume an IPO firm to run effectively by providing governance roles, which complement founder-entrepreneurship at the corporate level. As a result, it requires a great team with diverse backgrounds to provide sufficient experience, contributing to more informed decision-making. In support of this view, the board's large size is believed to be one of the main determinants in deciding on the efficiency of organizational procedures, including a company's information disclosure behavior. Several studies have reported that board size substantially affects the degree of corporate disclosure (Mandzila & Zeghal, 2016).

Although there are some negative arguments on large boards owing to the free-riders, and lack of cohesiveness in large boards (Jensen, 1993), Akhtaruddin and Rouf (2012) indicated that board size has a positive correlation with management's decision to reveal or not disclose information, suggesting that organizations with a bigger board size are typically more willing to disclose corporate details to shareholders than others.

Hypothesis 3: Board size is positively related to IPO returns in 5- Southeast Asian countries.

Women on boards (WOB) mainly focus on two directions: the resource dependency and agency theory. The resource dependency theory stresses that diverse resources are crucial and linked to the firm's performance (Johnson et al., 1996). The advocate of WOB suggests that women's contribution through the board will further maximize corporate performance. The agency theory suggests that a diverse board will minimize the costs of mitigating agency problems which arise from separation of ownership and control (Watson et al., 1993). WOB has been widely discussed, especially in the Western countries (1988; Bilimoria and Piderit, 1994; Daily et al., 1999; Carter et al., 2003). The theory further shows how the presented theories connect to the effect of women on boards. Subsequently, this theory further implicates that there should be a relationship between women on the board and underpricing.

Some IPO firms are eager to pursue underpricing strategy to maximize capital gains. They are actively trying to bridge the information gap between investors and themselves. WOB could be the channel of communication and signaling to the market through the diversity of board composition. Having diversity in the board of directors would imply that the firm is less susceptible to groupthink (Hambrick and Mason, 1984). Effectively having women on the board firms would be able to increase operational performance (Johnson et. al, 1996) and increase economic gains due to enhanced strategic capabilities (Adams and Ferreira, 2009). It is thus in the interest of the firm to present themselves in the best way possible. Besides the positive outcomes of diversity such as avoiding groupthink, it is also an effective way of signaling. In a recent study, Rau, Sandvik and Vermaelen (20210 conclude that information from gender-diverse board is not fully reflected in IPOs firms' offer prices. The effect of WOB and IPO's pricing is relatively new. The study suggests that:-

Hypothesis 4: Ratio of women directors is positively related to IPO returns in 5- Southeast Asian countries.

CONCEPTUAL FRAMEWORK

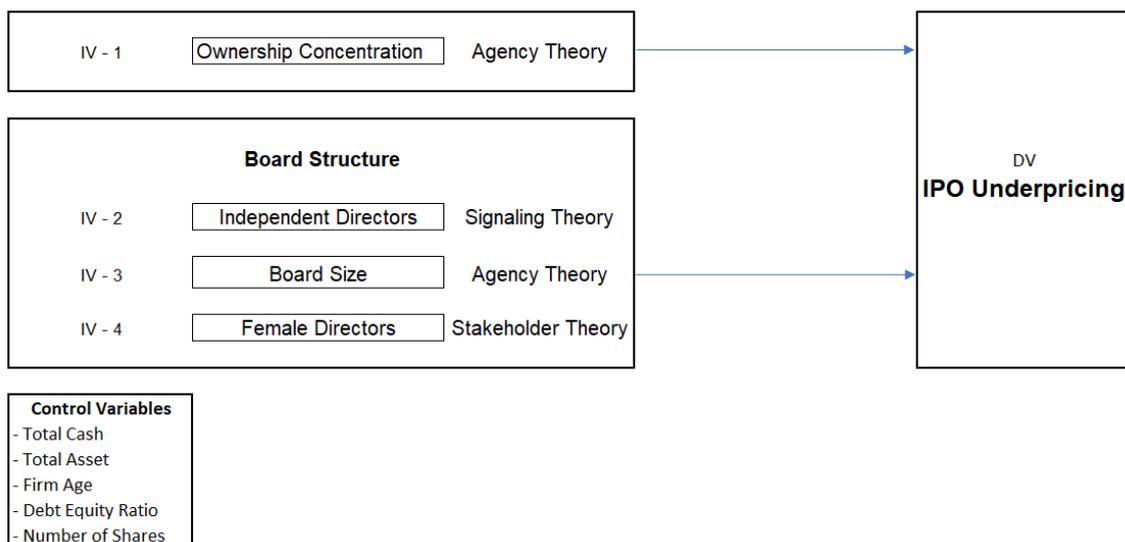


Figure 2 Conceptual Framework

One of the most puzzling phenomena in finance is the underpricing of unseasoned new issues of common stock. The pricing and valuation of new issue companies has received a lot of interest in the academic community. Many theories and models have been developed to explain the IPO underpricing phenomenon. The review has also considered empirical tests of a selection of the

hypotheses and models and the evidence in support of theory have been mixed. However, it is fair to say that no single hypothesis or model has received overwhelming empirical support to reject reasonable alternative explanations.

RESEARCH METHODOLOGY

The study screened through webpages from Indonesia stock exchange, Bursa Malaysia stock exchange, Singapore exchange, the Stock Exchange of Thailand and Philippines Stock Exchange. The study examined prospectus of IPOs firms published in respective webpages from 2015 to 2019. The 5 countries were selected as since they were the founding members of ASEAN in 1967 to facilitate trade and economic growth, as well as promote cultural development and social structures in the region. These 5 countries have also done much changes and development to their corporate governance framework from 2015 – 2019 to attract foreign investors to their respective capital markets. Table 1 summarizes the IPOs firms in the region.

Table 1 IPOs firms in Indonesia, Thailand, Malaysia, Singapore, Philippines

Year	Indonesia	Thailand	Malaysia	Singapore	Philippines
Total	182	164	86	91	17
Population 540					
2015	18	38	11	10	4
2016	15	27	15	16	4
2017	37	40	13	19	4
2018	57	21	21	14	1
2019	55	30	30	10	4
Sample Size	182	156	86	73	17
Total			514		

Since the aim of the present study is to measure the influence of various dimensions of the board of directors of IPO firms on underpricing, it is taken as a dependent variable which is considered after making the necessary adjustments for movements of the market between the issue close date and listing of IPO date (Chen & Yang, 2013). The resulting adjusted underpricing so obtained is referred to as the market-adjusted excess return.

To examine whether IPO underpricing happens in Southeast Asia countries, a simple paired t-test is used to examine the difference mean between IPO offering price and first day closing price, with the null hypothesis: $H_0: \mu_d = 0$, for the IPO. The test is also performed on each country IPO markets.

Adjusted IPO Short Run Performance

$$\begin{aligned}
 &= \alpha + \beta_1(\text{ownershipconcentration})_i + \beta_2(\text{independentdirector})_i \\
 &+ \beta_3(\text{womandirectors})_i + \beta_4(\text{boardsize})_i + \beta_5(\text{logcash})_i + \beta_6(\text{logtasset})_i \\
 &+ \beta_7(\text{firmage})_i + \beta_8(\text{leverage})_i + \beta_9(\text{num_shares})_i + \beta_{10}(\text{dummyindustry})_i \\
 &+ \beta_{11}(\text{dummycountry})_i + \beta_{12}(\text{dummyyear})_i
 \end{aligned}$$

The study adopts the standard method for calculating underpricing of new issues, the percentage of day one closing prices minus the IPO offering price. The IPO offering price was collected from prospectus published on respective stock exchange webpages. The share price after one day was collected via S & P Capital. The share prices are all converted into USD to facilitate calculation. The mean market-adjusted short run return is calculated as follows:

$$R_{x,d} = \frac{P_{x,d} - P_{x,0}}{P_{x,0}} \quad (1)$$

where,

$R_{x,d}$ is the return on stock 'x' at the end of the d th trading day.

$P_{x,d}$ is the price of stock 'x' at the end of the d th trading day

and $P_{x,0}$ is the offer price of stock 'x'.

The return on the stock market of the country of the IPOs is used as the benchmark and is calculated as:

$$R_{m,d} = \frac{I_{m,d} - I_{m,0}}{I_{m,0}} \quad (2)$$

where,

$R_{m,d}$ is the market return at the close of day 'd'.

$I_{m,d}$ is the market index value at the end of the d th trading day and $I_{m,0}$ is the market index value on the offer day of stock 'x'. For the one-year IPO returns, the return is calculated as IPO one year return minus one year market return:

$$\bar{R}_{x,d} = R_{x,d} - R_{m,d} \quad (3)$$

The independent variables in this study apply Ownership concentration - ownership concentration of the largest shareholder measured as ratio of shareholding over outstanding shares in firms. Boardsize - total numbers of directors. Independentdirector - proportion of outside directors on the board, who do not own any shares in the firms. Womandirector - Proportion of female directors on the board. Ratio of number of women on board over total board members. These variables are manually collected from respective IPO firms annual report. Other control variables are firm age, total assets, cash, return on assets, debt over equity ratio and these variables are collected from S & P Capital. Dummy country and dummy year for IPO issuance countries and year are also included in the regression.

DATA ANALYSIS

Table 2 provides the descriptive statistics of the sample used in this study. The data include the mean, median and the standard deviation of all the variables. The descriptive statistics reveal that average and median of underpricing (AR1) are at 27.09% and -18.18%, respectively. Underpricing recorded the highest at -556.25%, showing a huge difference of offering price and day 1 price returns during the issuance sample-year. One year return (AR2), measured as IPO returns minus market return is however, lower at -3.3%, and maximum return of 41.11% and underpricing decline to 23.89% after a year. In addition, the average and median ages at which a company issued an IPO are approximately twenty and eighteen years, respectively, when determined from the date of incorporation to the listing date. Across the sample of IPOs in the 5 ASEAN countries selected, shareholding averaged at 41.20% and its mean value is at 39.00%. This corresponds to the highly concentrated ownership of shareholders as a predominantly family owned before it takes the path of public listing in ASEAN.

Regarding board characteristics, the average and median size of the board is 7.29 and 7.00, respectively, with a maximum number of 15 members. In addition, on average, 37.30% of directors are independent directors. Mean value of independent directors is close at 38%. Maximum ratio in terms of board independence recorded 88%. The average percentage of female directors at the time of the IPO is 19.90% with a mean value of 18% while its maximum value is at 75%. The average return of asset is at 6.45% with a median value of 6.87%, while its maximum and minimum values are at 69.29% and -81.28% respectively. Debt equity ratio for the sample firms average at 53.60%, while its median value is at 20.80%.

Table 2 Descriptive Statistics

	Mean	Median	Maximum	Minimum	Std. Dev.
AR1 (%)	-23.89	-18.18	75.61	-556.25	54.13
AR2 (%)	-3.30	-70	41.11	-23.89	10.15
SHAREHOLDING	0.41	0.39	0.88	0.00	0.24
B_SIZE	7.29	7.00	15.00	3.00	2.27
B_INDEP	0.37	0.38	0.88	0.00	0.17
B_WOMAN	0.20	0.18	0.75	0.00	0.16
FIRM_AGE	20.23	17.00	129.00	1.00	16.11
LOG_TASSET	4.78	4.69	7.56	3.10	0.67
LOG_CASH	3.68	3.73	6.46	1.00	0.83
ROA	6.45	6.87	69.29	-81.28	11.59
DEBT_EQUITY	0.54	0.21	61.01	-80.83	5.61

AR1 is the IPO initial return, while AR2 is IPO abnormal return. SHAREHOLDING represents the ratio of ownership by the biggest shareholder. B_SIZE is total board members. B_INDEP is the percentage of independent directors sitting on the boards. B_WOMAN is the percentage of woman directors sitting on the boards. CG_INDEX represents the country level corporate governance index. CASH is the total cash, Firm_Age being years of founding of the firm and Debt_Equity is total debt to total equity.

Table 3 shows the Pearson correlation matrix of the variables in the sample. There is no evidence that there is a high correlation among the variables in the study. Generally, the correlation coefficient is less than 0.7. It shows that with only one exceptional observation, there are no correlations among different independent variables that are well above the level that indicate multicollinearity problems. Ln(total assets) and Ln(cash) have a correlation of 0.632 is due to the fact that the total assets in the firm also depends on the total cash in the firm. However, as the source for shares issued in IPO can come from two ways: sales of shares from existing shareholder and new issue of shares to IPO. Correlation matrix supports some of formulated hypothesis. Abnormal return has positive relationship with board independence and Corporate Governance Index.

Table 3 Correlation Matrix

	AR1	SHAREHOLDING	B_SIZE	B_INDEP	B_WOMAN	FIRM_AGE	LOG_TASSET	LOG_CASH	ROA	DEBT_EQUITY
AR1	1									
SHAREHOLDING	-0.134 (-2.693)*** 0.0074	1								
B_SIZE	-0.098 (-1.993)**	-0.0754 -1.501852	1							
B_INDEP	0.193651 (3.923)***	-0.0565 -1.125	0.0299 0.596	1						
B_WOMAN	-0.033 (-0.66)	-0.017 (-0.329)	0.120 (2.398)**	0.155 (3.122)***	1					
FIRM_AGE	-0.112 (-2.235)**	0.061 (1.207)	0.219 (4.458)***	-0.056 (-1.110)	0.079 (1.568)	1				
LOG_TASSET	-0.053 (-1.063)	0.183 (3.705)***	0.399 (8.658)***	0.058 (1.151)	-0.076 (-1.518)	0.117 (2.351)**	1			
LOG_CASH	0.089 (1.771)*	0.067 (1.331)	0.330 (6.951)***	0.233 (4.759)***	-0.038 (-0.761)	0.087 (1.746)*	0.632 (16.197)***	1		
ROA	-0.010 (-0.203)	0.085 (1.699)*	0.102 (2.0359)**	0.005 (0.091)	0.038 (0.748)	0.113 (2.260)**	0.089 (1.779)*	0.137 (2.751)***	1	
DEBT_EQUITY	0.035 (0.700)	-0.023 (-0.449)	-0.017 (-0.332)	-0.063 (-1.258)	0.059 (1.173)	-0.060 (-1.187)	-0.022 (-0.437)	-0.073 (-1.464)	0.147 (2.963)***	1

AR1 is IPO initial day one return. AR2 refers to IPO one-year abnormal returns. SHAREHOLDING represents the ratio of ownership by the biggest shareholder. B_SIZE is total board members. B_INDEP is the percentage of independent directors sitting on the boards. B_WOMAN is the percentage of woman directors sitting on the boards. CASH is the total cash, Firm_Age being years of founding of the firm and Debt_Equity is total debt to total equity.

AR1 is initial day one return, while AR2 is IPO after one-year abnormal returns. Table 3 shows that AR2 has a negative relationship with ownership concentration providing preliminary support for hypothesis 1. This result will be further tested in our regression analysis. Underpricing is positively and significantly correlated with board independence, implying that IPO firms with a higher proportion of independent directors a more likely to experience higher underpricing. As such, the direction is as predicted in Hypothesis 2. The correlation suggests that independent directors play an important role in mitigating information asymmetry between the issuer and potential new investors in an IPO. In addition, IPO underpricing is negatively correlated with the ratio of women directors sitting in the board of directors. This is contrary to Hypothesis 3. Board size is negatively correlated with the abnormal return. This is contrary to Hypothesis 4. Carter, Dark, and Singh (1998b) and Certo et al., (2001) find that board size and underpricing are inversely related. Firm size in total assets has a positive correlation with board size. This confirms the finding of Darmadi (2011) and suggests that larger firms need a greater number of board members to better deal with the complexity of their business operations. They may also have more financial resources to hire more people serving in their boardrooms. In addition, country level governance index is positively correlated with AR2 - abnormal return. This provides preliminary support for Hypothesis 6. Rani et al., 2013 found that corporate governance score has positive abnormal returns in the short-run.

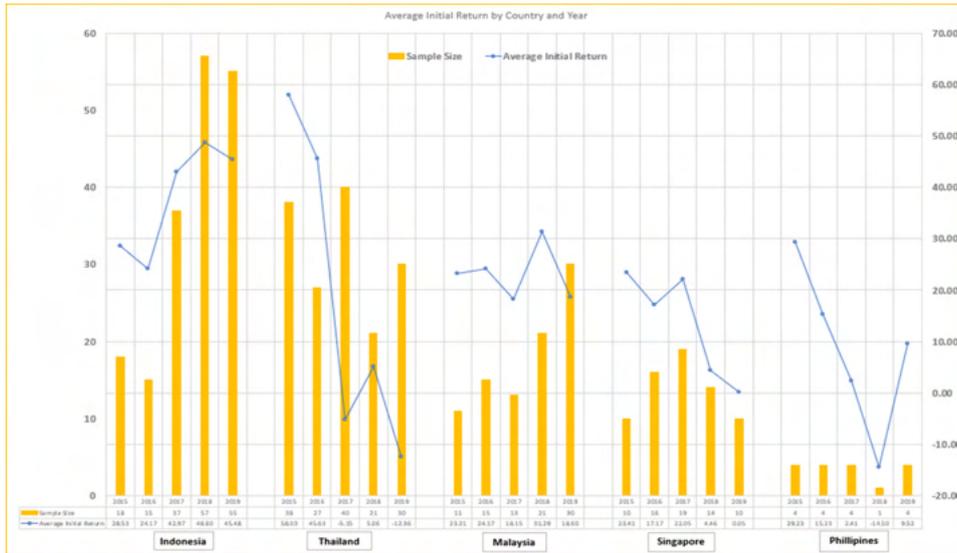


Figure 3 Average Initial Return by Country and Year

Figure 3 shows IPO average initial returns namely Indonesia, Thailand, Malaysia, Singapore and Philippines. On average, IPOs in Indonesia are consistently underpriced from 2015 – 2019 with the total sample size of 182 IPOs in the period. Thailand had a negative average initial return of -12.36% in 2019 when coinciding with its general election. Malaysia had consistent positive average initial returns for the 5 years with an average of 23.08% for the period. It also had an increasing trend in number of IPOs. Singapore has a declining trend for average initial returns from IPOs from 2015-2019. In the Philippines, IPO returns plunged in 2018 to -14.50 with the least listing. It could be due to political turmoil in the country where 2018 is a year of so much uneasiness and tension in Philippine politics.

Figure 4 presents the IPOs in these countries by industries. During the period, the real estate developers are the most sample in IPO markets in the region, showing fast economic development in the region. However, fast moving consumer goods in food products and general services, showing a high average initial returns. On the technology perspective it is registering the highest returns as investors are very upbeat as the sector is still promises much upside potential.

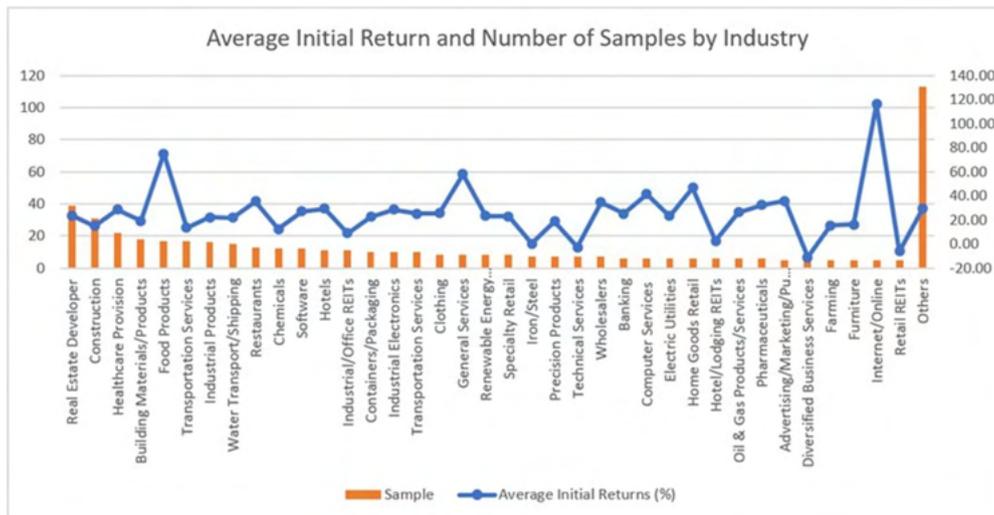


Figure 4 IPO average initial return by industry

From the mean figures of all the samples in Table 4, the difference between offer pricing of 239.74 and day one pricing of 296.50 showing a difference of underpricing which is at the mean value of -56.76, a 23.68%. We can see that the significance value is 0.114, which is below 0.05. and, therefore, there is a statistically significant. Indonesia, Malaysia and Singapore also recorded underpricing, and all had significance value of 0.000 which is below 0.05. However, underpricing in

Thailand and the Philippines had significance values of 0.134 and 0.102 respectively which are higher than 0.05 meaning it is statistically insignificant. By convention two-tailed tests are used to determine significance at the 5% level, meaning each side of the distribution is cut at 2.5%.

The study performs four different regressions. The results are presented in Table 5. The adjusted R-squared generated by Model II is almost twice as in Model I, when controlled variables are included in the study Model III includes dummy industry where real estate which has the largest number of IPO firms. The last column shows Model IV with the dummy year effects towards abnormal returns of IPO firms after one year of listing.

Table 4 Underpricing- Mean Differences of IPO in Southeast Asia Countries

		Mean	N	t	df	Sig. (2-tailed)
ALL	OFF	239.741	510			
IPO AR1	D1	296.498	510			
	OFF - D1	-56.76				
	%	-23.675		-5.714	509	0.000
Indonesia	OFF	664.341	182			
	D1	822.615	182			
	OFF - D1	-158.275				
	%	-23.824		-6.031	181	0.000
Thailand	OFF	7.206	156			
	D1	7.841	156			
	OFF - D1	-0.778				
	%	-10.793		-1.505	155	0.134
Malaysia	OFF	0.532	86			
	D1	0.605	86			
	OFF - D1	-0.073				
	%	-0.031		-6.181	85	0.000
Singapore	OFF	0.394	69			
	D1	0.430	69			
	OFF - D1	-0.037				
	%	-9.275		-3.715	68	0.000
The Philippines	OFF	10.759	17			
	D1	11.371	17			
	OFF - D1	-0.612				
	%	-5.686		-1.734	16	0.102

Providing support for Hypothesis 1, shareholding concentration is also seen consistently to be a significant negative coefficient in all models in Table 5. The finding is consistent with the hypothesis 1 that ownership concentration of company is negative related to IPO returns in 5-Southeast Asian countries. The finding is contrary to the prediction of signaling theory that IPO underpricing signals the quality of the firm, and that a higher retained fraction of ownership should be related to higher IPO returns. This has been empirically supported in the context on Chinese IPOs. Jian Chen and Roger Strange found out that in a sample of 467 listed companies the underpricing was negatively related to the proportion of shares held by largest shareholder. The finding implies that outside investors perceive the unobstructed ability of the controlling shareholder to pursue private benefits at the expense of the others and therefore lead to lower IPO pricing. Hence, the agency costs prevail in IPO firms where the large shareholder will increase the offer price so that reduce chances of a more disperse shareholdings, and their controlling stakes are not diluted.

Providing support for Hypothesis 2, board independence is proven to be a positive significant coefficient in all models with t-statistics greater than the critical value of 1.660. The findings are consistent even the dummy of industry representing real estate stocks and dummy IPO issuance years are included in the model 3 in Table 5. The proportion of independent commissioners is significant at the 6-8 percent level in the three models in Table 5. The finding suggests that independent directors in Southeast Asia IPO firms fail to exert governance roles in mitigating information asymmetry between the issuer and potential new investors.

Table 5 Regression Results Effects of Ownership Concentration and Corporate Governance

Dependent Variable: AR2	Model I	Model II	Model III
Variable	Coefficient	Coefficient	Coefficient
C	-0.0129 (-0.6556)	0.0363 (0.4934)	0.0674 (1.7151)
SHAREHOLDING	-0.0367* (-1.9736)	-0.0469* (-2.3053)	-0.0455*** (-4.2462)
B_SIZE	-0.0048* (-2.4446)	-0.0057* (-2.4292)	-0.0033** (-2.6744)
B_INDEP	0.0891*** (3.3643)	0.0910*** (2.8751)	-0.0033** (3.0201)
B_WOMAN	-0.0212 (-0.7588)	-0.0437 (-1.4956)	-0.0147 (-0.9652)
LOG_TASSET		-0.0134 (-1.3602)	-0.0141 (-2.6558)
LOG_CASH		0.0206 (2.6853)	0.0215 (5.3361)
FIRM_AGE		-0.0004 (-1.2234)	-0.0001 (-0.7258)
DEBT_EQUITY		0.0009 (1.0793)	0.0003 (0.6476)
LOG(NUM_SHARES)		-0.0022 (-0.5734)	-0.0008 (-0.3990)
DUMMY_INDUSTRY			0.0117 (1.7207)
DUMMY_2015			-0.1403*** (-17.4475)
DUMMY_2016			0.0645*** (7.7358)
DUMMY_2017			-0.1447*** (-19.9830)
DUMMY_2018			-0.1294*** (-17.9967)
Observations	539	539	539
R-squared	0.043	0.097	0.758
Adjusted R-squared	0.036	0.076	0.749
S.E. of regression	0.100	0.095	0.050
F-statistic	5.577	4.767	88.538
Prob(F-statistic)	0	0	0

The dependent variable is AR2 represents the abnormal return, the IPO one year returns minus market return. and SHAREHOLDING represents the ratio of ownership by the biggest shareholder. B_SIZE is total board members. B_INDEP is the percentage of independent directors sitting on the boards. B_WOMAN is the percentage of woman directors sitting on the boards. CASH is the total cash, Firm_Age being years of founding of the firm and Debt_Equity is total debt to total equity. Dummy_Industry=1 represents real estate stocks.

Due to the region relatively weaker corporate governance system, independent members in the boardrooms may be dominated by insiders or management (Demb and Neubauer, 1992), preventing them from being actively engaged in communicating information to potential investors. From the market's point of view, investors may perceive a higher proportion of independent commissioners as a signal of quality, representing good intention of an IPO firm to fulfill capital market requirements, as well as to protect the interests of minority shareholders by appointing outsiders to hold seats on the board. Within the signaling theory framework, this result also suggests that a high-quality IPO firm may choose greater board independence to signal its quality to potential investors.

Board size, also showed significant impact on the abnormal returns. Its coefficient value of negative against abnormal return is significant. This is inconsistent with hypothesis 3 that board size is positively related to IPO returns in 5-Southeast Asian countries. This could be due to the two-tier boards in Indonesia and Thailand that may not yield good performance despite having an extended board size. Investors may view board size that are too big and inefficient in the matter of making decision. Jensen (1993), Eisenberg, Sundgren and Wells (1998), and Mak and Kusnadi (2005) find that large boards are associated with lower firm value, suggesting that smaller boards are more cohesive, provide better monitoring, and cost less to coordinate.

Numbers of woman on board also has a coefficient which is insignificant. Even though it is consistent with hypothesis 4 that ratio of women directors is positively related to IPO returns in 5-Southeast Asian countries, it has an insignificant effect. In model 3, the regression models III and IV include the control variables, and dummy for the listing years. McGuinness (2018) posits that gender diversity thus serves as a positive, but only when female directors presence is untrammelled by family associations between directors. However, there is little evidence of a link between female board representation and IPO underpricing. In the case of Southeast Asia IPO, it reflects the same phenomena where women directors are connected with the founders.

Moreover, in Table 6, model 1. the study further investigates whether ownership concentration follows a non-linear relationship when explaining IPO return. The model demonstrates the effect of ownership concentration actually follow a non-linear relationship, with a positive coefficient at a lower controlling stake and with an inflection point (shareholding² where the coefficient becomes negatively correlated after 62.2% of shareholding concentrated. It is found that below 62.2% of shareholding by the biggest shareholder, ownership concentration is positively correlated with IPO returns as owners and shareholders share the same interest for the profit of company which is the convergence of interest between majority and minority shareholders. At the share concentration beyond 62.2%, there is a risk of managerial entrenchment or expropriation by managing as the risk for the controlling owner overwhelm the benefits to share with other shareholders I.

Firm owners in emerging economies are more likely to recruit themselves, family members, and other in-group members as senior executives, leading to convergence of interest between ownership and control convergence. When a company has many owners, though, they may have a lot of distrust for one another, especially when it comes to problems like arrangement of top managers. To address these disputes, a company must have just one or a few dominating owners, resulting in a concentration of ownership. However, when the ownership concentration and the convergence of interests between ownership and control in weak institutions for the protection of minority shareholder occur, principal-principal conflicts arise, and controlling shareholders and their affiliated top managers may tunnel and expropriate minority shareholders.

Table 7 presents the result of the heteroscedasticity- consistent standard error based in a White procedure (Huber-White-Hinkley (HC1)). The findings are consistent with the earlier findings, where the women on board are not significant. The coefficient sign for the shareholdings, and board independence are significant and shown the similar sign which in line with the hypotheses. The t-value in most variables in model 1, Table 4.9 also shows slightly higher value which indicates the standard error are lower, the coefficient divided by t-value implying standard error value. The R-square also shows a 39.7% explanatory power. In summary, the models applied in the study showing the consistent findings, as the standard error values do not show much different in the initial findings based on the ordinary least squares. The findings, based on White correction model further confirms that the regressions applied using ordinary least squares are reliable and unbiased.

In the model 2, the study applies robust least square to assess whether the earlier findings are sensitive to the presence of outlier observations that may affect the reliability of our findings. The findings are consistent with our baseline analysis in model 2, Table 5 for the main findings. The R square shows a 47.5% explanatory power, and the R² is a 87.9%. The findings are consistent which indicates that our findings are not affected by the outlier that may appear in this study.

Table 6 Regression Results on Non-linear Ownership Concentration

Dependent Variable: AR2 Variable	Model 1 Coefficient
C	-0.0351 (-0.4179)
SHAREHOLDING	0.1051* (1.7265)
SHAREHOLDING^2	-0.1336* (-1.9061)
B_SIZE	-0.0042* (-1.8827)
B_INDEP	-0.0157 (-0.4996)
B_WOMAN	-0.0357 (-1.4186)
LOG_TASSET	0.0054 (0.6002)
LOG_CASH	0.0018 (0.2595)
FIRM_AGE	0.0001 (0.2352)
DEBT_EQUITY	0.0007 (1.0282)
LOG(NUM_SHARES)	-0.0018 (-0.4410)
DUMMY_INDUSTRY	-0.0075 (-0.6885)
DUMMY_SPORE	0.0519 (1.7377)
DUMMY_MSIA	0.0869 (3.2282)
DUMMY_THAI	0.0245 (0.9456)
DUMMY_INDON	-0.0266 (-1.0936)
DUMMY_2018	-0.0362 (-3.4472)
DUMMY_2019	0.0848 (8.6935)
Observations	539
R-squared	0.397
Adjusted R-squared	0.371
S.E. of regression	0.078
F-statistic	15.224
Prob(F-statistic)	0

The dependent variable is AR2 represents the abnormal return, the IPO one year returns minus market return. and SHAREHOLDING represents the ratio of ownership by the biggest shareholder. B_SIZE is total board members. B_INDEP is the percentage of independent directors sitting on the boards. B_WOMAN is the percentage of woman directors sitting on the boards. CASH is the total cash, Firm_Age being years of founding of the firm and Debt_Equity is total debt to total equity. Dummy_Industry=1 represents real estate stocks.

Table 7 Robustness Test- Alternative Estimates

	White heteroskedasticity	Robust Least Square
C	-0.0351 (-0.3000)	0.0331 (0.8807)
SHAREHOLDING	0.1051* (1.8234)	0.0899** (3.2996)
SHAREHOLDING^2	-0.1336* (-1.8913)	-0.0987** (-3.1473)
B_SIZE	-0.0042* (-1.9033)	-0.0020** (-1.9895)
B_INDEP	-0.0157 (-0.5489)	-0.0126 (-0.8994)
B_WOMAN	-0.0357 (-1.5485)	-0.0075 (-0.6645)
LOG_TASSET	0.0054 (0.5019)	0.0002 (0.0540)
LOG_CASH	0.0018 (0.2844)	-0.0001 (-0.0440)
FIRM_AGE	0.0001 (0.2030)	0.0001 (0.6982)
DEBT_EQUITY	0.0007 (0.9971)	-0.0001 (-0.4008)
LOG(NUM_SHARES)	-0.0018 (-0.3015)	-0.0006 (-0.3279)
DUMMY_INDUSTRY	-0.0075 (-0.6875)	0.0035 (0.7091)
DUMMY_SPORE	0.0519 (1.2558)	-0.1158 (-8.6672)
DUMMY_MSIA	0.0869 (2.5568)	-0.0261 (-2.1662)
DUMMY_THAI	0.0245 (0.6762)	-0.1111* (-9.5853)
DUMMY_INDON	-0.0266 (-0.7579)	-0.1682 (-15.4335)
DUMMY_2018	-0.0362 (-3.9511)	0.0163 (3.4732)
DUMMY_2019	0.0848 (10.5459)	0.1344 (30.7808)
R-squared	0.397	0.475
Adjusted R-squared	0.371	0.452
S.E. of regression	0.078	0.092
F-statistic	15.224	
Prob(F-statistic)		
Rw-squared		0.879
Prob(Rn-squared stat.)		0

CONCLUSION AND DISCUSSION

The study hypothesizes that IPO underpricing across countries can be explained by firm-level ownership structure and corporate governance mechanisms, country level corporate governance and political events. The study examines IPOs in Indonesia, Malaysia, Thailand, Singapore and the Philippines from 2015 to 2019. Ownership concentration and board characteristics- board size, board independence, and board gender diversify are used to study IPOs return in this market.

The study confirms underpricing in Indonesia, Singapore and Malaysia. The largest shareholder is found to discount underpricing in all markets. The roles of board independence as signaling to the market are effective in Malaysia and Singapore, but not in Thailand and Indonesia

Board size is significantly related to stock performance, which involve the issue of size efficiency and the issues of information asymmetry in the emerging market. Despite the presence of women on board in this region, gender diversity positively but not significant in explaining underpricing.

In general, the higher the amount of shares that investors hold, the stronger their incentives to monitor and, hence, protect their investment. Additionally, corporate governance can be improved in the sense that large shareholders may also prevent the possibility of a takeover bid and, hence, make managers to feel safer about their positions (Shleifer and Vishny, 1986; Bukart, 1995). Although large shareholders may help in the reduction of agency problems associated with managers, they may also harm the firm by causing conflicts between large and minority shareholders. In cases, when large shareholders gain nearly full control of a corporation, they are engaged in self-dealing expropriation procedures at the expense of minority shareholders (Shleifer and Vishny, 1997). Any expropriation incentives are stronger when law does not effectively protect small shareholders and the diversity between cash and control rights of large shareholders is huge (see, for example, Grossman and Hart, 1986). Furthermore, the existence of concentrated holdings may decrease diversification, market liquidation and stock's ability to grow and, therefore, may increase the incentives of large shareholders to expropriate firm's resources.

The signaling theory deals with how to solve the problem of information asymmetry in a competitive environment. Signals reduce information asymmetry between organizations and their diverse stakeholders (insiders and outsiders) and provide competitive advantage to the organization by reducing the legitimacy gap with society. Furthermore, feedback signals from outsiders are crucial for the organization to understand the real gap between insiders and outsiders and encourage the design and implementation of an improved plan.

Overall, the paper supports the findings of many researchers that board independence, promulgating good corporate governance, leads to better access to capital at lower cost, thus providing growth opportunities for ASEAN region.

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BAFE054:
**PERCEPTION OF BARRIERS IN FUTURE CAREER AMONG
ACCOUNTING STUDENTS: SOME INITIAL EVIDENCE OF GLASS
CEILING**

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Abstract

The purpose of this study is to evaluate accounting students' views of impediments to future employment in the context of the glass-ceiling issue and gender inequality. This study is conducted against the backdrop that fewer women accountants have reached the partnership level, despite a steadily increasing proportion of women members enrolling in accountancy organizations in Malaysia. A survey was conducted to discover respondents' opinions about career, social and educational hurdles they anticipate encountering in the future. Students from three Malaysian institutions were asked to assess the extent to which their gender and ethnic origin contributed to their career, social and educational obstacles. Based on 275 replies, most respondents appear to disagree that there are impediments to advancement based on gender or ethnicity. When the study is decomposed by gender, the results indicate that more women than men believe that they face career, social and educational hurdles, even though most women disagree. Statistically, the T-test indicates that more women believe their gender is a factor in discrimination, suggesting a higher perception of barriers among women accounting students. Both men and women express the same level of disagreement/agreement about how their ethnic origin may contribute to professional or educational difficulties. In general, the results suggest that perception of barriers is pronounced among women students than men, and gender-based discrimination is most concerned. These findings add to the body of knowledge about the perceived glass ceiling among accounting students and provide input for policymakers to strengthen the present policies.

Keywords: Gender, Glass Ceiling, Accounting Students

INTRODUCTION

The term 'glass ceiling' refers to the invisible hierarchical obstacles that prevent women from achieving elevated professional success and, thus, inhibit gender equity. The definition has also included the minority groups in the organization (Roehling et al., 2009). Acker's theory of gendered organization (Acker, 1990) is possibly the leading theoretical framework for examining gender equity within an organization. The theory argues that specific aspects of the organizational processes and policies give rise to gender inequity. Interestingly, a large body of research has documented the gendered nature of accounting organizations (please see, for example, Dambrin and Lambert; 2012 and Haynes; 2017). For instance, audit firms are known to value the ideal workers. They put their work more important than anything else and are structured to include standardized job descriptions, career ladders, and manager-controlled evaluations. According to Acker (1990), these are the characteristics of a gendered organization.

The Women, Family and Community Development Ministry of Malaysia reports that women outnumbered men in professionals' fields like dentistry, medical, law and accounting. There are 52.6% of women accountants between 2016 to 2017 (Yuen, 2019). As of March 2020, more than half, or precisely 54% of 37,493, of the Malaysian Institute of Accountants (MIA) 's members are women (Mahzan, 2020). While women accounted for more than half of MIA membership, how many have

reached the top position is unclear. Evidence from the listed company's segment (Al-Dhamari and Chandren, 2017) suggest that women only account for around 13 percent of the signing audit partner. On top of that, Bumiputera makes up 30% of total membership, and there is a mere 8% of them who possess professional qualifications (Berita Harian, 2017).

According to Wesarat & Mathew (2017), unequal job opportunities for women have occurred in many countries. It is more difficult for women to climb up the organizational ladder than men. Given that more than 70% of accounting students are women and more than half of accounting professional memberships are women, it is reasonable to expect the same proportion to hold the post at top positions. Unfortunately, in the lack of breakdown statistics on Malaysia's MIA membership, the overseas data suggest an imbalance between men and women when it comes to top management positions. Thus, this indicates that, despite the increasing number of women in the accounting profession, they are still vastly underrepresented at the decision-making process level, i.e., audit partnership level.

Numerous studies are investigating the issue of the glass ceiling and career progression. Many of these studies focus on those already in employment. For instance, Malaysian studies such as of Abidin et al. (2008), Abidin et al. (2009), and Adapa & Sheridan (2019), are all focusing on those in employment. To date, limited Malaysian studies examine the perception of the glass ceiling among accounting students (i.e., accountant-to-be) and how this perception could shape their future career progression expectations. Studies (e.g., Bates and Holt, 2021; Finn & Holton, 2019; Vespa, 2009) argue that it is vital to understand students' expectations of gender inequality since it potentially may shape their career pathways and decisions about their working lives. The results from this understanding could help authorities develop a better policy, introduce a more holistic education approach, and implement a more effective strategy at an early stage to overcome this prolonged issue. Thus, this study is set to identify the perception of the glass ceiling among accounting students within the Malaysian context.

The primary purpose of this study is to identify the accounting students' perception of how their gender, ethnicity, and family-related concern might affect them in their future careers. We also asked the students if their gender and ethnicity will make identifying their role models or mentors challenging.

The remainder of this paper is organized as follows. The following section discusses related literature and outlines relevant studies of the glass ceiling in the accounting sector. It is followed by a description of the questionnaire development and the research method. Then, the following section reports the results of the analysis. The final section concludes the paper and offers some recommendations.

LITERATURE REVIEW

Glass Ceiling and Inequality

European Institute for Gender Equality (EIGE) defines the glass ceiling as 'artificial impediments and invisible barriers that militate against women's access to top decision-making and managerial positions in an organization, whether public or private and in whatever domain'. It is a metaphor frequently used to describe the obstacles and barriers in front of women seeking promotions to the top levels of organizations (Weyer, 2007; International Labour Office, 2004). The term glass ceiling is also often used to describe the impediments to career success by minorities. Acker (2009) suggests that "Inequality Regimes" is a more accurate metaphor. It stands for gender, race, and class barriers that obstruct women's opportunities for advancement at all levels of the organizational hierarchy.

There are also no objective and visible criteria that would allow one to identify a glass ceiling in a workplace. Nonetheless, according to several studies, the glass ceiling can be defined as subtle but persistent barriers/obstacles based on discriminatory, conscious, and unconscious practices and attitudes that prevent qualified women from advancing to top/senior management positions (e.g., Jackson and O'Callaghan, 2009; Bendl and Schmidt, 2010; Zeng, 2011). Thus, the glass ceiling refers to discriminatory hurdles that prohibit women from ascending to positions of authority or responsibility

or moving to higher positions within an organization solely because they are female (Li and Leung, 2001).

Cotter et al. (2001) argue that not all gender or racial inequalities need to be defined as glass ceilings. According to them, glass ceilings are a specific form of gender or racial inequality, distinguishable from other forms of inequality. Therefore, they describe four criteria that can be used to define the glass ceiling effect. First, glass ceiling inequality represents gender or racial differences not explained by other job-related employee characteristics. Second, the glass ceiling inequality represents more significant gender or race disparity at the high end of the outcome than at the lower end. Third, the glass ceiling inequality means gender or racial disparities in the chances of promotion to higher ranks, not just the proportion of each sex or race currently in the higher ranks. The fourth criterion is closely related to the third criterion, which indicates that glass ceiling inequality increases gender or racial inequality throughout a career.

Meyer et al. (2002) argue that the glass ceiling increases organizational inequality and directly affects the quality of work. They claim that women are marginalized in the natural division of labor in organizations, consciously or unconsciously. Women's progress and promotion are not of the utmost importance to the organizations, and more often, it is uncommon for women to reach higher positions. Most people believe that women should be marginalized and should never occupy the highest position.

Inequality in the workplace itself could lead to several adverse impacts. For instance, Leonard (2019) asserts that an individual being discriminated against may develop higher anxiety levels, be more prone to outbursts and depression, increase workplace conflict, poor company morale, reduced organizational productivity, and lead to adverse legal actions. Harrington-Sullivan (2016) adds that inequality could also cause high employee turnover due to a hostile work environment. Causing employees who do not leave may be overburdened or distracted by having to train replacement employees. Studies (e.g., Altuzzara et al. 2021; Bandiera and Natraj, 2013) also suggest gender inequality hampers economic growth.

Factors Contributing to the Glass Ceiling

Bertrand (2018) studies the substantial literature on the glass ceiling and identifies three primary causes for women's continued exclusion from high-paying occupations. First, women with university degrees frequently opt for lower-wage works. While women have outperformed males in terms of educational achievement, they are disproportionately underrepresented in high-wage jobs. For instance, around 40% of women born in America in 1985 have a degree, compared to slightly under 30% of men—yet this educational advantage has not translated into better income for women. One reason for the wage disparity is that more often than males, university-educated women avoid majors that lead to higher-paying jobs.

Second, psychological disparities between men and women may account for the wage disparity. Most available data indicates that women are more risk-averse than males. Employees who are prepared to take calculated risks can compete for and negotiate higher-paying positions. Whether men and women are born with disparate attitudes toward risk or the differences are learned, knowing the role of nature vs. nurture is critical for bridging the divide.

Third, women bear a disproportionate share of the burden of childcare, housework, and other non-work-related responsibilities. Higher-paying jobs are less adaptable and require a more significant investment of time. Women struggle with this inflexibility more than men do since they continue to bear a disproportionate share of the burden of household care, particularly child-rearing. Indeed, childcare is a significant impediment to women's executive-level wages. Bertrand's research also discovered that when females earn more than their husbands, it strains the relationship and increases the likelihood of the marriage being unhappy or ending in divorce.

Glass Ceiling in Accounting Sector

Little is known about the glass ceiling and its occurrence in the accounting industry (Silva et al., 2018). The 2019 Trends Report from the American Institute of Certified Public Accountants

(AICPA) shows that 51% of new accounting graduates are women. Although women make up most new auditors and have been around for decades, they are underrepresented at the partner level (i.e., the top position) at the accounting firm. The survey found that in 1,129 accounting firms, women represented only 23% of members (AICPA, 2019). Meanwhile, in Malaysia, Al-Dhamari and Chandren (2017) examine the relationship between audit partners' gender and the reliability and relevance of the reported accounting earning. There were only 338 women audit partners out of 2,478 audit engagements. Thus, the statistics suggest that only 13.64% of women audit partners were involved in Malaysian public listed audit.

The same phenomena have been reported within the accounting profession in Ghana. A study by Bruce Twum (2013) attempts to discover whether Ghanaian accountants are affected by the glass ceiling effect. The survey results indicate that the number of women admitted to the Institute of Chartered Accountants in Ghana has increased; however, no women have been selected for senior positions.

Research has shown that women who sought accounting careers and participated in professional accounting institutions faced various forms of discrimination (Cooper, 2010). Richardson (1996) found that British men in accounting have higher pay standards. They expect a career path with rapid, linear career development, while women wish to have children and prioritize them at the expense of career. Barker and Monks (1998) compared professional development for men accountants and women accountants in Ireland, focusing on barriers to professional development. They show that women accountants face obstacles that men do not. Also, professional development is more common among women who sacrifice family life. According to Acs et al. (2011), women face barriers result from the educational experience, family roles, social roles, and lack of networking. Moreover, Cohen et al. (2020) indicate that the factors affecting the perceptions of women private accountants on the glass ceiling in the US include bias, structure, and culture within an organization.

A limited but growing number of studies examine the issues of women within the accounting profession in Malaysia. Rather than focusing on the issues facing the women themselves, most studies that examine the presence of women are concentrated on the cause-and-effect link between the presence of women in an organization (or process) and the selected events, such as compliance, transparency, and performance.

Among the earliest Malaysian study that highlight the impediment of women accountants to career progression is the study by Abidin et al. (2008). The study finds that job stress, overtime, and the existence of a two-career household were seen as affecting either the marriage or marital status. Some respondents perceived that having children harmed their employment opportunities, suggesting that having children could impair job flexibility and possibilities for promotion. The following study by Abidin et al. (2009) finds that some women accountants have indeed broken through the "glass ceiling." About 3% of individuals in the survey defined themselves as "top management" and earned well in a private limited firm with less than 50 employees. However, despite modest progress, none of the responders could advance to top positions in large corporations. They suggest that this is not an issue of women joining the workforce but the glass ceiling that hinders them from taking the leading role in management.

Adapa and Sheridan (2019) conducted in-depth interviews with male and female directors and partners of small and medium-sized accounting firms. They explored the factors that limit the career development of women in Malaysia. The results of the analysis highlight the emergence of four thematic categories to capture the constraints to female careers progression. These identified constraints are gender labor practices, competitive pressure, stereotyped beliefs, and ethnic influence. In addition, they also unveiled that in the context of family-owned firms, women have more opportunities in family businesses when there are no male family members. The study emphasizes that the overlapping nature of the identified restrictions represents multiple oppression at the individual, organizational and national levels, limiting women's career opportunities in the accounting profession in Malaysia.

RESEARCH METHODOLOGY

Questionnaire Development

A self-completion questionnaire was used to collect primary data for this study. The questionnaire was constructed with the help of the online tool Google Form. The questionnaire was adapted from the prior studies of McWhirter (1997). The adaptation is necessary as the original version was tested in different environments and cultures. The questions measuring the respondents' perception of barriers (POB) were based on the modified version of McWhirter's (1997) POB as used by Luzzo and McWhirter (2001). The respondents were asked to state to which degree they agreed with the probability of facing thirteen different work-related barriers in their future career along a 4-point Likert scale. The statements included both workplace situations as well as potential personal concerns. Before distributing the questionnaire, we seek an expert in social science to verify the questionnaire. Based on the suggestions, we then made several amendments to the questionnaire.

We then distributed questionnaires to a small group of students for the pilot study. We then analyzed the responses looking for possible issues such as the understandability and clarity of the survey. The specific questions were administered to respondents asking them to rate 13 inquiries related to job progression barriers—four questions related to the perception of gender barriers and another four related to ethnicity. The remaining five questions are about personal concerns and are irrelevant to gender or race. Based on several suggestions put forwards by the respondents, we made further amendments to the questionnaire.

Sampling Design

The study population includes students studying for an accounting degree at three universities in Malaysia. The first university is a public university with the most significant number of students on a single campus. The accounting course at this university is recognized by the Malaysian Institute of Accountants (MIA), Association to Advance Collegiate Schools of Business (AACSB) dan EFMD Programme Accreditation System (EPAS). The other university is in another state and was established in 2001 as a private university. The accounting degree at this university was offered in 2002 and recognized by the MIA. The third university is another public university located in the Klang Valley.

Non-probability sampling was used to develop a potential sample. Convenience sampling was used to facilitate the distribution of the survey questionnaire. We seek the help of lecturers from the three universities to announce the availability of the survey. Students could respond to the survey by clicking the web link to the questionnaire. Students were made known that their participation was voluntary and would be treated as confidential. They were assured that they could pull out at any time. The data collection was carried out for one month, i.e., from June 12 to July 12, 2021.

DATA ANALYSIS

A total of 275 questionnaires was returned and used for analysis purposes. There are 210 and 65 women and men respondents, respectively. Table 1 provides descriptive statistics and a summary of the response to the questionnaire. On average, the respondents indicate the mean response between 2 to 3, indicating an almost equal number of either clearly agree or disagree. Looking at responses according to the Likert scale shows most respondents select 'Disagree a Little' or 'Agree a Little'. A substantial number of respondents choose 'Completely Disagree' with the statements. However, only a small number of respondents 'Completely Agree' with the perceived barrier to job progression statements. When we grouped those responses into two categories, i.e., disagree and agree, we can see that most respondents tend to disagree that there are barriers to progression due to gender or ethnicity (see statements #1 to #9). The majority of respondents also

disagree that they will have trouble pursuing the desire to have children. Also, the majority tend to disagree that they will have issues lacking somebody to be their role models or mentors.

Table 1: Overall Result

In my future career, I will probably..	ALL RESPONSES (n=275)																						
	SAMPLE STATISTICS			1				2				3				4				DISAGREE (1&2)		AGREE (3&4)	
	Mean	Median	Std. Dev.	#	%	#	%	#	%	#	%	#	%	#	%	#	%	%	%				
1 ...be treated differently because of my <i>GENDER</i> .	2.19	2.00	0.93	79	29	82	30	96	35	18	7	59	41										
2 ...be treated differently because of my <i>ETHNICITY</i> .	2.28	2.00	0.92	64	23	95	35	91	33	25	9	58	42										
3 ...experience negative comments about my <i>GENDER</i> (such as insults or rude jokes).	2.24	2.00	0.90	67	24	95	35	94	34	19	7	59	41										
4 ...experience negative comments about my <i>ETHNICITY</i> (such as insults or rude jokes).	2.21	2.00	0.88	62	23	113	41	79	29	21	8	64	36										
5 ...have a harder time getting hired than people of the opposite <i>GENDER</i> .	2.24	2.00	0.92	69	25	95	35	88	32	23	8	60	40										
6 ...have a harder time getting hired than people of the opposite <i>ETHNICITY</i> .	2.30	2.00	0.92	61	22	98	36	89	32	27	10	58	42										
7 ...experience discrimination because of my <i>GENDER</i> .	2.15	2.00	0.90	73	27	109	40	73	27	20	7	66	34										
8 ...experience discrimination because of my <i>ETHNICITY</i> .	2.19	2.00	0.90	67	24	112	41	73	27	23	8	65	35										
9 ...experience difficulties pursuing my desire to have children.	2.21	2.00	0.92	75	27	86	31	96	35	18	7	59	41										
10 ...have difficulty getting time off when my children are sick.	2.45	3.00	0.92	54	20	71	26	121	44	29	11	45	55										
11 ...have difficulty finding work that allows me to spend time with my family.	2.59	3.00	0.91	39	14	76	28	119	43	41	15	42	58										
12 ...have relationship concerns.	2.51	3.00	0.85	40	15	81	29	129	47	25	9	44	56										
13 ...lack role models or mentors.	2.39	2.00	0.87	49	18	90	33	115	42	21	8	51	49										

1=Completely Disagree
 2=Disagree a Little
 3=Agree a Little
 4=Completely Agree

On the other hand, the majority feel that they will have difficulty meeting family commitments once they are working, especially to get the day off to attend to sick children. Respondents also agree that they will have problems finding a job that allow them to spend time with family. A slight majority of respondents also feel that they will face relationship concerns.

Table 2 summarizes the responses according to gender. More men than women tend to disagree that their gender and ethnicity might affect them during employment. Although more women think they will have a hard time getting hired than people of the opposite race, the percentage difference is very close. Except for statement #12, in general, men tend to disagree that they will have issues with family-related concerns and lack role models and mentoring. Interestingly, the results indicate that more men than women are worried about how their job might affect their relationships.

Table 2: Women vs. Men Response Analysis (n=275)

In my future career, I will probably..	WOMEN (n=210)								MEN (n=65)								DISAGREE (1&2)		AGREE (3&4)	
	1		2		3		4		1		2		3		4		WOMEN	MEN	WOMEN	MEN
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	%	%	%	%
1 ...be treated differently because of my <i>GENDER</i> .	52	25	62	30	80	38	16	8	27	42	20	31	16	25	2	3	54	72	46	28
2 ...be treated differently because of my <i>ETHNICITY</i> .	46	22	73	35	75	36	16	8	18	28	22	34	16	25	9	14	57	62	43	38
3 ...experience negative comments about my <i>GENDER</i> (such as insults or rude jokes).	45	21	71	34	79	38	15	7	22	34	24	37	15	23	4	6	55	71	45	29
4 ...experience negative comments about my <i>ETHNICITY</i> (such as insults or rude jokes).	46	22	83	40	66	31	15	7	16	25	30	46	13	20	6	9	61	71	39	29
5 ...have a harder time getting hired than people of the opposite <i>GENDER</i> .	49	23	67	32	76	36	18	9	20	31	28	43	12	18	5	8	55	74	45	26
6 ...have a harder time getting hired than people of the opposite <i>ETHNICITY</i> .	45	21	77	37	68	32	20	10	16	25	21	32	7	11	58	57	58	57	42	43
7 ...experience discrimination because of my <i>GENDER</i> .	52	25	76	36	67	32	15	7	21	32	33	51	6	9	5	8	61	83	39	17
8 ...experience discrimination because of my <i>ETHNICITY</i> .	49	23	85	40	61	29	15	7	18	28	27	42	12	18	8	12	64	69	36	31
9 ...experience difficulties pursuing my desire to have children.	56	27	63	30	77	37	14	7	19	29	23	35	19	29	4	6	57	65	43	35
10 ...have difficulty getting time off when my children are sick.	37	18	51	24	101	48	21	10	17	26	20	31	20	31	8	12	42	57	58	43
11 ...have difficulty finding work that allows me to spend time with my family.	30	14	55	26	92	44	33	16	9	14	21	32	27	42	8	12	40	46	60	54
12 ...have relationship concerns.	31	15	63	30	97	46	19	9	9	14	18	28	32	49	6	9	45	42	55	58
13 ...lack role models or mentors.	38	18	60	29	97	46	15	7	11	17	30	46	18	28	6	9	47	63	53	37

1=Completely Disagree
 2=Disagree a Little
 3=Agree a Little
 4=Completely Agree

We then test the mean differences between the two groups using the T-test. As shown in Table 3, the mean difference is only significant for four statements. Interestingly, they are all about how their gender might influence how they will be treated in their future career. These findings indicate that women still believe that there are glass ceiling barriers that they will face in their future career.

Table 3: T-test Analysis Result (Women vs. Men, n=275)

In my future career, I will probably..	WOMEN (n=210)			MEN (n=65)			T-Test Pr(T > t)
	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.	
1 ...be treated differently because of my <i>GENDER</i> .	2.29	2.00	0.93	1.89	2.00	0.89	0.0027
2 ...be treated differently because of my <i>ETHNICITY</i> .	2.29	2.00	0.89	2.25	2.00	1.02	0.7358
3 ...experience negative comments about my <i>GENDER</i> (such as insults or rude jokes).	2.30	2.00	0.89	2.02	2.00	0.91	0.0231
4 ...experience negative comments about my <i>ETHNICITY</i> (such as insults or rude jokes).	2.24	2.00	0.88	2.14	2.00	0.90	0.4262
5 ...have a harder time getting hired than people of the opposite <i>GENDER</i> .	2.30	2.00	0.92	2.03	2.00	0.90	0.0397
6 ...have a harder time getting hired than people of the opposite <i>ETHNICITY</i> .	2.30	2.00	0.91	2.29	2.00	0.96	0.9533
7 ...experience discrimination because of my <i>GENDER</i> .	2.21	2.00	0.90	1.92	2.00	0.85	0.0218
8 ...experience discrimination because of my <i>ETHNICITY</i> .	2.20	2.00	0.88	2.15	2.00	0.97	0.7187
9 ...experience difficulties pursuing my desire to have children.	2.23	2.00	0.92	2.12	2.00	0.91	0.3987
10 ...have difficulty getting time off when my children are sick.	2.50	3.00	0.90	2.29	2.00	1.00	0.1056
11 ...have difficulty finding work that allows me to spend time with my family.	2.61	3.00	0.92	2.52	3.00	0.89	0.5040
12 ...have relationship concerns.	2.50	3.00	0.85	2.54	3.00	0.85	0.7214
13 ...lack role models or mentors.	2.42	3.00	0.87	2.29	2.00	0.86	0.2856

1=Completely Disagree
2=Disagree a Little
3=Agree a Little
4=Completely Agree

CONCLUSION AND DISCUSSION

This study is set to identify the perception of the glass ceiling among accounting students within the Malaysian context. The primary purpose of this study is to identify the accounting students' perception of how their gender, ethnicity, and family-related concerns might affect them in their future careers. The results suggest that most of the students do not agree that they will face job-related barriers due to their gender or ethnicity, except for barriers that relate to family matters and relationships. While all respondents agree with the statements about gender and ethnic discrimination, women seem to represent the majority of them. Interestingly, most male students seem to worry more about the issue of relationships rather than gender or ethnicity discrimination issues. The findings indicate that most young generations are very worried about family life, and many do not see gender or ethnic discrimination as the main barriers preventing them from progressing in their future careers. The findings are also in conformity with what the scientists used to believe that on the whole, females of all ages tend to worry more and have more intense worries than males.

The difference in perception of barriers seems significant between women and men regarding barriers that emanated due to gender factors. The results should be viewed as a statement that women students generally do not feel secure being women, especially when working in a gendered organization. We can also take the results as an indicator that the systems that we have today, still unable to provide gender equality assurance. Taking that into context, it is therefore essential for authorities to address the gender inequality issue by helping women to break through a glass ceiling.

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BAFE057:
**APPLICATION OF FAMA AND FRENCH FIVE-FACTOR MODEL ON
SINGAPORE MARKET'S STOCK RETURNS**

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Abstract

The study extends an empirical examination of the validity of the Capital Asset Pricing Model (CAPM) and Fama and French Five Factors model (FF5) on the Singapore Exchange during 2016-2020. The five factors in the model include market premium, firm size (small minus big), firm value (high minus low), investment (conservative minus aggressive), and profitability (robust minus weak).

This paper uses empirical analysis and shows the validity of the Fama and French Five-Factor Model in explaining the stock returns. The market premium factor is the most significant risk factor in explaining the average returns, indicating the strong validity and presence of CAPM. Similarly, the size factor plays an essential role, with a substantial effect for the small firm to outperform their bigger market capitalization firms. Furthermore, firms' value has shown the significant findings that high-value firms beat the growth stocks. Likewise, the profitability factor signals that the robust profitability firms exceeded the weaker profitability firms' average return. Nevertheless, the investment as a risk factor has yet to find its significance in Singapore.

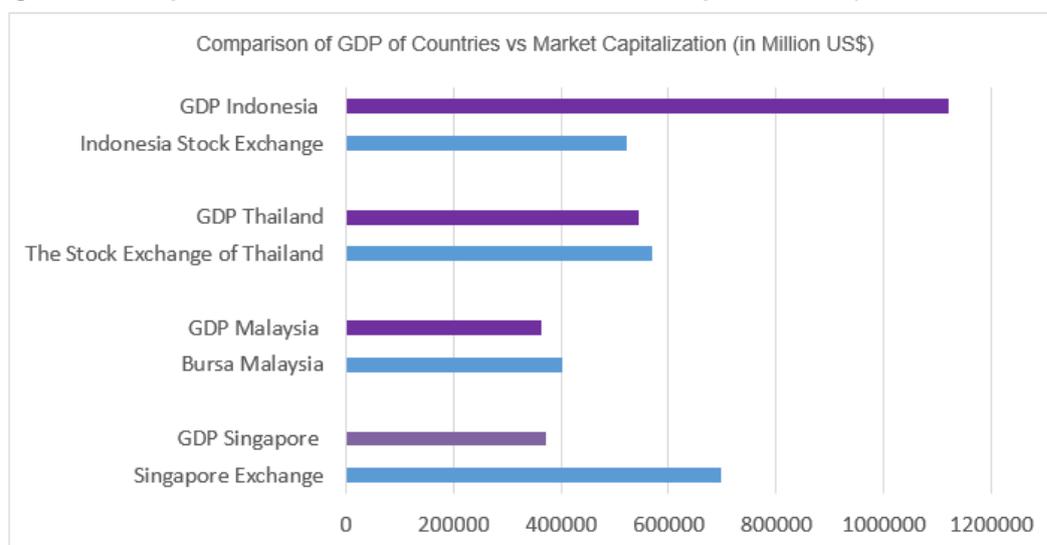
Keywords: Capital Asset Pricing Model (CAPM); Fama and French Five-Factor Model (FF5); capital asset return; market premium, firm size (small minus big), firm value (high minus low), investment (conservative minus aggressive) and profitability (robust minus weak)

INTRODUCTION

As a financial hub in Asia, Singapore is anchored by its high level of financial and macroeconomic environment for investors. The exceptional robust regulatory framework and economic policies have enabled the country's success as a renowned financial hub. For instance, Singapore has won Asia's top-performing economy and ranking as the world's most competitive economy in fifth place in 2021, according to International Institute for Management Development (IMD, 2021). In addition, the corruption perceptions index offers an annual snapshot of the relative degree of corruption by ranking countries and territories from all over the globe. Singapore has been ranked as the third corruption country (Jansky, 2021). Furthermore, the effort of Singapore Exchange to make the global analysis coverage on the market attracts local retailers and foreign institutions.

Riding on the advantages regulatory framework, economic competition, and stock exchange efforts, Singapore outperforms its southeast Asia counterparts, namely Malaysia, Indonesia, and Thailand, in terms of the market capitalization to its GDP. This ratio is called a Buffet indicator; a valuation multiple used to assess the worthiness of the aggregate stock market. This indicator shows the three countries are still not on par with Singapore, which is performing at the ratio of 1.87 (US \$ 697 B / US \$ 372 B). (See Figure 1)

Figure 1: Comparison of GDP of Countries vs Market Capitalization (Buffet indicator)



Data source: IMF (Note: Buffet indicator denotes the ratio of market capitalization and GDP of its respective country)

As a result, understanding the stock returns and the asset pricing in Singapore is essential and interesting for a financial hub in Asia with high dependencies on foreign investment. Likewise, this study has the implication and learning values for markets of Malaysia, Thailand, and Indonesia, which are still behind the market capitalization, despite the GDP performance of their countries (low Buffet indicator).

From the seminal work of Markowitz, assuming all investors are risk-averse, that the relationship between expected return versus risk was constructed. The optimum portfolio selection shall minimize the variance of portfolio returns (risk) on a given expected return and maximize expected return in a given variance (Markowitz, 1959). The expected return will be generated with the exposure to the risk. Consequently, investors need to understand the risk factors that can affect the expected or average return. In this context, the contemporary extended model of Fama and French, Fama and French Five-Factor Model (hereafter referred as FF5) is employed to understand the Singapore market's stock returns.

LITERATURE REVIEW

The relationship of risk and expected return was first introduced by William Sharpe, the Capital Asset Pricing Model (CAPM), which had brought a significant paradigm in financial economics (Sharpe, 1964). It was widely used to estimate the cost of capital for firms, measure abnormal returns, calculate the expected return on investment, and gauge the investment portfolio's health for rebalancing purposes. This model gained still the popularity that 73.5% of the respondent of CFO still using CAPM to estimate the cost of equity (Graham & Harvey, 2001)

Since 1980, more price anomalies have been published. For instance, Banz (1981) and Basu (1983) presented that firm size is also an essential risk factor where a low market capitalization tend to outperform bigger market capitalization stocks as well as a value premium, using book-to-market ratio, stocks with high book-to-market ratio outperform than lower book-to-market ratio stocks.

In 1993, Fama and French added two risk factors in average returns that were missed in CAPM. They presented the three-factor model with two additional factors: firm size and value premium (e.g., the book to market value). The three-factor model showed a significant improvement than the CAPM in that it adjusted for the outperformance of explaining the expected return (Fama & French, 1993).

Firm size in terms of market capitalization is another factor that can influence the excess return. It is termed SMB (small minus big). It measures the historic excess of small market

capitalization companies over big market capitalization companies. The primary rationale behind this factor is that, in the long term, small-cap companies tend to see higher returns than large-cap companies. Hou and Van Dijk (2019) postulated that the size effect in the cross-section of stock returns is considered as one of the most extensively studied topics in asset pricing.

Since 1981, researchers reported that small firms earn higher returns than big firms. The size effect has been examined and applied in numerous papers in finance and accounting (e.g., Fama and French 1992) (Banz, 1981). In addition, multifactor models that include a mimicking factor for the size effect (e.g., the Fama and French 1993 three-factor model) have been widely used as benchmark pricing models by academic researchers and investment practitioners.

Furthermore, there are many researchers conclude that small size firms do show evidence that they outperform the bigger firms in the period of 1980s and 1990s (Dichev, 1998; Chan, Karceski & Lakonishok, 1997; Amihud, 2002)

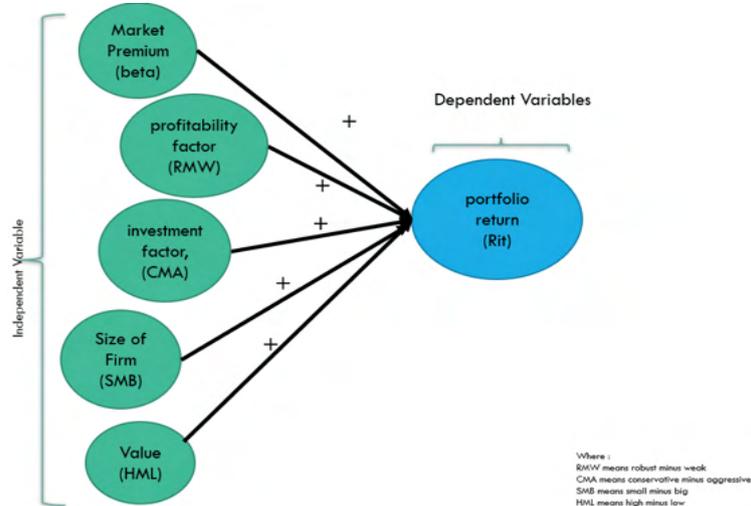
Other findings are postulated differently in different regions. Chui and Wei (1998) investigate and find a weak relationship between average returns and beta. There is a value premium in three of the markets and a size premium in four of the markets in Asia Pacific Basin. On the other hand, Bauman, Conover, and Miller (1998) examine returns on a range of Asian stock markets and find evidence of size and value premiums.

The unexplained anomalies return raised further efforts to complete the pricing model. Based on Novy-Marx's (2013) and Titman, Wei, and Xie's, (2004) evidence, the missing puzzles the factor of profitability and investment was additionally furnished. FF5 was then born, adding these two factors, profitability, and investment, covering the three factors that overlook the variation in average returns related to these two(Fama & French, 2015).

Even though the model was born in the United States, FF5 work has proliferated to emerging markets and non-US countries. After 2015, this latest capital return model- Fama-French five-factor model, has been extended and tested in many international equity markets, with empirical studies in developed and even emerging markets with absolute significant results (Fama & French, 2017). On the flip side, Cakici (2015) shows that the local factors could be more influential, and there is potential market segmentation in specific emerging markets. Foye (2018) echoes the statement by providing the empirical analysis from China, India, Indonesia, Malaysia, Philippines, South Korea, Taiwan, and Thailand, that profitability and investment factors are not significant. Foye (2018) further concluded that the five-factor model could not furnish a better description of portfolio returns in the Asia region than the three-factor model. Likewise, Zheng, Chiang, and Nelling (2020) conclude that the profitability and investment factors do not generally exist in Asian stock markets (including Singapore).

CONCEPTUAL FRAMEWORK

Figure 2: Conceptual Framework of the FF5



The theoretical framework is based on the FF5 to test the stock returns with the factors of market premium, size, value, investment, and profitability from 2016 to 2020.

Using the FF5: (Fama & French, 2015).

$$R_{it} - R_{Ft} = \alpha_i + \beta_i RM_t + s_i SMB_t + h_i HML_t + r_i RMW_t + c_i CMA_t + \varepsilon_{it}$$

Where

R_{it} is the return dollar on asset i for month t ,

R_{Ft} is the risk-free rate (the one-month Singapore Treasury bill rate),

RM_t is the market portfolio return minus the risk-free rate,

SMB_t , size factor (Small Minus High - market capitalization)

HML_t value factor (High Minus Low - B/M ratio)

RMW_t , operating profitability factor (Robust Minus Weak – profitability)

CMA_t investment factor (Conservative Minus Aggressive – investment style),

β_i , s_i , h_i , r_i , c_i are coefficient values of the 5 independent variables

Dependent variable: R_{it} is the return (dollar) on asset i for month t ,

Independent variable: Market Premium (RM_RF); Size of Firm (SMB); Value (HML); Profitability (RMW); investment (CMA)

RESEARCH METHODOLOGY

Data Collection and Sampling Design

In this study, the variables are collected from International Monetary Fund (IMF) and S&P Capital IQ (See Table 1). Using simple sampling method, the sample frame with criteria will be employed by removing the irrational and extreme characteristics-based values. The non-data availability companies from the S&P Capital IQ will be filtered. The negative book to market, which could create data error, must be eliminated in the samples. In addition, penny stocks below the US \$ 0.2 which will be potential speculative activities in the stock markets, will not be included in the sampling. In addition, the financial companies and investment trust will also not be included due to the high leverage characteristic in financial companies. They might be different from non-financial firms, whereas investment trust has a different investment strategy as a source of income, which will make the data separate from ordinary companies. With these criteria, 77 stocks are sampled.

Table 1: Data collection and the sources

Data Variables	Description	Source
Risk free rate	Monthly Treasure Bill of Singapore	IMF
Market Capitalization	Market capitalization of the month, using number of issued shares multiple with market share price	
Stock price	Monthly closing adjusted price	
Market Return	The return of indices of countries respectively ($\wedge STI$)	
Book to Market ratio	Ratio of book value over the market value	S &P Capital IQ
Operating profitability	annual revenue minus cost of goods sold, interest expense, and selling, general, and administrative expenses, all divided by book value of equity	
Investment	$[(Total Asset)_{t-1} - (Total Asset)_{t-2}] / (Total Asset)_{t-1}$	

Research Procedure

1.0 Dependent variables

Construction of independent variables are done with the portfolio sorting. The process involves double sorting of the market capitalization and followed by the book to market ratio is called Size-B/M; this sorting method will give birth to the portfolio of SL, SM, SH, BL, BM, and BH. This will repeat for the Size-OP and size-INV (See Table 2).

Table 2 Portfolios constructed using sorting method of size-BM, Size-OP and Size-Inv

Number of Portfolio	Sorting	Portfolio	Descriptions
1	SIZE-B/M	SL	Portfolio of stocks with a small size and low book-to-market value
2		SM	Portfolio of stocks with a small size and medium book-to-market value
3		SH	Portfolio of stocks with a small size and high book-to-market value
4		BL	Portfolio of stocks with a big size and low book-to-market value
5		BM	Portfolio of stocks with a big size and medium book-to-market value
6		BH	Portfolio of stocks with a big size and high book-to-market value
7	SIZE-OP	SW	Portfolio of stocks with a small size and weak profitability value
8		SR	Portfolio of stocks with a small size and high profitability value
9		BW	Portfolio of stocks with a big size and low profitability value
10	SIZE-INV	BR	Portfolio of stocks with a big size and high profitability value
11		SC	Portfolio of stocks with a small size and conservative investment value
12		SA	Portfolio of stocks with a small size and aggressive investment value
13		BC	Portfolio of stocks with a big size and conservative investment value
14		BA	Portfolio of stocks with a big size and aggressive investment value

After the double sorting and the construction of the portfolios (Table 2), the following steps are used:

- i. Monthly stock return of a single stock

$$= (\text{Stock price end of } t \text{ month} - \text{Stock price end of } t-1 \text{ month}) / \text{Stock price end of } t \text{ month}$$
 based on the stocks in the portfolio construction.
- ii. All stocks (sample of 77 stocks) will be calculated individually of the monthly stock returns, from 2016 to 2020, amounted 60 monthly data.
- iii. Using the monthly stock return of each individual stock to form the portfolio returns. For instance, the portfolio of BA (which fulfilled the criteria of big market capitalization and aggressive investment). These stocks are sorted with BA will be grouped under the BA portfolio, and the average return of these BA returns become the dependent variable of BA portfolio return for that t month. This procedure will repeat for the other 13 portfolios (listed in Table 2)

2.0 Independent variables

There are five independent variables in this study. Market premium will be collected from the STI index using S&P capital IQ.

The other four risk factors derivation (which is SMB, HML, RMW, CMA will be calculated from the portfolio returns listed in section 1.0. The following is the calculated risk factors.

- i. $SMB = \text{average} [1/3 [(SH+SM+SL) - (BH+BM+BL)], 1/2 [(SR+SW) - (BR+BW)], 1/2 [(SC+SA) - (BC+BA)]]$
- ii. $HML = 1/2 [(SH+BH) - (SL+BL)]$
- iii. $RMW = 1/2 [(SR+BR) - (SW+BW)]$
- iv. $CMA = 1/2 [(SC+BC) - (SA+BA)]$

DATA ANALYSIS

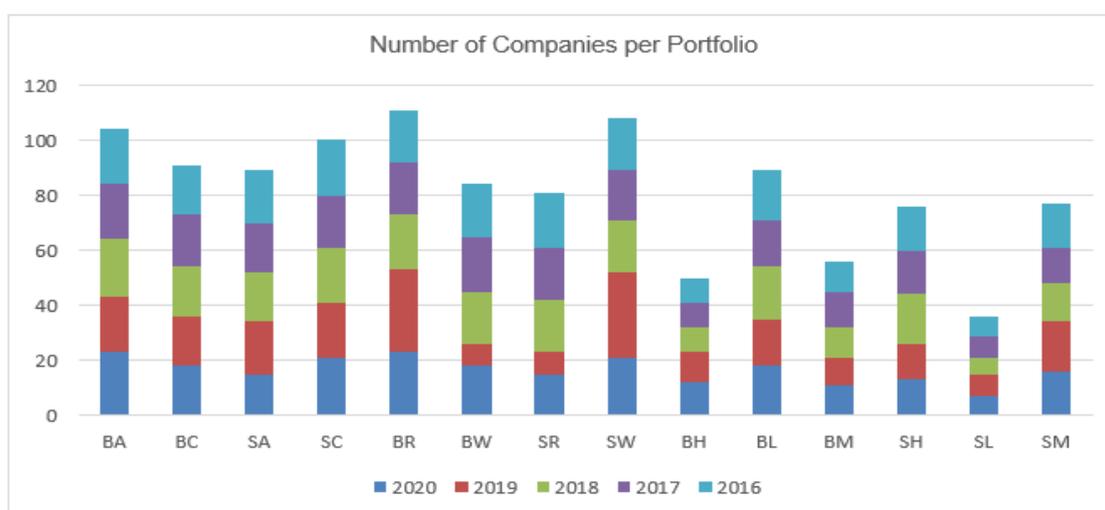
Descriptive Statistics

Tabulated in Table 3, there are 14 portfolios constructed. Each year, there are more than 10 stocks included in each of the portfolios. However, the portfolio of SL, a small firm with low firm value, has the most minor count of companies with such characteristics in the Singapore market. It has six to eight companies in this portfolio. On the contrary, big firms with aggressive investment (BA) and big firms with robust profitability (BR) have 19 to 23 companies included. From the cumulative of companies per portfolios, companies with the characteristic of SL and BH show a low number. (See Figure 3).

Table 3: Number of stocks in each of the portfolio

Portfolio	2020	2019	2018	2017	2016
BA	23	20	21	20	20
BC	18	18	18	19	18
SA	15	19	18	18	19
SC	21	20	20	19	20
BR	23	30	20	19	19
BW	18	8	19	20	19
SR	15	8	19	19	20
SW	21	31	19	18	19
BH	12	11	9	9	9
BL	18	17	19	17	18
BM	11	10	11	13	11
SH	13	13	18	16	16
SL	7	8	6	8	7
SM	16	18	14	13	16

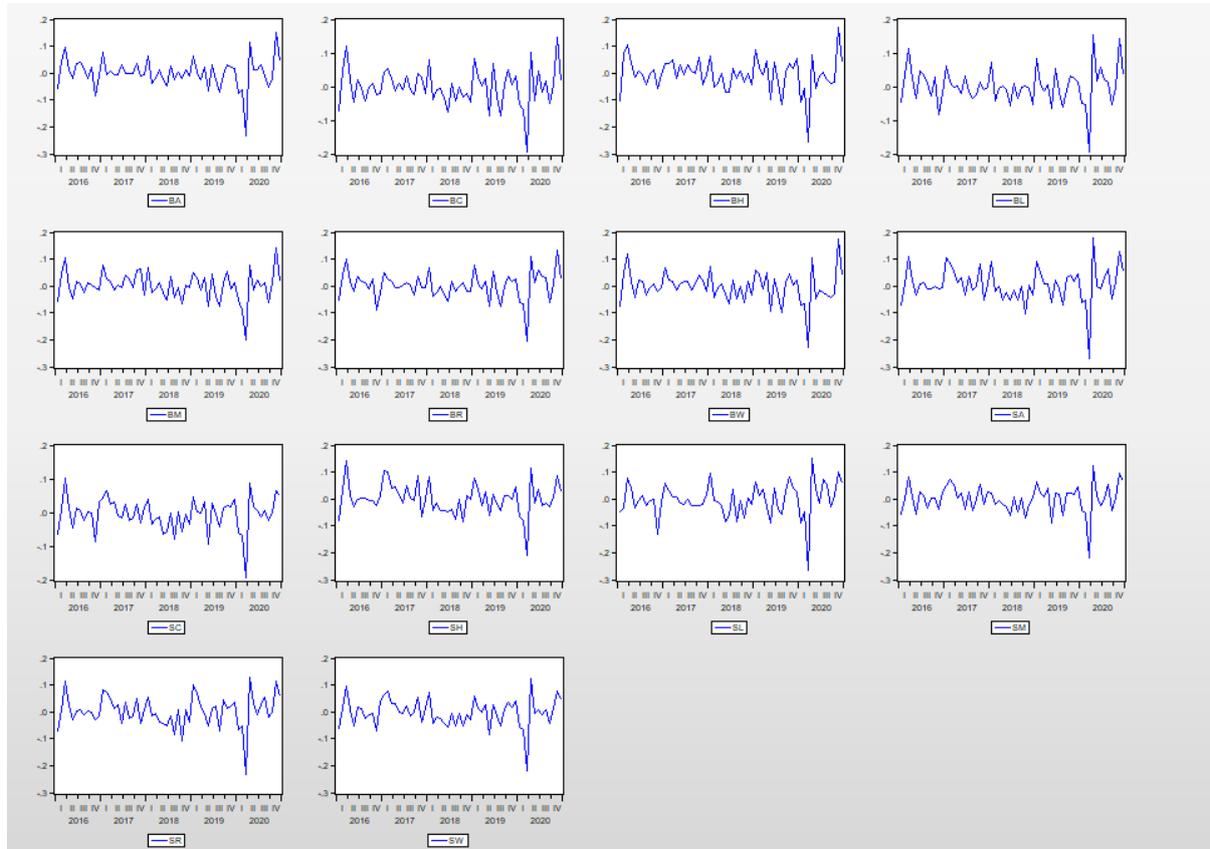
Figure 3: Number of the sampled Companies for the 14 portfolios constructed



With the constructed 14 portfolios (dependent variables), 60 observations are set for each portfolio, with monthly data from January 2016 till December 2020. Sharp V dip was clearly observed from all portfolios during Mar 2020, when the pandemic of COVID was started in Singapore with a lockdown situation. Small market capitalization companies witnessed the sharpest decline, especially

on the portfolio of SL (small market capitalization and low book to market value) and SA (small market capitalization and aggressive investment).

Figure 4: Average Return from January 2016 till December 2020 (14 portfolios constructed)



Estimate Results

The analysis method will be referencing to method of Fama and French (1993). The Fama and French (1993) time-series method started with portfolio construction by grouping the stocks into portfolios (see sub-section 1.0 Dependent variables). It sorted to have well-spread to the exposure of interest. In this study, one time-series regression per portfolio will be computed. After that, one set of common statistics will be based on the properties of the time-series intercept, ranging the different portfolios' characteristics, such as big firms with high profitability, small firms with high values, and so on (see Table 2).

Running the estimate using least squares, the coefficients of all factors and t-statistics are collected corresponding to the portfolios. (See Table 4)

Table 4: Regression results

Dependent Variable: (Portfolio Returns)	Variable (Coefficient)					
	RM_RF (β_i)	SMB (s_i)	HML (h_i)	CMA (c_i)	RMW (r_i)	Intercept (a_i)
BA	0.906 *	-0.101	-0.766	-0.262	-0.014	-0.006
BC	1.113 *	-0.040	-0.072	0.263	0.282	-0.002
BH	1.089 *	-0.210	0.331 *	-0.279	0.247	-0.008
BL	0.978 *	0.070	-0.583 *	-0.327	0.193	-0.004
BM	0.997 *	-0.093	-0.015	-0.144	-0.021	-0.001
BR	0.954 *	-0.141	-0.253	-0.196	0.607 *	-0.004
BW	1.069 *	0.008	-0.064	-0.390 *	-0.480 *	-0.004

SA	1.136 *	1.005 *	-0.087	-0.808 *	0.295	-0.002
SC	0.922 *	0.886 *	-0.289 *	0.160	-0.011	-0.006
SH	0.942 *	0.711 *	0.308 *	-0.358	0.173	-0.002
SL	1.143 *	1.110 *	-0.892 *	-0.337	0.223	-0.010 *
SM	0.983 *	0.992 *	-0.283 *	-0.208	0.030	-0.002
SR	1.063 *	1.005 *	-0.068	-0.406 *	0.679	-0.004
SW	0.947 *	0.861 *	-0.251	-0.208	-0.228	-0.003

***1% Significant**

Notes: That B means big market capitalization; A means aggressive investment; C means conservative investment; H means high B/M ratio; L means low B/M ratio; M means medium B/M ratio; R means robust profitability; W means weak profitability; S means small market capitalization (refer Table 2 for Portfolio Description)

From Table 4, the results show that the market premium has a significant statistical level in the market of Singapore with all the 14 portfolios constructed. All of them showed a significant level of 1%. Moreover, the portfolio returns are more than 90% of the market premium (with beta more than 0.9), with a positive correlation.

The results also indicate that the SMB (size factor) has superior results in all small portfolios (SA, SC, SH, SL, SM, SR, and SW). It shows no significant effect in big market capitalization firms in Singapore. All the portfolio returns are more than 86% of SMB (with β more than 0.86), with a positive association towards average return.

For HML (value factor), portfolios of BH, BL, SC, SH, SL, and SM, higher value (book to market value) yields higher average returns. The positive relationship of value against portfolio returns are demonstrated in both small and big market capitalization.

Only three portfolios show the significant statistical level for the risk factor of CMA (investment factor), namely BW, SA, and SR. This shows partial evidence on the risk factor of investment in this study. On the other hand, the missing of the significance of BA, BC, and SC, despite SA, shows a negative loading, with less significance of this risk factor.

Whist RMW (profitability factor) is statistically significant in the portfolio of BW and BR, indicating the robust profitability portfolio can generate more average returns. Nevertheless, this is not reflected in the portfolio of small market capitalization with the robust profitability firms.

The positive relationship average return against investment (CMA) and profitability (RMW) are discovered. The average return will be higher with the conservative investment firms and profitability firms, respectively.

Lastly, intercept (alpha) is reported with almost zero for all portfolios.

CONCLUSION AND DISCUSSION

Discussion

As the most significant risk factor for all portfolios, market premium signals CAPM's potential still finds its importance in Singapore's market. The beta substantially influences the portfolios, signaling the high presence of CAPM with market as systematic risk. It means the average return of the portfolio will have a high correlation to Strait Time Index (Δ STI). The high beta indicates the potential of an uptrend whenever the market is moving up. In general, past research shows that the market premium is highly correlated with other macroeconomic aggregates. It also means it will vary over the business cycle or any other macroeconomic condition, considering this factor's time variation. The investors could use these conditions to hedge or reap the capital gain from Singapore's market. Investors can diversify the unsystematic risk by investing following beta value stocks in the portfolio.

The significance of the small size effect is aligned with the findings in North America (Fama & French, 2015). The reward in small-size firms will be higher than their bigger market capitalization counterpart. The increased number of small firms is one of the idiosyncratic features of the Asian markets, like in Singapore (Brown, Yan Du, Rhee, & Zhang, 2008). The high number of penny stocks

could bring volatility and thus association to the high return. Consequently, small capitalization portfolios have great potential to yield substantial returns but with higher risk potential.

Over the past decade, growth stocks have outperformed value stocks, driven by the technology landscape, loose monetary policy, and low interest rates. As a result, active portfolio management in financial markets seeks investment opportunities and decides whether to invest in value stocks or growth stocks. Nevertheless, in the findings, the potential of growth stocks is still behind the value stocks. However, the situation of Southeast Asia may have changed if the prospect of giant unicorns like Grab, SEA, and GoTo successfully list in Singapore and Jakarta, paving the way for more high-growth companies.

Profitability and investment are the most debatable two risk factors. However, the importance of these factors differs across regions, with, for instance, profitability and investment effects being strong for North America, Europe, and the Asia Pacific, but not in the Japanese market (Kubota & Takehara, 2018). From the empirical result, it is more apparent that the profitability effect has fully exhibited in the big firm, that robust profitability firms produce higher average returns than the weaker firms. This conclusion shows that investors are still using the lagging information of profitability than other futuristic stock performance signals.

In terms of investment as a risk factor, the conservative style may yield more average returns, deriving from the SA portfolio. The market still prefers to reward the conservative firms that taking cash flow variability as a concern during investment. Nevertheless, this is not evidently displayed in other portfolios, name SC or BA and BC. The other portfolio investors may explain that this will be more neutral and tend to balance the investment by both styles. The foreign institution could potentially look for the equity with the aggressive investment, for their asset growth, compared to their home countries' equity distribution of conservative investment.

Lastly, with the intercept (alpha) almost zero for all portfolios, the results reconfirm the validity of FF5 in Singapore, explaining the cross-sectional variation in expected stock returns.

Conclusion

This study has successfully investigated the Fama French Five-factor model on the only developed market (Singapore Exchange) in Southeast Asia, Singapore, for five years, inclusive of the period of pandemic challenges (COVID-19), from 2016 till 2020.

We conclude that the empirical data successfully fit into Fama and French's finding in their work, showing up as the significance of five factors as postulated by Fama and French, 2017, evidently from the intercept. The market premium factor is the most significant risk factor to explain the average returns for the Singapore market. Similarly, the size factor plays an essential role in the average return, with a substantial effect for the small firm to outperform their bigger market capitalization firms. Furthermore, firms' value has shown the significant findings that high-value firms beat the growth stocks. Similarly, the profitability factor signals that the robust profitability firms exceeded the weaker profitability firms' average return. Nevertheless, the investment as a risk factor has yet to find its significance in Singapore.

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BAFE058:
**ISLAMIC CORPORATE GOVERNANCE: A RAHMATIN LIL'ALAMIN
CONCEPT**

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Abstract

Rahmatan lil 'alamin in an Islamic perspective is a concept in religious life that focuses on peace, tranquility, security and protection for all creatures of Allah. The creatures of Allah, namely humans, animals, plants and nature, the Company as an economic entity must adopt the concept of rahmatan lil'alamin as the basis for corporate governance. This governance requires companies to be accountable to Allah, fellow human beings and nature. The principles of governance are redesigned by implementing the concept of rahmatan lil'alamin. Governance with the concept of rahmatan lil'alamin is called Islamic Corporate Governance (ICG). Each of the principles of governance based on the rahmatan lil'alamin concept is disclosed in the company's annual report. There is an ICG disclosure item called Islamic Corporate Governance Disclosure (ICGD).

Keywords: Rahmatan Lil'alamin, Corporate Governance, Islamic Corporate Governance, Islamic Corporate Governance Disclosure

1. INTRODUCTION

The concept of Rahmatan Lil'alamin in Islam is defined as the existence of Islam in people's lives to create peace and love among fellow creatures of Allah (Rasyid, 2016). Allah's creatures are humans, animals, plants and the environment of the universe. This concept requires a harmonious, mutually beneficial relationship between all God's creatures. This is in line with the word of Allah stating:

"Wama arsalnaka illa rahmatan lil'alamin" (We have not sent you, Muhammad, but as a mercy to all the worlds)(QS Anbiya: 107)

Rahmat means tenderness or affection. The Prophet Muhammad was sent by Allah as an embodiment of Allah's love for all humans and the universe, including animals and plants. Thus, the Prophet Muhammad was sent to bring happiness to Allah's creatures, save humans both in this world and the hereafter. The mission of the Prophet Muhammad was sent for the benefit of the universe, without exception. Allah swt sent the Prophet Muhammad accompanied by various superior Islamic Shari'ah principles, manifested in the reality of his life.

Muslims as followers of the Prophet Muhammad must implement the rules of Islamic law that were mandated to the Prophet Muhammad, namely the treatise of Islamic law with full confidence and understanding that is based on the Qur'an and as-Sunnah (Jaya, 2019). Therefore, the actions, mental attitudes and behavior of Muslims must benefit the benefit of mankind and nature as God's creatures. Islam teaches morals and morals that are applied in everyday life. To direct human actions, attitudes and behavior, regulations and policies regarding the use, maintenance and management of resources are needed that are directed to the common good in accordance with the teachings and rules of Islamic law.

The company as an economic entity is a collection of people who are active to achieve the company's goals that have been set. The existence of the company in the environment must also be *rahmatan lil'alamin*. Companies must be able to create the benefit of mankind and the environment

(Hart & Zingales, 2017). A mechanism is needed to ensure the achievement of these goals. The mechanism is called Corporate Governance (CG). The CG that is established and carried out by the company must lead to the realization of the benefit of mankind and the environment. CG is a principle to improve the efficiency and economic growth of the company as well as an effort to increase investor confidence (Shleifer & Vishny, 1997).

CG is one of the pillars of the economic system (Pagano & Volpin, 2005). CG relates to trust in companies and the business climate in a country. The implementation of CG encourages the creation of healthy competition and conducive business climate. Therefore, the implementation of CG is very important to support sustainable economic growth and stability.

CG contains a set of regulations that define the relationship between shareholders, management, creditors, government, employees and other internal and external stakeholders in relation to their rights and obligations. CG is a system that directs and controls the company to create added value for all interested parties (FGCI, 2001). The principles implemented by the company related to CG are ethical actions that take into account the interests of stakeholders (Aluchna, 2015). CG involves a set of relationships between management and the board of commissioners, shareholders and other stakeholders. CG provides a medium to monitor performance (Azim, 2009). CG has five principles, namely transparency, accountability, independence, responsiveness and fairness to increase the value of the company in the eyes of investors.

The principle of transparency is openness in carrying out the decision-making process and presenting relevant material information about the company (Mahlel et al., 2016). Disclosure is the presentation of information to stakeholders, both mandatory and voluntary, regarding the company's operational, financial, and business risks. It aims to maintain objectivity in running the business. Companies must provide material and relevant information in a manner that is easily accessible and understood by stakeholders and not only matters required by laws and regulations, but also matters that are important for decision making by shareholders, creditors and other stakeholders.

The principle of independence is a condition where the company is managed professionally without conflict of interest and influence or pressure from any party that is not in accordance with applicable laws and regulations and healthy corporate practices (Prabowo, 2018). There are no elements of the company that dominate each other and are intervened by other parties. Independence is needed to avoid conflicts of interest, especially from the majority shareholder.

The principle of accountability is related to the clarity of the functions, implementation, and accountability of the company's management so that the management of the company is carried out effectively and economically (Prasetio, 2017). Companies must be able to be responsible for their performance fairly and transparently. Therefore, accountability is needed to explain that each party has carried out their duties properly and effectively.

The principle of responsiveness is conformity in the management of the company to the applicable laws and regulations and sound corporate principles (Setyono, 2015). This principle emphasizes the responsibility of the board in management, management supervision and accountability to the company and shareholders so that all parties are aware that they have a responsibility and avoid abuse of power or position

The principle of fairness, namely justice and equality in fulfilling the rights of parties with an interest in the company that arise based on agreements and applicable laws and regulations, especially for minority shareholders from any fraud or injustice of the majority shareholders (Prabowo, 2018).

The principles in CG are concepts that are invisible and difficult to measure properly. Indicators are needed to measure the implementation of these CG principles. CG measurement indicators used are the board of commissioners, independent board of commissioners, audit committee and ownership structure (Muntoro, 2006). These indicators have problems in their application, such as the unclear mechanism for determining the board of commissioners, the age and background of the board of commissioners, the mechanism for determining audit committee members, and concentrated ownership (Almaqoushi & Powell, 2017; Adam et al., 2015; Debby et al., 2014; Mukhtaruddin et al., 2014; Dharmadasa et al., 2014; Shyu, 2011; Gionannini, 2010; Tsao et al., 2009).

Therefore, it is necessary to redesign CG based on the concept of rahmatan lil'alamin which is called Islamic Corporate Governance (ICG). The concept of rahmatan lil'alamin is applied to every CG principle. This implementation is manifested in the form of disclosure in the company's annual report. Disclosure of any CG principles based on the concept of rahmatan lil'alamin is called Islamic Corporate Governance Disclosure (ICGD).

2. ISLAMIC CORPORATE GOVERNANCE DISCLOSURE

2.1. Accountability principle in Corporate Governance Disclosure

Accountability is an obligation to provide accountability or to answer and explain the performance and actions of each level of management by the leadership of the company (Prasetio, 2017). Accountability can also be interpreted as the responsibility of a person or group of people who are given the mandate to carry out certain tasks to the party giving the mandate both vertically and horizontally (Mubtadi et al., 2017). In the Islamic perspective, accountability is not only addressed to the community as horizontal accountability but also vertical accountability to the creator, namely to Allah.

The Islamic perspective states that accountability is the responsibility of a human being as a caliph on earth to Allah (Prasetio, 2017). Allah is the main and most important stakeholder. Allah swt has given a mandate to humans and Allah swt asks for accountability for the implementation of that mandate. The implementation of the mandate involves activities towards fellow human beings and to God. Therefore, the disclosure of accountability is addressed to God and to humans. Disclosure of responsibilities to humans through accountability reports that have been checked by the muhtasib (account). The goal is to provide confidence that sharia law has been implemented and rahmatan lil'alamin has been implemented.

There are three indicators in the implementation of accountability in the Islamic perspective, namely (1) activities carried out by companies must pay attention to and prioritize the welfare of the ummah as a manifestation of the mandate given by God to humans as caliphs, (2) activities carried out by companies with justice, and (3) activities carried out company pays attention to and pays attention to the surrounding environment. Indicator number one relates to accountability vertically and indicators number two and three relate to accountability horizontally (Mubtadi et al., 2017).

Accountability can be divided into two types, namely internal and external accountability (Mahlel et al., 2016). Internal accountability explains that individuals and groups are hierarchically obligated to account to their immediate superiors regarding the development of their activity performance periodically or at any time. External accountability explains that the company as an economic entity that is in a social environment must be responsible for all mandates that have been received and implemented to be conveyed to external parties, namely the government, community, labor unions, and other stakeholders.

There are five basic concepts of accountability, namely (1) accountability for probability and legality. This accountability is related to compliance with other required laws and regulations, avoiding abuse of office, corruption and collusion. This accountability aims to uphold the rule of law and ensure healthy business practices, (2) managerial accountability. This accountability is related to performance accountability, namely accountability to manage the company effectively and efficiently, (3) program accountability. This accountability is related to the programs planned by the company must be of quality programs and support the strategy in achieving the company's vision, mission and goals, (4) policy accountability. This accountability is related to the assessment of company policies that must consider the impact of these policies in the future and (5) financial accountability. Accountability is related to the use of public funds (shareholders, banks, communities, and environment) economically, efficiently and effectively. Financial accountability is very important because it is the main focus of the community. This accountability requires companies to present financial statements as a medium to describe the company's financial performance to stakeholders (Mahlel et al., 2016).

The main purpose of accountability is to encourage the creation of responsibility to improve company performance and increase stakeholder trust (Mahlel et al., 2016). The statement mentioned in the word of Allah is

"O you who believe, be enforcers of justice for Allah, (when) witness with justice" (QS Al-Maidah: 8)

"O you who believe, If you are doing a business with a debt that is given a certain period of time, then you should write it down (debt and payment period). And let a writer among you write it justly (correctly). And let no writer be reluctant to write as Allah swt has taught him" (QS Al-Baqarah; 282)

"And those who keep their messages and promises" (QS Al-Mu'minun: 8).

"Each person is responsible for what they do (QS Al-Mudassir: 38).

From the word of Allah swt it explains that accountability in perspective is related to the nature of shiddiq and amanah.

The dimensions of accountability based on Shari'ate Enterprise Theory (SET) are (1) economic accountability, (2) social accountability, (3) ecological accountability and (4) spiritual accountability (Amerieska et al., 2012). Economic accountability is the responsibility for the economic performance carried out by the company in a certain period of time. Indicators of achievement of this dimension can be seen from (a) physical; level of profit achievement, return on assets and (b) mental; stakeholder satisfaction on company services. Social accountability is the responsibility carried out by the company towards the company's social environment. Indicators of achievement of this dimension can be seen (a) physical; the company's budget for social activities and (b) increasing the sense of solidarity by sharing rizki. Ecological accountability is the company's responsibility to protect and maintain the surrounding environment. Indicators of achievement of this dimension are seen (a) physical; environmental conservation programs, for example the program to plant one million trees, (b) mental; proud to be able to help preserve the environment. Spiritual accountability is the responsibility to Allah for the grace and blessing that has been received. Indicators of achievement of this dimension are (a) physical; spiritual development programs such as ESQ, SOT and (b) mental; mental attitude, faith, sincerity.

The implementation of accountability in a company is disclosed in the company's annual report with the following items;

1. Information the company ethics of conduct
2. Information the company value's, belief and culture
3. Information the workshop places in office area
4. Information of company charity to develop the workshop placeah
5. Information thestatement of management responsible of financial statement
6. Information of public accounting firm's
7. Information the appraisal
8. Information the tax payment
9. Information of zakat, infaq dan sodakah
10. Information the dividend payment

2.2. Transparency principles in Islamic Corporate Governance Disclosure

Transparency is the principle to open up to the public's right to obtain access to correct, honest and non-discriminatory information about the operation of the company by taking into account the protection of rights to individuals, groups and the state. This means that transparency requires the disclosure of information in a serious, comprehensive manner and provides a place for stakeholders in the process of managing public resources

The basis of transparency in the Qur'an is (1) Siddiq or true; the basic value is integrity. The values in its business are honesty, sincerity, assurance, emotional balance, (2) Trust, the basic value is trusted and the values in the business are trust, responsibility, transparency and punctuality, (3) Fathanah, the basic value is having knowledge broad knowledge, the values in the business are having a vision, a smart leader, and (4) Tabligh, the basic values are communicative and the business values are sociability, smart salespeople, job descriptions, delegation of authority, teamwork, coordination, control and supervision (Mahlel et al., 2016).

Transparency really demands honesty values for information presentation in the company. Transparency and honesty are juxtaposed in some of the words of Allah, as follows:

"And complete the measure when you measure, and weigh it with the right balance. That is more important (for you) and better as a result" (QS Al-Is'ra: 35)

"Big woe for those who cheat (i.e.) those who when they receive a dose from others they ask to be filled, and when they measure or weigh for others, they reduce it" (QS Al-Muthaffifin: 1-3)

"O you who believe, do not eat your neighbor's property in a false way, but only in commerce with mutual consent between you" (QS An Nisa: 29)

The purpose of transparency is to create openness to stakeholders about activities carried out, access information, increase trust and cooperation between managers and stakeholders (Akhmad, 2016). The implementation of accountability in a company is disclosed in the company's annual report with the following items;

1. Information the company web or link to access of annual report
2. Information the completely of annual report from the company established
3. Information the halal certificate for the company product and services
4. Information the subsequent events
5. Information of the contingency liabilities
6. Information the statement of financial condition
7. Information of human resources development system
8. Information of payroll and remuneration system
9. Information the equality of employee right and obligation
10. Information of rewards and punishment system
11. Information the solution of employee and labor union dispute
12. Information the company membership in humanity institution
13. Information the company membership in Indonesia Red Cross
14. Information the company obligation to land rehabilitation

2.3. Independency principles in Islamic Corporate Governance Disclosure

Independence is an attitude of consistency or *istiqomah* by sticking to the truth even though you have to face risks. This principle of independence is explained in the word of God, namely:

"Indeed those who say: "Our Lord is Allah" then they strengthen their position, the angels will descend to them saying: "Do not be afraid and do not be sad; and make them happy with the jannah that Allah has promised you" (QS Fushshilat: 30)

Independent is a wise human character (*ulul al-bab*). This character is described in the Quran 16 times. This character is related to the attitude of being able to absorb information (hearing words) and making the best decisions (following) (according to his conscience without pressure from any party). Independence shows that the company is managed professionally without conflict of interest and influence/pressure from the management that is not in accordance with applicable laws and regulations and sound corporate principles. The implementation of independence, namely (1) must avoid domination by any party, not be influenced by certain interests, free from conflicts of interest and from any influence or pressure, so decision making can be carried out objectively, (2) carry out its functions and duties in accordance with the laws and regulations, and provisions, do not dominate each other and do not pass responsibility to others, (3) carry out their functions and duties in accordance with the description of their duties and responsibilities. By paying attention to the application of independence, it can be said that this principle applies Islamic values, namely *shiddiq* and *amanah*.

The implementation of accountability in a company is disclosed in the company's annual report with the following items;

1. Information the reporting in Indonesia language
2. Information the reporting currency is Rupiah
3. Information the segmented reporting by area or country
4. Information the mechanism of regulation determination
5. Information the job description
6. Information the reward and punishment
7. Information the company participation in disaster charity
8. Information the conflict of interest in company dalam perusahaan
9. Information the percentage of ownership structure
10. Information the numbers of share is owned by management

2.4. Responsiveness principles in Islamic Corporate Governance Disclosure

Responsiveness is the company's desire to provide services to stakeholders quickly. Responsiveness is related to the company's ways of receiving requests for information, complaints, suggestions, criticisms and complaints regarding the company's activities and services. The implementation of this activity requires a wise, detailed explanation, fostering, directing and persuading to respond to all forms of procedures and work mechanisms that apply in the company, so that the form of service gets a positive response. Feedback obtained by the company is stakeholder satisfaction for the company's fast response

This responsiveness principle emphasizes the interests of stakeholders, namely creating added value from the services provided by the company and maintaining the sustainability of the added value. The company's stakeholders are employees, customers, consumers, suppliers, communities, the surrounding environment and the government as regulator. This responsiveness principle gives rise to corporate social responsibility. This responsibility ensures the survival of the company. This is in line with the word of Allah stated;

"O you who believe, do not betray Allah and the Messenger (Muhammad) and (also) do not betray the mandates entrusted to you, while you know" (QS Al-Anfaal: 27)

Do not betray the mandates entrusted to you related to human duties on earth, namely as caliph. The function of the caliph is to maintain this earth so that there is no damage on earth. This earth is not only for the benefit of the present but also for the next generation. This is in line with the word of Allah, which states:

"You are the best people who were born for humans, enjoining the right and forbidding the evil, and believing in Allah" (QS Ali Īmran; 110).

Ma'ruf means that humans must act with all Allah creatures, namely humans, animals, plants and the environment. No matter how small a good deed done is recorded by Allah as a deed. Munkar means doing bad things like destroying the environment. No matter how small the bad deed done is recorded by Allah as a sin.

The implementation of responsiveness in a company is disclosed in the company's annual report with the following items;

1. Information the employee recruitment process for local society
2. Information the decision process as deliberation and consensus
3. Information the quality standard
4. Information the auditor's opinion
5. Information of company standard operating procedure
6. Information the complaint services unit
7. Information the numbers of society complaint handling
8. Information the corporation between company and labor unions
9. Information the corporation among company, other company and government
10. Information the corporation between company and religious institution
11. Information the corporation between company to legislative institution

2.5. Fairness principles in Islamic Corporate Governance Disclosure

Fairness is a fair and equal treatment in fulfilling the rights of stakeholders that arise based on agreements and applicable laws and regulations. Fairness also explains the clarity of rights and obligations, the legal system and enforcement of regulations to protect the rights of investors, especially minority shareholders from various forms of fraud. Fraud may occur is insider trading (transactions involving inside information), fraud, dilution of shares (decreased company value), corruption, collusion and nepotism.

Fairness is a manifestation of justice in the business world. Business decisions must be made in accordance with applicable regulations. Therefore, the company must (1) provide opportunities for stakeholders to provide input and express opinions for the benefit of the company and open access to information in accordance with the principle of transparency, (2) provide equal and fair treatment to stakeholders in accordance with the benefits and contributions made, (3) providing equal opportunities in hiring, having a career, and carrying out their duties professionally without discriminating against ethnicity, religion, race, class, gender and physical condition, and (4) being humble, namely fair in services to stakeholders without reducing their rights, and fulfilling all agreements with related parties. This is in line with the word of Allah;

"Indeed, Allah commands you to do justice and to do wisdom, to give you relatives, and Allah forbids you to do evil, evil and enmity. He teaches you so that you can take lessons" (QS An-Nahl: 90)

This shows that the Islamic concept requires the holding of business in a fair and honest manner for all parties.

The implementation of fairness in a company is disclosed in the company's annual report with the following items;

1. Information the recycle process of the waste
2. Information the employee classification by nation, religions and competences
3. Information the company activity related to society economic development
4. Information the company best practices
5. Information of creativity and innovation recognizing
6. Information on company slogans related to corruption, collusion, nepotism, gratification, extortion, efficiency and simplicity
7. Information the education scholarship
8. Information the healthy funding
9. Information the procedure of company resources used
10. Information the sanction of company resources steal
11. Information the reward employee that above working load

3. CONCLUSION

The implementation of the concept of rahmatan lil'alamin in the CG mechanism accelerates the achievement of goals for the welfare of stakeholders. Stakeholders can consist of humans, plants, animals and the environment. However, the most important and main stakeholder is Allah. Allah has given everything in this world. Therefore, everything that is given must be maintained and cared for properly.

Companies in achieving the desired goals use the resources available in the world. Companies must maintain and maintain these resources. The concept of corporate CG must lead in that direction. Thus the CG mechanism and the concept of rahmatan lil'alamin are two concepts that both want to increase the welfare of stakeholders.

The embodiment of this concept is seen in the company's disclosures in the annual report. There are fifty-seven disclosure items consisting of the concepts of accountability, transparency, independence, responsiveness, and fairness. This disclosure is called Islamic Corporate Governance Disclosure.

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BAFE060:
**B40 INCOME GROUP REACTION TOWARDS SPENDING, SAVINGS
& INVESTMENT, AND DEBT MANAGEMENT FOR A BETTER
FUTURE FINANCIAL WELL-BEING**

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Abstract

B40 income households has been highlighted as one of the focus areas in the Eleventh Malaysia Plan (11MP), 2016-2020. B40 are vulnerable to economic shocks and highly dependent on government support and assistance as they have low wealth and non-financial asset ownership. Between 2009 and 2014, the increase in expenditure has outstripped the increase in income for the B40 in both urban and rural areas, asserting more pressure on their cost of living and general wellbeing. B40 group struggled in managing their financial and daily life. This research aims to analyze the financial behaviour among B40 income groups in Malaysia towards their future financial well-being. For the purpose of this study, a set of questionnaires will be distributed to the Malaysian working adults categorized as B40 income group in Kuala Lumpur and Penang. It is important for the government to ensure the B40 group has better financial literacy. The result from this study will be useful and beneficial for B40 behaviour in their spending patterns, savings, retirement & investment, and debt management towards their future financial wellbeing.

Keywords: Financial Well-Being, Financial Literacy, Financial Behavior

INTRODUCTION

The Eleventh Malaysia Plan (11MP), 2016-2020, marks the final phase towards achieving a developed and inclusive nation in line with the Vision 2020. The Eleventh Plan, with the theme 'Anchoring Growth on People', focuses on the prosperity and wellbeing of Malaysian citizen. One of the focus areas in 11MP is to uplift the B40 households towards middle-income society. It is a game changer in the sense that its approach moves beyond income to look at broader multidimensional improvements that include wealth creation, education and skills. The targets are to double the B40 mean income (RM2,537 in 2014) and median income (RM2,629 in 2014) in 2020; increase the percentage with tertiary educational attainment from 9% in 2014 to 20% in 2020; and increase the income share from 16.5% in 2014 to 20% in 2020. This will be achieved through the three main strategies in 11MP which are to raise the income and wealth of the B40 households, to address the increasing cost of living and to enhance the delivery system of B40 household programmes.

The B40 are measured as households that earn a household income of RM3,855 and below in 2014. As stated above, the B40 have a mean income of RM2,537 and a median income of RM2,629. Updates by Department of Statistics Malaysia (DOSM), The mean and median income keep change year by year. In 2020, the mean of monthly household gross income decreased by negative 10.3 per cent to record RM7,089 as compared to RM7,901 in 2019. Meanwhile, the value of median of monthly household gross income in 2020 was RM5,209 (2019: RM5,873). Between 2009

and 2014, the increase in expenditure has outstripped the increase in income for the B40 in both urban and rural areas, asserting more pressure on their cost of living and general wellbeing. Moreover, the B40 have low wealth and non-financial asset ownership, vulnerable to economic shocks and highly dependent on government support and assistance. In 2014, the B40 households can be further disaggregated into 80.7% male-headed households and 19.3% female-headed households. In the Malaysia Human Development Report, one of the key findings is that female-headed households would experience relative income deprivation more acutely. B40 income group find it hard to secure housing in cities due to the high cost of living and low wages, poor financial literacy also contributes to their difficulty in saving up for deposits (Thomas, 2020). Financial literacy is the ability to understand and apply financial management skills such as budgeting, calculating interest and managing debt. Khazanah Research Institute's (KRI) State of Households 2018 report described the B40 group as households with gross monthly incomes of less than RM4,360 – although equivalent state-level thresholds vary significantly across the country.

In the current economic situation, financial literacy level in Malaysia is lower compared to other countries (Shaari, Hasan, Mohamed & Sabri, 2013). In addition, according to Choong (2013), it showed that the young adults below age 30 are having less financial knowledge compare with the people above 30 years old in most of the Asia Pacific countries. Based on the previous researchers' perspective, those individuals with low financial literacy are most probably having debt problems (Lusardi, Mitchell & Curto, 2009). Financial literacy is the most significant factor for effective financial decision among the young adults and this would useful for the policymakers. Financial literacy is defined as the ability to manage and evaluate a person's finances effectively in order to achieve secure financial goals in future (Sabri, 2011). Understanding the knowledge of financial literacy will ensure the effective way of managing the financial resources among the young adults for their lifetime financial protection. It is a skill to plan effectively and deal with the future financial needs.

ISSUES AND CHALLENGES FACED BY B40 INCOME GROUP

The cost of living has become a major concern among Malaysians particularly among the bottom 40% household. The Malaysian citizen main concerns centre on the rising cost of affordable housing, education and healthcare. The removal of fuel subsidies, weakening global economy, tumbling currency has exacerbated the rising cost of living, which is bound to be the largest concern among Malaysians. Previous Government's has do develop few programs to ease the burden of the lower income households through Bantuan Rakyat 1Malaysia (BR1M) cash handouts and improved price regulations are insufficient to cope with price increases and the effect of the introduction of Good and services tax (GST) and currently with Bantuan Sara Hidup (BSH). Malaysian believe that more interventions by the Government are necessary to enable them to face the increasing cost of living. On the other hand, there are views that the Government needs to help Malaysians to better manage their income and improve financial management. Moreover, government needs to educate Malaysians to have better financial literacy and knowledge and monitor a good financial behavior such as spending pattern, savings, retirement & investment, and debt management.

Based on Khazanah Research Institute (KRI) Report on house affordability, the Malaysian housing market was deemed "seriously unaffordable" with the median house price at 4.4 times the median income (Tay, 2015). It also labelled the housing market in Kuala Lumpur and Penang as "severely unaffordable" with 5.4 times and 5.2 times the median income, respectively. Unaffordability in buying a house and the increasing of the housing price has currently become the main issue in Malaysia (Osmadi, 2015). The larger urban centres have been identified as areas where the need and demand for housing are more pressing. These urban centres are experiencing rapid population growth as well as the entering of migrants from the countryside to enhance the quality of life. The increasing number of low and medium-income groups in the urban centres has exerted pressures on the part of State and Federal governments to provide affordable housing for the group to own a house.

In most developing countries including Malaysia, out-of-pocket payments for healthcare have increased dramatically. While public healthcare is generally cheap in Malaysia, the long waiting lines and comfortability are among its main pressing issues to be mitigated. The initiative government with Skim Peduli Kesihatan for B40 Group (PeKa B40) to improve the quality of health among this group citizen and *mySalam* protection scheme is Government initiative aimed at providing free takaful health protection to lower income Malaysians able to reduce the burden on healthcare cost. The option for private healthcare is burdensome to most Malaysians due to increasing cost of drugs, technology, the

increase in minimum wages as well as the imposing of new rules and standards that impact the cost of private healthcare. It poses a greater challenge for households to increase income and improve their quality of life. The low income/wage pressure coupled with increasing cost of living has affected the standard of living and quality of life of the low income households, besides ending their economic potential.

The findings on Malaysians' household expenditures in 2016, which was released earlier this month by the Department of Statistics Malaysia (DOSM), show where Malaysian families are spending their money. The top three expenses for an average household are housing and utilities (24%), food and beverages (18%) and transportation (13.7%). While this survey gives a good idea on how much Malaysians are spending in general, but how much a family allocate for each of these spending categories depend on their income range. The rising cost of living hits single income families the hardest, as they need to stretch their income for the entire household, with no backup income.

Tai and Noraina (2018), has discovered that many Malaysians do not have sufficient money to retire and special attention is required in order to improve the financial readiness for retirement in future. It is supported by the report from Central Bank of Malaysia (2013) and Employee Provident Fund Malaysia (2016) which showed that 88% of EPF contributors earns salary lower than RM5,000 per month. The finding showed that majority of EPF members earning lower than RM5,000 per month indicates that, at the age of 60 years old, their saving is estimated at RM480,000, with assumption of life expectancy is 75 years old, total contributions to EPF from individual and employer of 22% from monthly salary. In this scenario, retirement income will be at RM2,666 per-month (inflation not included) and the lifestyle of the EPF members therefore cannot be maintained but required to be cut into half compared to lifestyle before retirement. This low salary will subsequently followed by low saving and inadequacy of retirement financial cash flow for future.

According to Bank Negara Malaysia (2013), the ratio of household debt to the Gross Domestic Product (GDP) for 2013 was 86.8%. This figure placed Malaysia among the countries with the highest household debt in the Asia Pacific region compared with Thailand (30%), Indonesia (15.8%), Hong Kong (58%), Taiwan (82%), Japan (75%) and Singapore (67%) (Noorhaslinda, et al., 2018). Excessive debt that is not commensurate with income will render households vulnerable to unexpected shocks. It affects household expenditure and spending along with the stability of the country's economic growth (Mohamad, 2014). In addition, according to the Credit Counselling and Debt Management Agency (2014), one should limit the amount of repayment of loans to one-third of its gross income. However, the reality today is quite the opposite. From 2009 until 2013, the ratio of Malaysian debt repayment on household loans exceeded by 43%, which means almost half of household income was spent on servicing debt, leaving slightly more than half to meet the needs of everyday. Increases on debt repayment ratio shows that poor debt management among Malaysians which lead to the insolvency problem among Malaysia as reported by Malaysia Department of Insolvency (MDI) (2013) stated that there was a total of 122,169 people involved in bankruptcies between 2007 and 2013. In terms of age, the highest percentage of those who declared bankruptcy in 2012 were working adults aged between 35 and 44 years (36.6%) and 45 to 54 years (29.1%).

Latest updates based on Malaysian Financial Literacy Survey 2020 reported by Ringgit Plus, compared to year 2019, there are no improvement toward Malaysians' personal financial. The lack of retirement planning among Malaysians remains as big challenges. This is despite the slight betterment in the number of Malaysians who manage to save every month, in addition to 76% claiming that they are in control of their money. The survey has also discovered the effect of Covid-19 on the spending behaviour among Malaysians, increased preference for cashless payments and online transactions considered as trends since Covid-19 hit Malaysia.

LITERATURE REVIEW

Spending Behavior

Sekar and Gowri (2015), explained the financial behavior is known to be influenced by financial attitude, which is the opinion of the individual about the belief in financial planning and the inclination towards saving and spending the money. Generally, the factor that influences financial literacy is financial behavior which includes the spending habits. It refers to how individuals allocate

their money, such as the immediate payment of bills, framing proper planned budgets, monitoring it, and saving habits. Specifically, previous study shows that B40 group spends almost two thirds of their total expenditure on non-alcoholic food and beverages, housing, water, electricity, gas, fuel, and transportation (Rashid et al., 2018). According to *Household Expenditure Survey Report* released by Department of Statistics Malaysia in 2019, Malaysian household spends 69.1% in four main groups which include, housing, water, electricity, gas, fuels, non-alcoholic, restaurant and hotel. On the statistical report, the highest contributors to overall consumption were for housing, water, electricity, gas and fuels (24.0%), followed by food and non-alcoholic beverages (18.0%), transportation (13.7%), restaurant and hotels (13.4%).

Besides, Alekam, Salleh and Mokhtar (2018) in their study on the spending behavior among young generation in Malaysia found that the young generation are among the highest age group that have fallen in the critical problems of the bankruptcy issue. The young generations are becoming increasingly reckless with their spending habit. They tend to value money less compared to the older generations who are not so much into the materialistic world. As the standard of living in Malaysia has improved noticeably, the young generations are granted with greater liberty to shop and make their own consumption choice as a result Malaysia faced changes in lifestyle and spending trend. This finding has been supported by Loke (2015), which stated that young generation who live beyond their means and they do not have proper financial planning or a well-organized effort are needed to change their attitude. Since even those with higher financial knowledge face financial difficulties, it is important to possess appropriate attitude to evaluate the effort and outcomes on the spending behavior by themselves.

On the other hand, Sozou (2016) who performed the study on individual characteristics, previous personal finance education and the levels of financial literacy among college population mentioned that smart financial planning such as controlling the spending, budget, and saving money for emergencies can help many households to enjoy better lives even facing financial shocks. Financial education can play a powerful role in getting to overcome these situations since financial literacy can influence an individual in making the financial choices. On the other hand, Haws, Bearden, and Nenkov (2012) found that those who had lower consumer spending self-control were more likely to make impulsive purchases and pay more for the same product. Bankruptcy, using payday loans, over indebtedness, and low or no savings has been observed as consequences of low spending control, stress and mental health problems were additional consequences (Alekam et al., 2018). In addition, Khalid and Ismail (2019), who performed the study on undergraduates' spending behavior indicated that five most incurred expenses were for hygiene products, study materials, telecommunications products and services, clothing and health products. The results also found that, the spending behavior among undergraduates may be influenced by peers, ethnic and faculty based on related program of studies.

Furthermore, Yong, Yew, Wee (2018) stated that, the financial attitude on spending has a strong relationship with behavior. Based on Theory of Planned Behavior (TPB), an individual always assess outcomes of a behavior which is determined by his attitude on which he or she has a perceived control over. Therefore, youths must be well communicated about healthier outcomes of possessing better financial knowledge and proper personal finance management. Subsequently, individual's attitude of over spending would affect his or her literacy and behavior towards finance leading to the state of poor financial planning which has currently become the main difficulty in addressing this issue. The young generation should have adequate financial knowledge in order to make the best possible financial decision on saving, investment and daily expenses. Apart from that, recent study performed by Ali, Abu, Sani and Sallim, (2020) emphasized that, the spending behavior of B40 group not only depend on the amount of income but also influenced by the number of households. They found that the number of household member can be one of the variables in identifying poverty category as B40, M40 or T20. It can be seen that the higher the number of household member, the higher the total expenses. Moreover, the study also found that, ethnic can be classified as one of the overspending factors.

Saving, Investment and Retirement Behavior

According to Robb, Babiarz and Woodyard (2012), individual will react based on their individual financial well-being, and not influence by others factors. For that reason, capturing the relationship between knowledge and financial behavior is important. According to Bordon, Lee, Serido

and Collins (2008), effective financial act was recorded to have no significant relationship. In additions, other study shows that those who learns on the consumer behavior during elderliness, will affects the person decision making (Lusardi and Mitchell, 2014).

Moreover, Mahdzan and Tabiani (2012) state that, a negative attitude in saving behavior is found to those are not save their money regularly, as contrast to those who always save. Individual always save their money regularly are related to have positive attitude. For instance, the action of putting aside a portion of money for saving will lead to developed higher chance of positive saving attitude. As many studies examined the financial literacy and financial act, Baker, Bettinger, Jacob, and Marinescu (2018) and Greene (2014) reported that the higher financial awareness among individual will resulted a positive financial behavior. In addition, Chavali, Mohan Raj, and Riyaz (2021), also found a positive relationship between saving and investment among 150 Indian respondents.

Fisher (2010), conducted a Survey of Consumer Finances in the year 2007 found that women are barely to save their money as compared to men. Contrarily, Sabri, Reza, and Wijekoon (2020) found that Malaysian working women are good on their saving and investment behaviors and able to reach better financial well-being. Saving behavior always motivated by a purpose, goal and motive for saving (Schreiner, Clancy, and Sherraden, 2002). Schreiner et al., (2002) stated that owning a tangible item such a house have motivated individual to save more along with intangible purpose like retirement. In addition, Fisher and Anong (2012) point out that household were likely to save more if they held emergency savings or retirement saving motives. Remarkably, in 2015, Annual report of Malaysia Department of Insolvency has reported that the bankruptcy of an individual averagely per day was 51 and it was reported 83 cases was registered per-day (Malaysia Department of Insolvency, 2016).

There is some negative characteristic that influence the saving behavior shown by previous research includes willingness to save, capacity to save and discouragement (Katona, 1951, 1979). Suffering with the health issues, deficient income, loss of income or unstable income has led to saving difficulties (Turnham, 2010). According to Mills and Amick (2010), economic shocks, unstable income and low income presented the barriers to save money. Financial stress is always related to with inability to save for contingency, meet the monthly commitment or to pay unexpected hospital bills (Prawitz et al., 2006). Additionally, Hayhoe and Gutter (2012) stressed that household with low to moderate income are always related towards anxiety about money.

In some type of segments, there are different ways of saving for those with low income and low education level as compare with other ordinary groups. For instance, those who have low-income level and lack of trust to financial institution always kept their money at house instead deposit their money to bank account (Turnham, 2010). A study from Okech, Mimura, Mauldin and Kim (2013) found that, only a third out of the sample of poor respondents is motivated to save their money and having some income to save. Limited financial literacy is always possessed by the lower income individual and most of them do not have any plan for investment and retirement (Lusardi, 2008). Ajay and Sharma (2016) state that the awareness on the investment and financial literacy is always influence the decision making process for every individual. It is suggest that, financial knowledge and investment behavior must be together with financial knowledge for every individual (Renaldo, Sudarno and Hutahuruk, 2020) Moreover, financial decision making is one of the important tools that influence individual on financial well-being and financial competence (Janor, Yakob, Hashim and Aniza, 2016).

Debt Management

In measuring financial well-being, debt is considered as a special indicator to be used (Iramani & Lutfi, 2021). According to AKPK Financial Behavior Survey (2018), debt management also known as loan management skills. Debt management aspects are included level of debt, composition of loan taken, attitude towards paying loan installments and credit card payment. Financial freedom is a stage where debt is not a problem for people (Joremi, Zakaria, & Bakar, 2021). Selvia, Rahmayanti, Afandy, & Zoraya (2021) has stated that debt is one of the important factors that determine a person's economic situation. The survey by AKPK (2018) found that debt management is the highest level of financial behavior among Malaysian working adults and 3 out of 10 Malaysian working adults need to borrow in order to buy their basic needs and resulted high indebtedness. Malaysians have willingness to use debt in order to meet their personal comfort. They decided to use debt even though they know

that it is beyond their needs. People could spend almost half of the household income on debt. According to this situation, it will cause them to have slightly more than half of their household income to meet their everyday living expenses (Rashid, Sulaiman and Rahizal, 2018). Rashid et al. (2018) study resulted a positive and significant relationship between the total household debts with total household expenditure.

The ability to pay back the borrowings on time will increase as the income for individuals increased in value (AKPK Financial Behavior Survey, 2018). Thus, debt management is an important skill needed by low-income people as they have a tendency to spend more money on non-basic needs by using debt. However, according to Ngadiman, Tayok, Yacoob, & Wahid, (2018), bottom 40% (B40) are expected to finance their basic needs and fund daily basic costs by using debt. It is clearly showed that people get used with borrowing as a solution for financial problems. According to Ngadiman, Rahim, Yacoob and Wahid (2018), low-income people believe that debt is something that is unavoidable. As debt is a need in order to solve financial problems, it will increase their usage of debt. Their study found a significant relationship between self-esteem and purchase behavior of tahsiniyyat goods with loan and also their intention to increase debt among low-income people.

Supported by Bridges & Disney (2004), borrowing by the families to cover existing repayments will cause indebtedness to cumulate over times and low-income families will be the most affected of this situation. They might be at the most risk of persistent unsustainable indebtedness resulted from excess credit. Kim, Wilmarth & Greene (2017) study on debt profile of low income households before and after the Great Recession by using the amount of debt, debt-to-income ratio and debt delinquency. Their study showed households have high possibilities to hold debt as their income level is increasing. Their study also found that households that are in the most severe poverty category have difficulty to follow debt-to-income guidelines, higher debt and debt delinquency problems.

On the other hand, Bridges & Disney (2004) stated that there is 'hierarchy' of credit arrangements according to cost of borrowing or by ease of access. These 'hierarchy' is a standard model of household behavior which can be a guideline for the borrower to minimize the cost of borrowing. However, this financial strategy is found to be potentially impractical for low income families in UK and proved with significant evidence of debt problem among low-income families in UK but the arrears on debt are not strongly persistent.

Even though the indebtedness is accelerating in percentage used by the Malaysian Working Adults, but they still have strong desires to escape from the indebtedness (AKPK Financial Behavior Survey, 2018). Godwin and Koonce (2015) mentioned that debt management can be one of the measurements of a person's attitudes towards financial planning. Hashim and Syazana (2017), Malaysians who are enrolled into Debt Management Programme under AKPK had a poor financial planning. Poor financial planning is the main reason of default on their debt. Individuals have high tendency to spend more than their means if they do not have a proper financial planning. In such situation, they will spend by using the build-up substantial debt. Mahzan, Zainudin, Sukor, Zainir, & Ahmad (2019) conducted a study on the determinants of Subjective Financial Well-Being for B40, M40 and T20 had agreed on debt management included as one of the factors under financial behavior that can contribute towards a stable financial security.

IMPLICATIONS AND DISCUSSION

Undoubtedly, the B40 income group were struggled in managing their financial and daily life. With limited sources of income and high coverage of cost of living considering as major concern to sustain in future. It is important for government to ensure B40 group to have better financial literacy and knowledge and at the same time to monitor a good financial behavior such as spending pattern, savings, retirement & investment, and debt management.

Precisely, B40 income group had become the central focus of the government in improving their standard of living by executing number of incentives to this targeting group. With regards to accelerating cost of living due to the rise in inflation and etc., government through the yearly budget announced a specific allocation for B40 in term of giving out cash such as Bantuan Sara Hidup (BSH), and other type of incentives including Skim Peduli Kesihatan for B40 Group (PeKa B40).

Unfortunately, this is found to be ineffective ways to enhance their living status unless to examine their level of financial behavior in term of spending, savings & investment, and debt management.

From the other perspective, most recent studies highlighted on how literate this income group in financial planning, their awareness of having excessive debt versus less saving and investment, but very less studies focus on the behavior of an individual in planning their financial. Furthermore, it is expected that with a better implementation of the policies and incentives, the cost of living of B40 income group could be lessen and their standard of life could be improved for future financial well-being. Hence, more study needs to be conducted to investigate mainly on the behavior of B40 income group in possessing a proper financial management toward a better future well-being and reducing poverty rate.

CONCLUSION

The cost of living has become a major concern among Malaysian particularly among the bottom 40% household. The B40 households' main concern and focus is on the rising cost of affordable housing, education and healthcare. In particular, the removal of fuel subsidies, weakening global economy, tumbling currency has exacerbated the rising cost of living, which is bound to be the largest concern among B40 group.

On the other aspect, B40 income group are more likely to face financial difficulties and heavy debt problem during crisis. In these circumstances, financial planning is therefore critical, as many B40 income group have noticed that they are not adequately prepared for it. Clearly that they need to mitigate the financial distress they might face in the future. Thus, long-term solutions are necessary to fix the problem with appropriate information and guidelines provided by the regulatory authorities and supervisory agencies. In summary, the interventions by the government, financial institutions and agencies are necessary to enable B40 income group to face the increasing cost of living.

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BAFE065: THE RELEVANCE OF KEY AUDIT MATTERS – A REVIEW OF LITERATURE

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Abstract

The increasing demand for transparency in the work carried out by auditors has led to the call for increased disclosures in annual reports. In response to this, the International Auditing and Assurance Standards Board (IAASB) developed the Key Audit Matters (KAM) in which additional disclosures were required from auditors for areas such as higher risks of material misstatements, significant judgements and significant events. This revision to the auditor reporting standard was introduced in 2015 with an effective date of December 2016. This study seeks to review the recent academic research conducted on KAM. A total of 31 research articles published between 2018-2021 were reviewed. It was found that there are many opportunities for future research on this topic, given its relatively recent implementation, and the mixed findings based on existing literature.

Keywords: Key Audit Matter, Audit Report, Audit Quality

INTRODUCTION

The global accounting standard setters and regulators have recently introduced additional audit report requirements to meet stakeholders' demand. The Public Company Accounting Oversight Board (PCAOB) and International Auditing and Assurance Standards Board (IAASB) have recently initiated expanded audit reporting requirement to enhance the transparency and informational quality of audit reports (PCAOB, 2017; IAASB, 2015). One of the significant improvements is the introduction of key audit matters (KAM) in the audit report. In general, KAM refers to those matters that require greater attention from the auditors during the audit work (IAASB, 2015). In determining KAM, auditors consider areas of increased material misstatement risks, areas requiring significant judgement and any effects of significant events or transactions. The KAM are useful for stakeholders, especially investors, as they enhance audit quality and reporting, on top of encouraging better corporate governance (ACCA, 2018).

This study seeks to review the recent research literature on the informational value of KAM to the various stakeholders, in particular the shareholders, directors, and auditors.

THEORETICAL FRAMEWORK

This review utilizes the stakeholder theory to relate the informational relevance of KAM disclosure to shareholders, directors, and auditors. The stakeholder theory suggests that auditors serve as agents to protect the interests of various stakeholders, including the firms' shareholders (Jensen and Meckling, 1976). As the various stakeholders are often not involved in the day-to-day operations or management of the firm, they rely on the audit findings, among others, in the decision making process. The enhanced auditor report requiring the disclosure of KAM is positively welcome by investors (Christensen et al., 2014) and financial statement users (Sirois *et al.*, 2018). The KAM disclosures also benefit auditors against litigations for undetected misstatements (Brasel et al., 2016).

METHODOLOGY

This structured literature review focused on KAM as promoted by IAASB. International database *Google Scholar* and *EbscoHost* are used to search for relevant journal publications between the year 2018 to 2021, to reflect the recency of this study. The search term "key audit matter" was

used, in combination with “reporting quality”, “stakeholders”, “shareholders”, “auditors”, and “directors”. Only English academic journals, excluding conferences proceedings and periodicals, are selected for the purpose of this review. This resulted in a total of 31 academic journal articles being reviewed, covering both archival and experimental (interview-based) research conducted in various geographical regions. Table 1 shows the summary of journals cited in this study in relation to the stakeholders, countries investigated, and research approach.

Table 1: Summary of Journals Cited

Shareholders	Directors	Auditors
By journal titles		
Accounting in Europe	International Journal of Auditing	International Journal of Auditing (3)
European Accounting Review	Corporate Social Responsibility and Environmental Management	Asian Review of Accounting
Accounting, Organizations and Society	Journal of Applied Accounting Research	Meditari Accountancy Research
International Journal of Auditing	Emerging Markets Finance and Trade	Journal of Applied Accounting Research
Accounting & Finance		Journal of Business Ethics
International Review of Financial Analysis		Journal of International Accounting, Auditing and Taxation
Emerging Markets Journal		Pacific Accounting Review (2)
		Managerial Auditing Journal (3)
		The British Accounting Review
		Accounting Horizons
		Accounting and Management Information Systems
		Journal of International Financial Management & Accounting
		Accounting in Europe
		Auditing: A Journal of Practice & Theory
		Business & Economic Horizons
7 titles	4 titles	20 titles
Total: 31 titles		
By countries investigated		
Germany, United States, United Kingdom, Canada Australia, China, Turkey	Germany, United Kingdom, Taiwan	Jordan, China, South Africa, United Kingdom, Thailand, Europe, UAE, Finland, France, Netherland, Australia, Turkey, Germany, United States, Czech Republic, Poland, Romania, New Zealand
By research approach		
Experimental: 5 Archival: 2	Experimental: 1 Archival: 3	Experimental: 8 Archival: 12

ANALYSIS OF LITERATURE REVIEW

SHAREHOLDERS

The results of the seven research articles on the informational relevance of KAM to shareholders were varied in regard to the value of KAM reporting to shareholders. Moroney *et al.* (2021) found that KAM increases investors' perceived value of audit reports while Kelton *et al.* (2018) concluded that KAM increases shareholders' perception on management's credibility. This is echoed by Ong *et al.* (2021) and Zhai *et al.* (2021), who found that KAM reporting is informational and helpful to investors. On the other hand, some researchers found no increased value for shareholders. Köhler *et al.* (2020) found that KAM has no communicative value to investors without professional investing background. This finding is consistent with Coram (2021), who found that KAM has no increased informational value to shareholders.

There is a lack of archival studies on KAM's impact on shareholders, as reflected in Table 2. Most of the research were conducted through interviews (experiment). As interviews come with an inherent risk of response biases, future studies could focus on archival research. Future research should focus on shareholders' reaction towards KAM disclosure in a cross-country context, and its effect towards the equity market, which is a common proxy for shareholder reaction.

Table 2: Summary of Research on KAM's Effect on Shareholders

No	Journal Title	Author	Country, Sampling	Research Approach	Dependent Variable	Findings
1.	Accounting in Europe	Köhler et al. (2020)	Germany, UK, US, Canada. 89 members of professional bodies.	Experiment (Interview)	Investor judgements	KAM has no communicative value to non-professional investor
2	European Accounting Review	Moroney et al. (2021)	Australia. 198 graduate students.	Experiment (Interview)	Credibility of audit report	KAM increase investors' perceived value of audit report
3	Accounting, Organizations and Society	Kelton et al. (2018)	America. 195 participants.	Experiment (Interview)	Investment likelihood	KAM leads to increased perceived management credibility
4	International Journal of Auditing	Coram (2021)	America. 240 non-accounting participants.	Experiment (Interview)	Audit expectation gap	KAM has no increased informational value to shareholders
5	Accounting & Finance	Ong et al. (2021)	Australia. 181 Masters student.	Experiment (Interview)	Number of KAM, readability of KAM	Readable KAM helpful to investors
6	International Review of Financial Analysis	Zhai et al. (2021)	China. 3375 firm-year observation.	Archival	Stock price	KAM reduce information acquisition cost
7	Emerging Markets Journal	Genç et al. (2021)	Turkey. 18 companies.	Archival	Number of KAM, size of firm	Firm-level characteristic affect KAM disclosure

DIRECTORS

Past research indicates that KAM reporting has a positive relation with directors. Gold *et al.* (2020) found that KAM disclosures positively impact managers' reporting behaviour, in the sense that the presence of KAM reporting reduces the tendency of managers to make aggressive finance reporting decisions. Velte (2018; 2019) found that KAM readability improves when the proportion of directors with financial expertise increases, and that the presence of women audit committee members increases the readability index of KAM reports. In a study conducted in Taiwan, Lin *et al.* (2020) found that firms tend to disclose higher number of KAM in accordance with increased operating risks after the purchase of directors' liability insurance.

Most of the past research were based on archival data, as reflected in Table 3. The limitations in the current studies suggest that future research could focus on various board variables and diversity characteristics, such as the level of directors' independence, industry experience, educational background and professional affiliations. In addition, the behavioural aspects of directors, such as risk appetite, could also be investigated.

Table 3: Summary of Research on KAM and Directors

No	Journal Title	Reference	Country, Sampling	Research Approach	Dependent Variable	Findings
1.	International Journal of Auditing	Gold et al. (2020)	Germany. 104 financial statement preparers.	Experiment (Interview)	Managers' reporting behaviour	KAM disclosures positively impact managers' reporting behaviour
2.	Corporate Social Responsibility and Environmental Management	Velte (2018)	United Kingdom. 660 firm year on London Stock Exchange	Archival	Readability of KAM	KAM readability increases with higher proportion of female members in audit committee
3.	Journal of Applied Accounting Research	Velte (2019)	United Kingdom. 1319 firm-year on London Stock Exchange.	Archival	Readability of KAM	Financial and industrial expertise increase readability of KAM
4.	Emerging Markets Finance and Trade	Lin et al. (2020)	Taiwan. 1708 firm-year observation.	Archival	Liability Insurance	Liability coverage of managers increases KAM reporting

AUDITORS

For the research on the interaction between auditor characteristics and KAM reporting, there is a good balance between archival and experimental research, with 12 out of the 20 auditor related research approaching the research through archival data. Of the eight experimental research, five involved interviews of auditors.

The research on auditor characteristics and KAM reporting yield mixed results. Based on interviews conducted with auditors, it was found that auditors are concerned with the increased cost and liability following the requirement for KAM reporting (Segal, 2019). An interview on 174 auditors conducted by Pratoomsuwan and Yolrabil (2020) suggests that KAM disclosures does not help auditors reduce liabilities. Rautiainen *et al.* (2021) interviewed 283 CPAs in Finland and found that KAM reporting does not affect audit quality. In contradiction, archival studies on firms by Zeng *et al.* (2021) and Li *et al.* (2019) found that KAM increases audit quality.

Some studies investigated the types of KAM reported by firms. Abdullatif *et al.* (2020) found that most auditors tend to report industry-specific KAM, while Sierra-García *et al.* (2019) found that bigger audit firms tend to report entity-specific KAM. Cığer *et al.* (2019) found that the most frequently reported KAM are those related to revenue recognition.

Further research in respect of auditors could focused on the aspect of auditor behaviour and accountability. Auditors may be cautious in reporting negative KAM in view of the adverse consequences, thus the availability of auditors' legal incentive towards KAM reporting could lead to greater detailed reporting. It is also interesting to find out if cultural context affects the tone and readability of KAM reporting, pursuant to the finding by Abdelfattah *et al.* (2020) that female audit partners use less optimistic tone in KAM reporting.

Table 4: Summary of Research on KAM and Auditors

No	Journal Title	Reference	Country, Sampling	Research Approach	Dependent Variable	Findings
1.	International Journal of Auditing	Abdullatif et al. (2020)	Jordan. 18 audit partners.	Experiment (Interview)	Number and types of KAM	Firms tend to report industry-specific KAM than entity-specific KAM
2.	Asian Review of Accounting	Lau (2020)	China. 351 listed firms.	Archival	Accounting estimates, measurement uncertainties	KAM serves as red flag about accounting estimates
3.	Meditari Accountancy Research	Segal (2019)	South Africa. 20 auditors.	Experiment (Interview)	Intention, risks and transparency of KAM	Increased cost and liabilities concerns auditors; clients ignore KAM
4.	Journal of Applied Accounting Research	Pratoomsuwan & Yolrabil (2020)	Thailand. 174 Auditors.	Experiment (Interview)	Assessment of auditor liability	KAM disclosures does not help reduce auditor liability
5.	Journal of Business Ethics	Abdelfattah et al. (2020)	United Kingdom. 1373 firm-year on London Stock Exchange.	Archival	Number of KAM disclosed	Female audit partners use less optimistic tone in KAM reporting
6.	Journal of International Accounting, Auditing and Taxation	Pinto et al. (2020)	Europe. 135 companies on FTSE100, CAC40 and AEX 25.	Archival	Disclosure of KAM on accounting standard, readability of KAM	Precise accounting standards lead to readability of KAM

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7.	Pacific Accounting Review	Wuttichindanon & Issarawornrawanich (2020)	Thailand. 996 audit reports.	Archival	Number of KAM	Auditor litigation risk positively associated with number of KAM
8.	Managerial Auditing Journal	Kitiwong & Sarapaivanich (2020)	Thailand. 1519 firm year observations.	Archival	Restatement of financial statements	Commonly disclosed KAM are not associated to audit quality
9.	The British Accounting Review	Sierra-García et al. (2019)	United Kingdom. 400 firm-years.	Archival	Number of KAM	Bigger firms have more entity level risk KAM
10.	Accounting Horizons	Zeng et al. (2021)	China. 5306 firm-years.	Archival	Audit quality	KAM increases audit quality
11.	Accounting and Management Information Systems	Barghathi et al. (2021)	UAE. 13 auditors.	Experiment (Interview)	Audit quality	KAM enhances audit quality
12.	Managerial Auditing Journal	Rautiainen et al. (2021)	Finland. 283 CPA.	Experiment (Interview)	Audit Quality	KAM does not affect audit quality
13.	Journal of International Financial Management & Accounting	Pinto & Morais (2019)	UK, France, Netherland. 142 firms.	Archival	Number of KAM	Positive relation between audit fee and number of KAM
14.	Accounting in Europe	Woudenberg et al. (2021)	Netherlands. 593 firm years.	Archival	Number and subject of KAM	Heterogeneous KAM reporting affects informative value
15.	Managerial Auditing Journal	Nguyen et al. (2021)	Australia. 20 audit market stakeholders.	Experiment (Interview)	Audit quality	KAM does not affect audit quality
16.	International Journal of Auditing	Kend & Nguyen (2020)	Australia. 3390 firm-year annual reports.	Archival	Number of KAM	Number of KAM affected by size of auditor
17.	Auditing: A Journal of Practice & Theory	Vinson et al. (2019)	America. 163 jury-eligible participants.	Experiment (Interview)	Negligence and verdict	Removing KAM after multiple years increases guilty verdict
18.	International Journal of Auditing	Asbahr & Ruhnke (2019)	Germany. 122 auditors.	Experiment (Interview)	Sceptical judgement	KAM reporting reduces audit adjustments

19.	Business & Economic Horizons	Ciğer et al. (2019)	Turkey, Czech Republic, Poland, Romania. 318 manufacturing public companies.	Archival	Number and types of KAM	Revenue is the most widely reported KAM
20.	Pacific Accounting Review	Li et al. (2019)	New Zealand. 144 firms.	Archival	Audit fees, audit quality	Enhanced audit reports improve audit quality and increases audit fees

CONCLUSION AND RECOMMENDATIONS

This study seeks to determine the usefulness of enhanced auditor reporting to various stakeholders, through a review of academic literature. Most of the recent literature suggest that the KAM reporting yield positive outcomes. In the process of providing stakeholders with value-added information about the audit work, KAM disclosures improve transparency, audit quality and firm governance.

Overall, to address the current research gap on KAM, future empirical research could be carried out in the Asian region, in particular for developing countries. A multi-stakeholder analysis would also shed light on the usefulness of KAM reporting and how the reporting could be further improved to meet the heterogeneous needs and demands of various stakeholders.

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BAFE076:
FINANCIAL RESILIENCE: MANAGING FAMILY AMIDST PANDEMIC

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Abstract

Many households are suffering serious financial problems after more than 18 months of restrictions imposed due to Covid-19 pandemic. Job losses, salary cutbacks, and other negative consequences are putting a burden on household budgets. Although the government and non-governmental organizations (NGOs) provide different types of financial support, particularly to the B40 group, it is typically insufficient to restore pre-crisis income levels. In contrast to financially resilient households, which are less likely to experience hardship during a slump and more likely to recover swiftly when circumstances begin to improve. Financial literacy, which encompasses a set of abilities to deal with financial difficulties, is the major reason that allows family institutions to manage household costs and amass sufficient funds for emergencies. Thus, this study focuses on the financial problems that households are suffering as a result of the current Covid-19 epidemic. To what extent does financial literacy help managing household finances when compared to those who do not have such knowledge? The findings of this study were obtained using an online survey in which 126 participants volunteered to answer questions about financial resilience. The findings demonstrate that people's financial resilience varies, for example, whether they are trying to make ends meet, have savings buffers to handle unforeseen shortages, or are facing financial stress. At the same time, certain vulnerable groups have been hit worse than others. This study recommends that governments and universities invest in financial literacy that makes societies more resilient to crises like the current Covid-19 pandemic.

Keywords: Financial Resilience, Financial Literacy and Family Institution

INTRODUCTION

The Covid-19 pandemic has taken a toll on everyone around the globe, both directly and indirectly. According to World Health Organization (2020), the pandemic has affected millions and caused hundreds and thousands of death ever since it was first detected in December, 2019. This have led to a major economic struggle and the overall human wellbeing have decreased tremendously (Rajkumar, 2020). As the pandemic continue to rage on, the world economy landscape continues to go through major changes. With more and more people bound to their homes due to limited social activities, there is a massive transformation to the economic activities in which people are moving towards a digital economic transformation compared to the previous physical ones. A lot of people are dealing with issues such as sudden unemployment, pay cuts, inability to make ends meet, paying bills on time and many other financial issues (Fisher, et al., 2020; Orgilés, et al., 2020). Economic pressure and hardships are not standalone problems. These economic obstacles spill over many other aspects of families' well-being. According to Prime, Wade and Browne (2020), even for a financially robust country like Finland, the 1990's economic recession impacted Finish families badly "with spill over effects to parental mental health, marital quality and parenting, and subsequent child mental health problems" (Solantaus, Leinonen, & Punamäki, 2004 as cited in Prime, Wade, & Browne, 2020, p.5). Ponnet (2014) revealed that carers' well-being is influenced by their families' economic stability prior to Covid-19. According to Ponnet's (2014) research, moms in the lower income bracket have poorer mental health than mothers in the medium income bracket because the dread and repercussions of a lack of financial resources haunt them more. Financial stress has also

been associated with “higher aggression between siblings and poorer sibling relationships” (Kretschmer & Pike, 2009; Tip-pett & Wolke, 2015 as cited in Prime, Wade, & Brown, 2020, p.5).

The Ringgit Plus Malaysian Financial Literacy Survey 2019 (RMFLS 2019), in partnership with Visa International, revealed that Malaysians are unable to manage their finances well. The survey indicated 53 percent of respondents will not be able to survive more than three months with their current savings. The survey also revealed that Malaysians are unable to save money as 43.4 percent end up spending all their earnings and some even spend more than they earn. In short, people are in denial of their financial reality. Through the survey, it was discovered that Malaysians despite knowing how vital it is to know about financial management, do not take any pro-active measures to do something about their financial affairs. 38 percent acknowledge that their Employees Provident Fund (EPF) savings will not sustain them during their retirement and sadly, they do not even have a plan to overcome the financial difficulty they might face in future. 37 percent respondents of the survey earns less than RM2000 and are therefore unable to save anything while only 32 percent of respondents know what is a credit score and check it regularly (Ringgitplus.com, 2019). This survey was done prior to the pandemic and it is obvious to see how Malaysians were already reporting poor financial literacy and resilience. Based on the survey done by Credit Counselling and Debt Management Agency (AKPK) conducted during the pandemic in 2020 about financial literacy among Malaysians, it was revealed that Malaysians reported an increase on their financial stress by 35 percent compared to 2019. 65 percent of the respondents admitted that their financial stress have affected their job performance while 41 percent stated that their financial stress has had an impact on their mental health. The survey further revealed that the high cost of living in Malaysia followed by low income and savings are considered among the main reasons of financial stress among Malaysians.

Respondents aged 30-39 years old reported highest financial stress. This is understandable as people in this age bracket are newly married with young children and loans to service while respondents aged 29 and below stated they were worried about their low income level and overspending. This is a worrisome trend. The habit of overspending despite earning a minimal salary indicates that the youngsters are aware of their limited spending capacity, but yet indulge in it, raking further debts and once they are married and have children, the debts would just keep piling. This finding reveals how important it is for Malaysians to not only be financial literates, but also take pro-active measures to ensure that their finances are managed well. Interestingly, the survey revealed a gender difference in which men reported to suffer from financial stress more compared to women. Though women were revealed to cope better with financial stress, they were also reported to be worried about overspending. Researchers in the current study believes this could be due to the fact that despite working, women spend more time doing house chores and caring for the kids and are therefore more aware of all the things that need to be purchased and is constantly worried and juggle between what is necessary for their house and kids and what is not. Researches in the current study also opine that men generally earn and hands the money to the women to manage the household and therefore women generally feels a higher sense of responsibility to ensure that the family is able to manage within that amount of money they have. 50 percent of the respondents reported that they were not confident with their abilities to manage financial issues while 46 percent were not sure if they are capable to deal with financial stress. Azaddin from AKPK were reported saying that “financial stress caused by the Covid-19 pandemic is closely related to mental health issues” (Yahoo News, 2021). An important point made by Azaddin in the news was that employers need to play a more active role in ensuring their workers well-being during this pandemic time. This is simply because we are all coped up at home for more than a year now with less physical communication with the outside world.

Although the government and non-governmental organisations (NGOs) are doing all they can to provide Malaysians all sorts of financial and non-financial aid to storm through this pandemic time, especially the B40 group, it is truly difficult to return people to the normalcy before the pandemic. We have to acknowledge this new norm of living is the way of life moving forward. Based on what have been discussed above, it is obvious that financial issues are able to affect families on a personal level. Hence, it is vital to discover how important financial literacy is and how can sound knowledge of financial literacy aid in making better financial decisions.

Research Questions

Thus, this study focuses on:

1. Are households suffering from financial problems as a result of the current Covid-19 pandemic?
2. To what extent does financial literacy help managing household finances when compared to those who do not have such knowledge?

Both of these research questions are capable of projecting the reality of living in Malaysian society, particularly in terms of economics and the direct impact of the Covid-19 pandemic. The study's findings are significant because they serve as a reminder of the importance and relevance of financial literacy in acting as a rescue agent from imprudent financial difficulties.

LITERATURE REVIEW

According to Munoz-Murillo et al., (2020), financial literacy can be defined as a basic need which one needs to possess in terms of knowledge and ability so that one is able to manage his or her finances well in order to avoid any bad or poor financial decision making. One can take the first step about being financially literate by having a positive financial attitude. This simply refers to the ability an individual possess such as a good state of mind or even opinion or evaluation of one's personal finances. A good financial attitude will also affect a person's financial behaviour. An example of this was demonstrated in studies conducted by Ramli et al., (2013) and Younas et al., (2019) of the people in Indonesia in which they concluded that Indonesians were mostly consumptive in nature and this attitude led to a poor financial behaviour. The respondents admitted to having no savings, or any sort of future or emergency budget planning or even investment. The general public at large normally tend to have issues when it comes to managing their personal financial assets. According to the household income estimates and incidence of poverty report by Department of Statistics Malaysia (2020), the mean for Malaysian household income declined by 10.3 percent due to the Covid-19 pandemic. The department also reported an increase on the monthly household consumption expenditure, from RM4,033 in 2016 to RM4,534 in 2019. This shows an increase of 3.9 percent per annum. There is clearly an increase in the expenditure and researchers in the current study cannot help but wonder how families are managing their household expenditure during this Covid-19 pandemic, especially if they are experiencing a pay cut or a sudden job retrenchment. Henceforth, it is important to have basic knowledge or intelligence to manage finances well so that we are able to effectively and efficiently look after our overall well-being since financial literacy is closely related to our mental health well-being. We should make full use of technology to get all sorts of information before making any sorts of financial decision. Researchers in the current study strongly believe that the Malaysian education system should incorporate financial literacy as a formal subject, just as stated by K. C. Wong, the chief executive officer of Credit Bureau Malaysia (CBM) in a news report by The Star (2020):

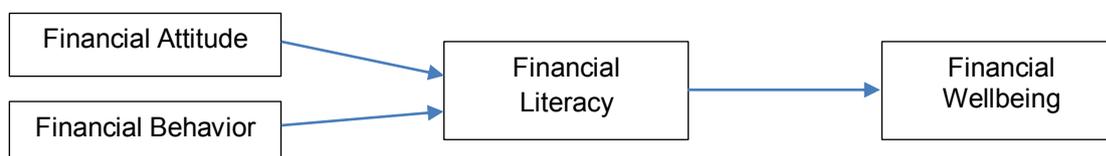
"A structured syllabus on financial literacy crafted by subject matter experts is needed to instil the art of managing money – spending, saving, investing and borrowing. To ensure continuity, it is best that financial literacy education starts from primary school, stretching to secondary school and university. Money has become so important in urban areas. Controlling spending and saving is no longer enough"
(The Star, 2020)

Multiple previous studies indicated that a positive financial attitude is strongly co-related to financial literacy (Ameliawati & Setiyani, 2018; OECD, 2013), financial planning (Agarwal, Amromin, Ben-David, Chomsisengphet, & Evanoff, 2015; Atkinson & Messy, 2012; Lusardi & Mitchell, 2011) and positive financial attitude can also lead people to save more (Agarwal et al., 2015; Atkinson & Messy, 2012). Financial attitude is something a person requires in their daily lives. Zulfiqar and Bilal (2016) also discovered how financial wellbeing is influenced by a person's positive financial attitude. Financial behaviour allows us to see how a person behave in a financial setting. Psychology such as emotions, traits, or even preferences can greatly persuade a person or even a company's financial decisions. Individuals who are able to make proper decision when it comes to their personal finances would suffer less or none financial problems in future, hence displaying a positive financial behaviour. Researchers in the current study too would like to discover how long can the respondents survive with their savings during this Covid-19 pandemic, indirectly revealing their financial behaviour. Multiple

studies in the past have indicated that a positive financial behaviour births positive financial well-being (Ameliawati & Setiyani, 2018; Gutter & Copur, 2011; Mokhtar & Husniyah, 2017; Younas et al., 2019).

Based on the literature discussed above, researchers in the current study decided to use Yuesti, Rustiarini & Suryandari's (2020) conceptual framework as it emulates what the current study is all about:

Figure 1: Financial Literacy Conceptual Framework



Source: Yuesti, Rustiarini & Suryandari (2020)

According to Coskuner (2016), one's age is no determinant to understand money management and sound financial decision making, so much so that financial literacy can be considered a core skill which is required in today's time. Financial literacy is key in impacting financial wellbeing which can in return make one to have sound decision making (Sabri & Zakaria, 2015; Zulfiqar & Bilal, 2016). As individuals living in the modern time, it is vital for us to have proper financial literacy. This is because technology advancement have eliminated the geographical distance and made all of us connect in the form of a global village. Today, we are able to purchase whatever we want, from any part of the world at the mere click of a finger. We hear so many cases yearly about how certain individuals get cheated online due to all sorts of scam or how moneylenders or better known as "ah longs" are busy harassing people due to their inability to pay back the money they have borrowed. Surveys quoted above clearly shows how youngsters are worried about their salaries but are yet overspending. Researchers in the current study are no strangers to conversation of "how I ended up buying things I did not even need" when it comes to online shopping. The ability to have self-control as a part of one's financial behaviour is indeed a useful one. Previous studies (Ayuba, Saad & Ariffin, 2015; Sabri & Falahati, 2013) revealed how financial literacy could assist one in their financial behavior, which in return has positive impact on financial wellbeing.

By being financially literate, we are able to comprehend our earning and spending habits and the importance of having a budget. By having a budget, one is able to completely see how and where are all the money going and we are able to track each expenditure and make dynamic changes to our spending plan if we find it not suitable with our current earning capability. One of the most common problem dragging people down are often their debts. By having financial literacy, one will be able to avoid getting in debts and pay them on time too. Financial literacy will allow a person to compare and contrast loan terms which can work in one's benefit over the long run and the ability to pay up credit card charges regularly each month to avoid interest charges. With one being financially literate, one will be able to look for a method to be debt free. Financial literacy also allows a person to be debt free and avoid bankruptcy. The government in their effort to relieve peoples' burden had announced The Temporary Measure for Reducing the Impact of Coronavirus Disease 2019 (Covid-19) Act 2020 which saw the minimum debt threshold raised to RM100,000 from the previous RM50,000. This measure however recently ended on National Day. Hence, the researchers in the current study feels that the number of people filing for bankruptcy will go higher towards year end. A financial literate person would ideally keep three to six months' worth of savings to float themselves in case of any emergency and ensure that the savings remain there at all times. Researchers in the current study through the survey will be discovering if Malaysians have saved for their rainy days. It is also important to have short and long-term plans in which one is able to have a better idea about the investment one should make in order to retire comfortably.

RESEARCH METHODOLOGY

Sampling Design

This quantitative study employs questionnaire survey as the research instrument to obtain data from the publics on financial literacy. Survey method was decided due to the current pandemic restrictions and SOP's. 126 respondents, male and female answered the survey, aged mainly from 18-60 plus years old, with most of them being married. Researchers used snowballing method by forwarding the survey and asking participants to forward it further to their contacts. Main method of survey distribution was WhatsApp. The modest number of respondents exceeded the researchers' expectations since different approaches were employed to pique their interest in responding to this survey. Researchers believed that the survey's title would make it difficult for people to respond. Furthermore, it is possible that respondents are not confident in their ability to respond to questions on financial literacy. All participants were informed of the topic and their consent was obtained in accordance with the Data Protection Act 2010 (PDPA). Researchers had emulated the OECD INFE (2011) financial literacy questionnaire to obtain data from the respondents since the questionnaire is a combination of 18 existing surveys on financial literacy which are obtained from 16 countries. Hence, the questionnaire takes into consideration common financial issues, literacy and practices practiced at an international level.

Research Procedure

A total of 126 questionnaires were successfully completed and entered into the Statistical Package for the Social Sciences (SPSS) version 23.0 to generate descriptive analysis. The questionnaire is accessible in English and is divided into two sections. Section A includes demographic questions such as gender, age, marital status, highest level of education, employment status, family income, and number of dependents. Section B consists items to understand and measure financial literacy. Some of the questions are based on a 5-point Likert scale labelled as strongly agree (represented by five) or strongly disagree (represented by one), while others are closed-end questions that limit a respondent's response possibilities to a set of pre-selected options. This covers both nominal and 'yes' or 'no' inquiries.

FINDINGS AND DISCUSSION

There are 126 valid data obtained and analyzed accordingly. The respondents' demographics are demonstrated in the Table 1.

Table 1: Demographic Information of Respondents (N=126)

Participants' Variables	N	Percentage
Gender		
Male	54	42.9
Female	72	57.1
Age		
18-29	40	31.7
30-44	54	42.9
45-59	28	22.2
60 plus	4	3.2
Marital status		
Married	80	63.5
Single	44	34.9
Separated/ Divorced	2	1.6
Level of education		
University-level education	76	60.3
College-level education	22	17.5
Technical/vocational education	4	3.2
Complete secondary school	24	19

Household Income		
Below RM2500	22	17.5
RM2501 – RM5000	52	41.5
RM5001 – RM8000	34	27
Above RM8000	18	14.3

Sources: Developed for research

Table 1 shows that females made up 57.1 percent of the participants, while males made up 42.9 percent. The majority of participants were between the ages of 30-44 (42.9 percent), 18-29 (31.7 percent), 45-59 (22.2 percent), and 60 and above (3.2 percent). 63.5 percent of the 126 participants are married, 34.9 percent are single, and 1.6 percent are divorced or separated. In terms of education, 60.3 percent have a university-level education, 19 percent have completed secondary school, 17.5 percent have a college diploma, and 3.2 percent have a technical or vocational education. Since this study focuses on the financial literacy of the participants in a household therefore it is pertinent to understand their household income. 41.5 percent make between RM2501 and RM5000, 27 percent earn between RM5001 and RM8000, 14.3 percent earn over RM8000, and 17.5 percent earn less than RM2500.

Table 2: Family Dependents & Employment Status (N=126)

Item	N	Percentage
Dependents		
<i>Living with children under the age of 18</i>		
0-2	110	87.3
3-5	16	12.7
More than 5	0	-
<i>Living with people aged 18 and above</i>		
0-2	68	73.9
3-5	22	23.9
More than 5	2	2.17
Employment		
Self-employed [work for yourself]	20	15.9
In paid employment [work for someone else]	68	54
Looking for work	2	1.6
Unable to work due to sickness or ill-health	-	-
Retired	2	1.6
Student	30	23.8
Not working and not looking for work	-	-
Homemaker	2	1.6
Student and in paid employment	2	1.6

Sources: Instrument emulated the OECD INFE (2011)

The results in Table 2 depict the number of dependents in a household. A sizable proportion of 87.3 percent of respondents have children aged 0 to 2 years old, with 16 responders having children aged 3-5 years old. According to the study, the majority (73.9 percent) of respondents live in a household with individuals aged 18 and over, whereas 22 respondents have between three to five adults living together and only two respondents has more than five adults staying in the same house. Understanding the household phenomena necessitates the reporting of employment. The majority of respondents (54 percent) are in paid employment, 23.8 percent are students, 15.9 percent are self-employed, and there is two respondents for each of retired, searching for job, homemaker, and student in paid employment.

Table 3: Financial Literacy (N=126)

Financial Literacy	N	Percentage
<i>Do you get any kind of formal or informal financial education?</i>		
Yes	38	30.2
No	88	69.8
<i>Does your household have a budget?</i>		
Yes	92	73
No	12	9.5
Don't know	22	17.5
<i>Who is responsible for day-to-day decisions about money?</i>		
You	26	20.6
Your partner	12	9.5
You and your partner	50	39.7
You and another family member	14	11.1
Another family member	18	14.3
Nobody	4	3.2
Don't know	2	1.6

Sources: Instrument emulated the OECD INFE (2011)

As per Table 3, a surprising 69.8 percent respondents stated that they did not receive any kind of financial education and only 30.2 percent received financial education. This finding supports what researchers believe in as stated in literature above; the importance of having a formal subject on financial literacy is a must for Malaysians to at least be equipped with the basic knowledge of financial issues. By molding individuals from a young age on the need of having a positive financial attitude, we can shape and influence the coming generation's financial behavior too so that they are able to maintain their financial wellbeing. A substantial 73 percent has a budget in their household and only 9.5 percent do not have a household budget. This revelation on having a household budget indicates that Malaysians do have some form of positive financial attitude. A fraction of 14.3 percent budget done by other family members, 11.1 percent respondents together with another family member make the household budget while a segment of 9.5 percent claim budget done by partner, 3.2 percent admitted to not having any budget while two respondents has no idea of the budget.

Table 4: Ownership of Products (N=126)

Ownership of Products	N	Percentage
<i>Do you own any of these sorts of products (individually or jointly)?</i>		
A pension fund	12	9.5
An investment account (such as a unit trust, stocks, shares, bonds, etc.)	34	27
A mortgage	36	28.6
An unsecured bank loan	48	38.1
A credit card	48	38.1
A current/saving account	102	81
Insurance	94	74.6
Mobile phone / internet payment	114	90.5

Sources: Instrument emulated the OECD INFE (2011)

Table 4 depicts the information financial products owned jointly or separately by respondents. Respondents were polled on whether they owned financial goods jointly or individually. A majority of 90.5 percent of respondents make mobile phone or internet payments, while a sizable proportion of 81 percent have a current or savings account. 74.6 percent are devoted to insurance, while 38.1 percent are dedicated to unsecured bank loans and credit cards. Other goods held by respondents include a mortgage (28.6 percent), an investment account such as a unit trust, stocks, shares, bonds, and so on (27 percent), and a pension fund (9.5 percent). The ownership of these financial products are a clear indication of how important it is for Malaysians to have a sound ability on managing their finances as majority of them are servicing loans and owns credit cards too, which can be a slippery slope for many if not handled smartly. A person with a positive financial attitude and behavior would inquire carefully and make sound judgements about the monthly payments in order to not be charged any extra interests and be debt free as soon as possible.

Table 5: Financial Products (N=126)

Selection of Financial Products	N	Percentage
<i>Which of the following statements most accurately represents how you recently selected a financial product or service?</i>		
a) I considered several [products/loans/policies/accounts] from different companies before making my decision.	78	61.9
b) I considered the various [products/loans/policies/accounts] from one company.	4	3.2
c) I didn't consider any other [products/loans/policies/accounts] at all.	24	19
d) I looked around but there were no other [products/loans/policies/accounts] to consider.	6	4.8
e) Don't know.	14	11.1

Sources: Instrument emulated the OECD INFE (2011)

Interestingly, the majority of respondents (61.9%) investigated other firms before committing to products, loans, insurance, or accounts in picking their financial product or services. As shown in Table 5, 24 respondents admitted to not considering any financial products at all, four respondents considered only one business for their financial goods, six could not find any items to consider, and 14 respondents were ignorant of any financial products. Once again, despite not having a formal financial literacy knowledge, respondents revealed their financial literacy skills and attitudes by utilizing technology and any other mean to find out about the financial products they want to invest in. The following section of the poll utilized a 5-point Likert scale to assess their financial resilience throughout the pandemic. Respondents were asked to select their choices depending on what was relevant to them individually.

Table 6: Personal View (N=126)

Items	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. Before I buy something I carefully consider whether I can afford it.	34	68	12	2	10
2. I tend to live for today and let tomorrow take care of itself.	8	6	24	48	40
3. I find it more satisfying to spend money than to save it for the long term.	6	12	16	48	44
4. I pay my bills on time.	26	30	32	28	10
5. I am prepared to risk some of my own money when saving or making an investment.	10	46	38	18	14
6. I keep a close personal watch on my financial affairs.	22	48	44	8	4
7. I set long term financial goals and strive to achieve them	6	42	42	26	10
8. Money is there to be spent.	12	16	34	40	24

Sources: Instrument emulated the OECD INFE (2011)

According to the 5-point Likert scale displayed above, respondents' responses ranged from strongly agree to strongly disagree. On the bright side, 34 respondents strongly agree, 68 respondents agree to carefully examine purchasing anything based on affordability, and only 12 respondents do not and neutral respectively. 48 individuals disagree, with 40 strongly opposing, that living for today and tomorrow will take care of financial matters. 14 respondents are content to live in such a situation, whereas 24 respondents are agnostic. In terms of their satisfaction with spending money rather than saving for the long term, 48 disagree and 44 strongly disagree, whereas 18 strongly agree and agree feeling good in spending money and just 16 are indifferent. Respondents are regarded to be responsible when it comes to paying their bills on time, with 26 strongly agreeing and 30 agreeing. However, 32 respondents acted neutrally, 28 disagreed, and 10 strongly disagreed. A large proportion of respondents are willing to take chances with their money or investments, with 10 strongly agreeing and 46 agreeing. However, 38 people were undecided, 18 disagreed, and 14 strongly disagreed. The majority of respondents (70) keep close checks on their financial issues, while 12 do not and 44 do not provide an opinion. Setting long-term financial goals is something that 42 of

the respondents agree with, with six strongly agreeing and 26 disagreeing, with 10 strongly disagreeing and a high number of respondents, 42 persons, who are neutral in their opinions. There are 40 respondents who disagree and 24 who strongly disagree that money is available to spend, whereas 16 respondents agree, 12 strongly agree, and a substantial proportion of 34 respondents are indifferent.

Table 7: Experiencing Financial Scarcity & Responses (N=126)

<i>Item</i>	N	Percentage
<i>People occasionally discover that their earnings are insufficient to support their living expenses. Has this happened to you in the last 12 months?</i>		
Yes	68	53.9
No	30	23.8
Don't Know	10	7.9
Not Applicable (I do not have personal income)	18	14.4
<i>What did you do to make ends meet the last time this happened?</i>		
1. Existing resources		
a) Draw money out of savings or transfer savings into current account	48	38.1
b) Cut back on spending, spend less, do without	84	66.7
c) Sell something that I own	34	26.9
2. Creating resources		
d) Work overtime, earn extra money	60	47.6
3. Access credit by using existing contacts or resources		
e) Borrow food or money from family or friends	34	26.9
f) Borrow from employer/salary advance	-	-
g) Pawn something that I own	32	25.4
h) Take a loan from my savings and loans clubs	12	9.5
i) Take money out of a flexible mortgage account	2	1.6
j) Apply for loan/withdrawal on pension fund	40	31.7
4. Borrow from existing credit line		
k) Use authorised, arranged overdraft or line of credit	10	7.9
l) Use credit card for a cash advance or to pay bills/buy food	20	15.9
5. Access new line of credit		
m) Take out a personal loan from a financial service provider (including bank, credit union or microfinance)	40	31.7
n) Take out a payday loan	14	11.1
o) Take out a loan from an informal provider/moneylender	-	-
6. Fall behind/ go beyond arranged amount		
p) Use unauthorised overdraft	8	6.3
q) Pay my bills late; miss payments	48	38.1

Sources: Instrument emulated the OECD INFE (2011)

As shown in Table 7, a sizable 53.9 percent of respondents agree that their earnings have been insufficient in the last 12 months to support their living expenses, 23.8 percent disagree, 7.9 percent are unaware of the phenomenon, and 14.3 percent do not have any personal income and do not find it applicable. Families facing financial challenges seek other means of subsistence. The poll was divided into four sections: existing resources, developing resources, obtaining credit through current connections or resources, borrowing from an existing credit line, and falling behind or over budgeted amounts. To make ends meet, 84 respondents cut back and spent less money. 48 respondents chose to spend their money or move their savings into a current account. Regrettably, 34 of them have sold their possessions in order to make ends meet. In the following category, 60 respondents worked extra hours to earn extra money. Respondents obtained credit through existing contacts or resources, with 40 applying for loans or withdrawing from pension funds, 34 borrowing food or money from relatives or friends, and 32 having to pawn anything of their own to make ends meet. 12 respondents borrowed money via savings and loan clubs, while two borrowed money from a flexible mortgage account. A tiny proportion of respondents used their existing credit line to borrow money. Only 20 respondents used a credit card to get a cash advance, pay bills, or purchase groceries, while 10 utilised an approved, planned overdraft, or line of credit. Respondents have accessed additional lines of credit during difficult times, with 40 of them taking out personal loans from

financial service providers such as banks, credit unions, or microfinance, and 14 taking out payday loans. 48 of the respondents had fallen behind on their bill payments, went above the agreed-upon amount, or even missed payments. Eight of them utilised unlawful overdrafts. Respondents were questioned about their savings techniques in the previous 12 months and their capacity to support themselves after losing a major source of income without borrowing in the midst of the pandemic.

Table 8: Saving Pattern and Sustainability during Scarcity (N=126)

Items	N	Percentage
<i>Have you been [personally] saving money in any of the following methods in the last 12 months, whether or not you still have the money?</i>		
a) Saving cash at home or in your wallet	24	19
b) Building up a balance of money in your bank account	40	31.7
c) Paying money into a savings account	42	33.3
d) Giving money to family to save on your behalf	18	14.3
e) Saving in an informal savings club	10	7.9
f) Buying financial investment products, other than pension funds	12	9.5
g) Has not been actively saving (including I don't save/I have no money to save)	48	38.1
h) Don't know	4	3.2
<i>How long would you be able to afford your living expenses if you lost your major source of income without borrowing any money?</i>		
a) Less than a week	6	4.8
b) At least a week, but not one month	8	6.3
c) At least one month, but not three months	46	26.5
d) At least three months, but not six months	20	15.9
e) More than six months	14	11.1
f) Don't know	32	25.4

Sources: Instrument emulated the OECD INFE (2011)

Table 8 illustrates the respondents' savings and sustainability patterns. In terms of savings, 38.1 percent of respondents stated that they do not actively save money. However, 33.3 percent of respondents can deposit money into a savings account and 31.7 percent can build up a balance in their bank account. 19 percent of respondents still prefer to save money at home or in a wallet. Respondents have made efforts such as giving money to family members to save (14.3 percent), purchasing financial investment products other than pension funds (9.5 percent), and saving in an informal saving club (7.9 percent). In terms of surviving the pandemic without borrowing money, 26.5 percent of respondents were able to cover their living expenditures after losing a main source of income for at least one month, but no more than three months. Surprisingly, 25.4 percent are unaware of their ability to sustain. 15.9 percent answered that they could afford to live for three months but not six months. Other respondents claimed to be able to cover their living expenditures for more than six months (11.1 percent), at least a week but not a month (6.3 percent), and less than a week (4.8 percent). These discoveries are undoubtedly eye-opening and should be investigated further during the pandemic.

Financial Literacy

Being financially literate is not an advantage, but rather a need for every individual and household. People may believe that they have gauged themselves with a substantial amount of knowledge in dealing with their finances; however, is it sufficient? Today, the globe is dealing with an unprecedented period such as Covid-19, which has resulted in many people becoming jobless, losing a primary source of income or a secondary source of income, and being unable to manage their money. According to the results of this poll, many people are unprepared. This should be narrowed down to individuals earning less than RM2500 and between RM2500 and RM5000. This set of earners appears to have taken the most impact. Therefore, the need to equip Malaysians with a positive financial attitude should be given importance, especially in a pandemic time as this. It is unfair to assume that these people are unable to have a positive financial attitude because they do not have savings or are unable to sustain themselves for more than three-six months. This is because they earn a limited amount and need to sustain themselves and their families in that limited amount.

Government agencies like CBM and APKP should be more active on social media to attract people on issues like finance. Even if they earn a limited amount, they can be guided or shown a way on how can they manage their finances better.

Researchers in the current study agrees with Ponnet's (2014) study in which many Malaysians are complaining of the financial hurdles faced during this pandemic, but families in the B40 group are likely to suffer more compared to the M40 and T20 as they were already struggling to make ends meet before the pandemic. In managing a family financially amidst pandemic is a challenge. It has been reported that many families are relying on the government for financial aid. What has led to this? The survey has taken us through the difficulties or rather a household's lifestyle. According to the data, just 69.8 percent of people have obtained formal or informal financial education. Given that all of the responders had at least finished high school, the proportion is concerning. According to Munoz-Murillo et al., (2020), being financially literate is a basic need that one needs to acquire in terms of knowledge and ability so that one is able to manage his or her finances well in order to avoid any bad or poor financial decision making. It is also clear that the majority of respondents are in paid work, which implies that losing their main source of income means losing their steady income. If their financial literacy has been taken for granted, the result is in their failure to meet the daily expenses in a household. This study finding supports Yuesti, Rustiarini & Suryandari's (2020) study in which their financial attitude had led them to make a good choice by having a budget for their household rather than just spending aimlessly. Financial wellbeing is key in impacting financial literacy which in return makes one to have sound decision making (Sabri & Zakaria, 2015; Zulfiqar & Bilal, 2016). This is further verified based on the multiple previous studies which indicated that a positive financial attitude is strongly co-related to financial literacy (Ameliawati & Setiyani, 2018; OECD, 2013), financial planning (Agarwal, Amromin, Ben-David, Chomsisengphet & Evanoff, 2015; Atkinson & Messy, 2012; Lusardi & Mitchell, 2011) and positive financial attitude can also lead people to save more (Agarwal et al., 2015; Atkinson & Messy, 2012).

Ownership and Financial Products

Priorities of owning financial products have changed overtime. Exorbitant priority is given to mobile phones with payments made to internet as compared to investing in retirement fund or investment account. Although 81% have current or savings accounts, just 27% have investment accounts. Clearly, there is a dearth of financial knowledge. These long-term investments are a good way to generate income, and savvy investing may help you grow wealth. Fortunately, 74.6 percent of families have insurance, which protects them medically and gives some savings. Mortgage loans are found in a tiny percentage of the population. Mortgage loans, when correctly analysed, are secured loans and a kind of cost-effective borrowing with a low interest rate. Mortgage loans come in helpful during difficult times, but many people do not appear to have this luxury. Amusingly, 38.1 percent own a credit card where the monthly interest is higher than other loans. There is no harm in owning a credit card, but one must have a positive financial attitude in ensuring that they do not accrue more interest charges than what they earn monthly. The ability to practice self-control as mentioned above is indeed a good value to have to ensure a better financial wellbeing. In terms of recent financial product purchases, 61.9 percent of respondents tried to investigate loans from various firms. However, the fact that the majority of respondents either remain with one business or are unaware of the financial solutions available is a setback for financial literacy. According to Yuesti, Rustiarini and Suryandari (2020), financial attitude may help people make better judgments about "financial management, personal financial budgeting, or how individual decisions about the type of investment should be made" (p. 887). Clearly, respondents' financial attitudes have been unfavorable.

Experiencing Financial Scarcity & Responses

This part demonstrates their lack of financial literacy. In the previous 12 months, 54 percent acknowledged to having inadequate earnings to cover their living expenditures. During the epidemic, a troubling percentage will be seen. 22.2 percent are risky because they are unaware and do not have an income, therefore no attempt is made to learn about finances. To operate a home, all members are expected to share financial literacy. In their attempt to overcome their financial shortcomings, respondents have opted to tamper their existing resources to withdraw money from their savings even transferring their savings into current account while 34 respondents sold something they own to make ends meet while 60 respondents create resources by working overtime to earn extra money. In their response respondents pointed out accessing credit by using existing contacts or

resources such as applying for loans to have ends meet or withdrawing from pension fund, borrowing money from family and friends, pawning something are signs of financial illiteracy. This phenomena would not occur if they had any understanding of being prepared for unforeseeable events and planning their funds for a rainy day.

Respondents' approach to dealing with shortage is simply to double their debts, generating even greater financial distress. 10 respondents use their credit card for a cash advance to pay bills and purchase food in order to continue alive. This is another instance of adding to their financial load. Their access to fresh line credit is likewise seen as a limited option. Missing payments or having backlogs on their monthly payments is not an effective solution, and adding a personal loan to their present load is not. According to the poll, financial literacy is low, and as a result, running a home is surely not done properly, since respondents add to their debts on a regular basis. This is alarming as poor financial attitude and behavior is directly linked to negative financial and mental wellbeing. As discussed in literature above, financial stress can impact families and job performances. As warned by Azaddin of AKPK, financial stress caused by the Covid-19 pandemic is closely linked to mental health concerns (Yahoo News, 2021). The findings of this survey truly reveal the multiple layers Malaysians negotiate with when it comes to their financial literacy. Where at one-point respondents answer by saying they have a household budget planned, which is sign of a positive financial attitude, but at the same time, they also reveal about accessing a new line of credit to make ends meet. Researchers in the current study believes that the importance of managing one's finances need to be instilled from young so that one can make better financial decisions.

Saving Pattern and Sustainability during Scarcity

No matter what situation arises, it is crucial for respondents to save some percentage from their salary. Unfortunately, the percentage speaks otherwise. 38.1 respondents claim of not being able to save actively for the past 12 months. This is a rising problem of ineffective financial management. According to the Ringgit Plus Malaysian Financial Literacy Survey 2019 (RMFLS 2019), Malaysians do not take proactive efforts to manage their finances, despite knowing how vital it is. Every member of the family in a home should develop saving habits and realise that money will help them sail through difficult times. On a positive note, some of them do build up their balance in bank account, pumping in money to their savings account and try save cash at home. These methods are seen as temporary methods or also old methods in saving the money. A majority of respondents have come clean to the fact that they cannot sustain more than three months without borrowing after losing their major source of income which means they are staying afloat on borrowings. If they are able to pull through 3 months, they are unable to sustain for 6 months and the fact some stated they are unsure of sustaining at all is a clear case of bad financial planning and ignorance. The findings of this survey are consistent with the findings of the RMFLS 2019 study, which shows that 53% of respondents are unable to subsist for more than three months with their existing funds. This study foreshadows of what may come in future if Malaysians continue being lax about their finances and don't seek help from governmental agencies to guide them better, especially once we step into the endemic mode from pandemic.

CONCLUSION

Managing a household is not about passing through on daily basis. A large part of it covers retirement funds, emergency expenses, education and healthcare. Thus, being financially literate helps elevate major part of one's living. From the survey done, unfortunately Malaysians are not prepared to face any kind of uncertainty. This is displayed in their act of borrowing from friends, family and taking up more loans. The B40 group is seen struggling in handling their finances and what had led to this. Are the schools providing financial education in preparing the youths to face an uncertain world? Is the government imparting enough education to the society in dealing with their expenses? The answer is negative. By extending help to the citizen though noble does not prepare them to face more uncertainties in the future. The education system should consider K.C Wong's suggestion, the chief executive officer of Credit Bureau Malaysia (CBM) in providing a structured syllabus where the art of managing money and financial literacy to be imparted. The research objective to investigate if households are suffering from due to Covid-19 epidemic is proven right. Having financial literacy to help managing finances is crucial to those who do not have the literacy. The percentage seen has to be taken seriously in order to ensure every Malaysian is able to handle their finances effectively. This

study recommends that governments and universities invest in financial literacy that makes societies more resilient to crises like the current Covid-19 pandemic.

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BAFE081:
**A CLOSER LOOK ON THE FINANCIAL MANAGEMENT PRACTICES
OF ELEMENTARY SCHOOLS IN A PHILIPPINE PROVINCE**

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Abstract

This study looks into the financial management practices of School Heads of Elementary Schools in Quezon Province, Philippines. Using a survey questionnaire, the researcher assessed the school heads' practices in relation to legislation and policies, values and principles, authority and accountability, roles and responsibilities, financial management processes of Department of Education, the enablers, and the financial management results. An interview was conducted for the qualitative data since the study uses the mixed method as research design. It involves participation from selected school heads, public school district supervisors, and administrative assistants of the accounting section. The research includes Circulars, Orders, memorandum and issuances, and Republic Act as the foundation of the financial management system of the department. A financial management development program for school heads, feedback to aid the planning and implementation of the division, implications, and proposal for the division office are the output of the research. The findings showed that majority of the respondents are female which has a significant difference in the Financial Management Practices of the school heads. School heads have posted a strong agreement on the statements with regards to their practices. It is recommended that there are close monitoring and supervision of the financial management practices of the school heads and pursue continuing professional development inclusive of training in relation to Finance and Accounting.

Keywords: Financial Management, Financial Management Practices, Maintenance and Other Operating Expenses

INTRODUCTION

The Philippine government exercises budgeting or the allocation of revenues and borrowed funds and management of government expenditures to attain the economic and social goals of the country and healthy fiscal position. Budgeting enables the government to plan and manage its financial resources to support the implementation of various programs and projects. "The word "fund" in government is used to refer an appropriation or an allotment or as actual cash available. These funds can be allocated to three allotment class or the classifications of expenditures, such as Personal Services (PS) or the payment of salaries, wages and other compensation/benefits for permanent, temporary, contractual and casual employees of the government.; Maintenance and Other Operating Expenses (MOOE) or the expense class for the support of the operations of the government agencies such as expenses for supplies and materials' transportation and travel; utilities; repairs; and other recurring expenses to cover day-to-day requirements; and the Capital Outlays (CO) that are the appropriations for goods and services, the benefits of which extend beyond the budget year and which add to the assets of the government.

It was articulated in the Department of Education's (DepEd) Financial Management Manual 2015 that the department has the biggest share of government's budget as the largest agency in the country and representing more than 25% of spending budget allocations. It is critical to have a comprehensive and efficient financial management system to ensure that the funds and are invested in quality program and services (Financial Management Manual 2015, p. ii-iii). In the 2020 budget, the education sector has the largest allocation in the national budget (Ismael, 2019) while Cordero (2020) articulated that DepEd was allotted with the biggest proportion of budget among the government departments in the 2021 budget.

Correspondingly to the management of government expenditure, it was stated also that financial accountability is an important component of an institutional reform which “requires establishing standards that promote transparency, strategy, and efficiency supported by reliable basic education statistics and a defined set of financial management procedures that will ensure accuracy, uniformity, and clarity of financial management procedures across all levels of the organization”. (Financial Management Operations Manual 2016, p.2)

As such, the Department of Education has Financial Management system and procedures throughout all levels of the organization involving other related agencies. The school is the lowest level of the organizational structure – Elementary and the Secondary School. The schools can be classified as Implementing Unit or Non-Implementing Units. Implementing Units are those secondary schools that received funds directly from the regional office of DepEd and have its own minimum financial staff to processes its own transactions, maintains its own book of accounts and produces financial statements and other reports. On the other hand, Non-Implementing Units are those elementary and secondary schools that receive allocations through Division Office in form of Cash Advances and does not have financial staff, thus, their financial transactions are included in a book of accounts of the Division Office. It is rationalized that the school budget is one of the most powerful tool and available resources to support schools’ operations, and promote and strengthen school-based management and accountability”. (DepEd Order No. 13 s. 2016)

In the Elementary Schools, the principal as the head of the office is accountable for the Cash Advances. The School Heads act as Financial Managers. Financial managers are responsible for all important financial functions of an organization. The person in charge should ensure that the funds are utilized in most efficient manner or allocated to its optimal use. Typically, financial managers' roles and responsibilities in private or public organization covers financial analysis and interpretation, determine the source of fund, investment of funds, profit planning, and control, and capital budgeting.

Each School Head submits their monthly MOOE Liquidation Report of the school which includes all the projects that are charged from the fund released for the school that are based on their approved School Improvement Plan (SIP), Annual Implementation Plan (AIP), and Annual Procurement Plan (APP). The liquidation report reflects how the fund is utilized by the School Head which includes all the required forms and supporting documents and pictures to be pre-audited by the Administrative Assistants or Internal Auditors of the Accounting Section and be post-audited by the Commission on Audit (COA) designated in the Division Office. As observed, pre-audit findings seem not to be minimal. There are disallowances and refunds for projects that are not chargeable to MOOE or does not follow the set standards, rules, and regulations of DepEd and COA on the utilization of funds. Some of the projects are not aligned with the school’s SIP, AIP, and APP. Expenses are not aligned with the estimated budget allocated during the budget preparation and with the approved budget allocation, thus, realignment of funds is to be done.

Hence, the research intended to evaluate the financial management practices of the School Heads in handling their School MOOE Allocation and have a potential impact on the Planning, Budget, and Finance Section and field offices' financial activities of the Division of Quezon. With these, it was imperative to examine the financial management practices of the school heads. The study provided the strengths and weaknesses as well as identified the gaps to fill in for improvement through workshops and training of the school heads financial management practices for a more effective and efficient management of funds, particularly in the MOOE Allocation.

LITERATURE REVIEW

Financial Management

In 2017, Karadag examines the financial management performance in Small Medium Enterprises (SMEs) with regard to industry, firm age and education level of owner/managers differences. The results from the data gathered from 188 SMEs of Turkey indicates that performance in financial management practices has a strong and positive correlation with the education level of small business owner/managers, whereas no significant difference is found regarding SMEs operating in different industries.

Musah, Gakpetor, and Pomaa (2018) discussed that financial management embrace all aspects of management with relation to the finances of a company and what it needs to achieve the organization's overall objective. Correspondingly, Doszhan, Nurmaganbetova, Pukala, Yessenova, Omar, and Sabidullina (2020) explained that it is an operation activity linked to financial resources in its necessary acquisition and utilization for the performance and achievement of the company's objective effectively and efficiently.

Legislation and Policies

Dabon (2021) conducted a study also on managing school finances by public school heads particularly on their Maintenance and Other Operating Expenses (MOOE). It was explicated that when disbursing or disposing government funds like MOOE or even properties, it should be in accordance to the existing budgeting, accounting, procurement, and auditing rules and regulations of the agency and other government oversight agencies. Meanwhile, Myende, Samuel and Pillay (2018) looked into formulating policies in schools for clear procedures to novice principals and their financial management. It was emphasized from the responses of the principals, that an absence of school's financial policies, may lead to conflict since people will use common sense interpretations in financial management. The school financial policies serve as guiding principles for the people, the school, and its finances and management.

Financial Management Processes

Financial Management involves planning. According to Dabon (2021), in preparing financial management plan, it was found out that the school heads always prepare their budgets with the teachers; identify the needs in the School Improvement Plan (SIP); prepare Annual Procurement Plan (APP); allot the School Operating Budget based on the annual budget given; and craft the school Project Procurement Management Plan. The aforementioned plans encompass the operations of the school for an academic year.

To plan is also one of the functions of budget along with accountability and control according to Menifield (2021). Budget is one of the tools in determining if an organization has achieved its objectives as laid out by legislative and executive institutions. The agencies can appropriate the funds and organized the cost based on their strategic priorities, functions, and activities. It was discussed also that there is a difference between public budgeting and private budgeting. In public budgeting, the budgets are public documents prepared for a fiscal year or two while in private are flexible and may change to move along with the economy. Also, the public budgets are open to the public and may be scrutinized. The government receives large amount of fund; thus, it should be allocated and managed to cover all its expenditures and carry out its services.

In a public educational sector, Label (2017) studied the organizational management skills of elementary school principals in selected division offices of the Department of Education in Quezon Province. As to budgeting, the indicators used to assess the skills of the principals were: creates a spending plan; ensures accountability for organization ethics among employees; develops an organizational chart job description and statement of workflow; creates a plan how to use the MOOE of the school well; and prioritizes the spending of MOOE to the most important. The results as perceived by principals themselves and by the non-teaching respondents gained an average weighted mean of 4.69 and 4.54 respectively, showing that the skill in budgeting was manifested always. However, as perceived by the respondents who are teaching personnel, the average weighted mean obtained is 4.18 which is very often. Goodluck (2011 as cited in Label, 2017) "that budgeting for knowledge management in organizations is a complex process. No simple set of rules works for all. The general intention of budgeting for knowledge management is to distribute funds in such a way as to support the overall attainment of organizational objectives". (p. 92)

Reporting is also involved in financial management. Muda, Haharap, Ginting, Maksum, and Abubakar (2018) stated that a good financial report reflects a region's compliance to the financial reporting quality and utility procedures. Moreover, it consists of wealth and financial structure information that reflects results from an activity. It was discussed that through accurate and transparent financial information in the financial report of the government contributes in the improvement of the quality in decision-making for the public expenditure's efficiency and effectiveness. The use of information technology in financial reporting allows the financial

management activities to be recorded more systematically and have more reliable presentation of financial statement as it minimizes reporting errors.

Fuchs and Bergmann (2017) conducted a study in Switzerland on the use Financial Reporting for decision making as a measure towards resilient government finances. The paper focuses on financial reports as instrument tackled by accrual accounting reforms. The paper argues that accrual accounting reforms create the chance to develop financial reporting and to take a more strategic decision-making approach towards governments' balance sheets as a means of actively shaping more resilient government resources and finances. The study concluded and summarized that the degree of financial reporting development positively corresponds with the way information is perceived as relevant and integrated into decision-making processes. Moreover, Accrual accounting information is necessary because a mere focus on liabilities or a balanced budget is not likely to provide meaningful information about the ability to cope with adverse events or the capability to provide future services (p.148). The researcher also suggests that there is a need for further exploration of the role of accrual accounting in governing and managing public resources.

Reporting is also included in the study of organization management skills of Label (2017). Here, the skills as to reporting include: submits liquidation report on time to the division office; there is transparency in the organization; reports problems in school immediately to the division office; submits needed data on time; and reports to the authority about the working condition of the school. The result obtained from the principals, teaching personnel, and non-teaching personnel as respondents of the study is an average weighted mean of 4.18 which is very often, 4.24 which is always, and 4.08 which is very often, respectively.

CONCEPTUAL FRAMEWORK

Figure 1: Conceptual Framework of the Study

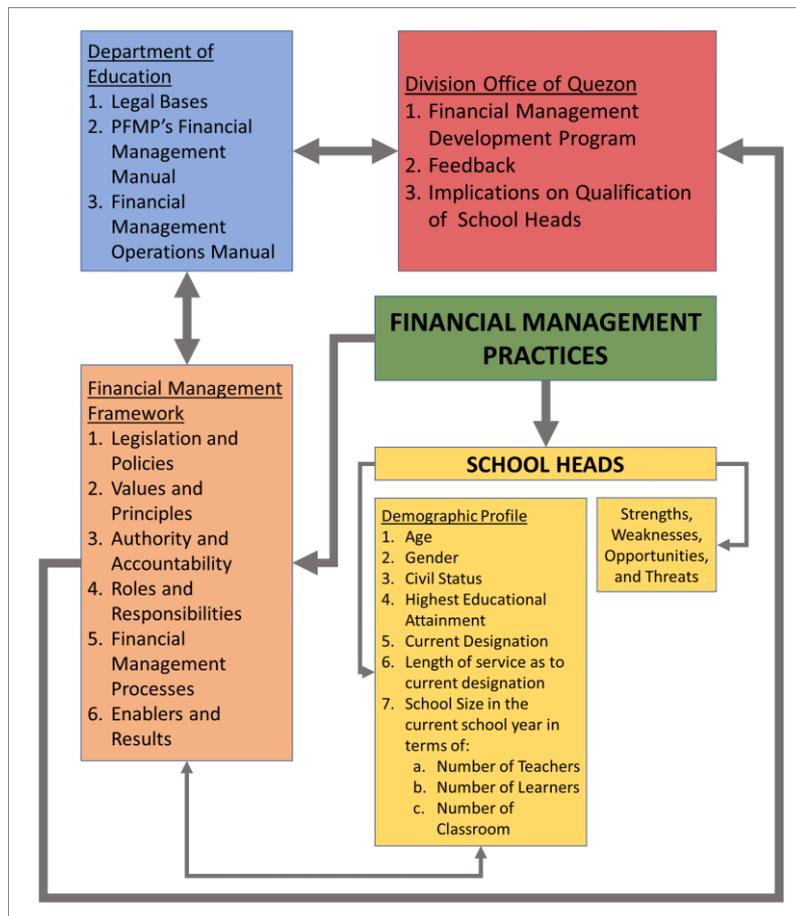


Figure 1 illustrates the conceptual framework of the study. The Financial management practices of the school heads is the focus of the study. The study identifies the demographic profile of the respondents which covers the age, gender, civil status, highest educational attainment, current designation, length of service in the current designation, and the school size (i.e., number of teachers, number of learners, and number of classroom) as well as the strengths, weaknesses, opportunities, and threats of the school heads with their financial management practices in handling the MOOE Allocation Fund. The Financial Management Practices is based on the Financial Management Framework which is discussed in the PFMP's Financial Management Manual for DepEd and in the Financial Management Operations Manual (FMOM) of the Department of Education. The manual serves as one of the primary sources or reference material of the study. It is based on the legal bases of the department as well as related governing agencies. As stated in the manual, the FMOM serves as an implementation guide, a support for process effectiveness and efficiency, as a tool for good governance, and as an instrument for Transparency and Accountability. It also covers Fiduciary processes, the rules and regulations on Public Financial Management, and DepEd's Organizational Structure.

The practices were assessed as well as determine if there is a significant difference between the school head's financial management practices and demographic profile. With the results and discussion of the study, feedbacks are gathered, a development program focusing on financial management is devised for the division office to be applied to the school heads still aligned with the issuances and manual of the DepEd as well as have implications on the qualifications of the aspiring school heads of Division of Quezon.

RESEARCH METHODOLOGY

Sampling Design

The research used a total population sampling. While the sampling used for the interview is the purposive sampling. The participants who were interviewed include 3 school heads, one coming from a Central School which is a large size school and with the bigger allocation of funds for the school, one from a medium-sized school, and one from the small-sized school. Three District supervisors were interviewed as well and five administrative assistant who pre-audits the liquidation report of the second district. The availability and acceptance of the school head and district supervisor were also considered in the sampling of participants. There were cases of withdrawal of a respondent in participating the data gathering, thus, the researcher only used the available data gathered.

Research Procedure

The researcher seeks the approval of the research adviser. The research paper was prepared and submitted. The questionnaire and the interview guide undergo validation of the experts. The instrument is face validated by an English major, education program specialists for planning and research, school heads handling MOOE and with a doctorate degree. It also has undergone test validation to 10 respondents coming from other districts of the province. Necessary changes were applied before the actual distribution of the questionnaires. Then, a letter asking permission was prepared and submitted to the Division Office of the province. With the approval and first (1st) endorsement of the Schools Division Superintendent and second (2nd) endorsement from the district supervisors, the researcher personally distributed the questionnaire and conduct the interview to the respondents. The researcher coordinated with the administrative assistants assigned for the district and the school liaison for the contact number and the availability of the district supervisors and school heads to set the schedule for the interview. In the conduct of the interview, the researcher informed the participant about the study and purpose of the interview and seek the consent of the participant that the interview would be recorded. The researcher takes down notes during the interview. With the recorded conversation, the researcher listened to it after for a more detailed and clear transcription of the interview.

DATA ANALYSIS

In analyzing the data gathered. the frequency distribution or Percentage Method is used for the first and third part of the questionnaire which is the demographic profile of the respondents. For the level of agreement on statements reflecting the financial management practices, using the Likert

scale, the data analysis used is the weighted mean and frequency count as well. Then, the ANOVA or analysis of variance is used to get the significant difference between the financial management practices of the school heads and their demographic profile. In this study, the One-Way ANOVA will be used which compares the means of two or more independent groups in order to determine whether there is statistical evidence that the associated population means are significantly different.

From a total of ninety respondents, the highest percentage of 46.67% ages from 41-50 years old; then 51-60 years old with 18.89%. There are more female respondents among the populace of elementary school heads in the district having 71.11%. This is analogous also in the study of Oboza and Valencerina (2020) which stated that other studies have found out that Department of Education in Philippines is dominated by female employees. Furthermore, David, Albert, & Vizmanos (2017) explained that in terms of education, Filipino female are more likely to graduate up to college than male and in term of workforce, jobs that tend to have higher-paying positions like supervision/management, professionals, service, and sales are more likely to be done by women than men. Most of the respondents have acquired also postgraduate studies. Likewise, most of them were also married having 72.22%. The distribution of the respondents according to length of service in current designation implies that 50% of the respondents are 1-5 years in service as school heads while 23.33% are 6-10 years, 5.56% or 5 respondents are new to the current position and are serving for less than a year, and 7.77% for those who have more than a decade in service as school heads.

Part of the school size is the number of teachers, 46.67% of the schools manage by the school heads have less than 10 teachers, while 33.33% are 10-20 teachers, 10% for 21-30 teachers, 5.56% for 31-40 teachers, and 2.22% for 41 teachers and above. The respondents for the 31-40 and 41 and above is much likely coming from a central school which is classified as a Large School. Based on DepEd Order no. 30, s. 2015, Classification of schools for provinces are: Small – 9 teachers and below, Medium – 10 to 29 teachers, and Large – 30 teachers and above.

The number of students for the school size, complements the aforementioned results from the number of teachers as well as the number of classrooms which corresponds to the results of the number of teachers and students. Most of the respondents are classified as a small school, so the majority of the number of the classroom is less than 10.

Table 1: Consolidated Level of Agreement of the Respondents on Financial Management Practices

	INDICATOR	WEIGHTED MEAN	VERBAL INTERPRETATION	RANK
3	Authority and Accountability	5.71	Strongly Agree	1
2	Values and Principles	5.66	Strongly Agree	2
4	Roles and Responsibilities	5.65	Strongly Agree	3
6	Enablers and Results	5.60	Strongly Agree	4
5	Financial Management Processes	5.58	Strongly Agree	5
1	Legislation and Policies	5.52	Strongly Agree	6
	GENERAL WEIGHTED MEAN	5.62	Strongly Agree	

Table 1 shows the consolidated level of agreement of the respondents on Financial Management Practices. The agreement by the respondents for Authority and Accountability indicates that being the head of the school, the respondents have the authority and accountability of the school's management. As Himmetoğlu, Ayduğ, & Bayrak (2017) explained that accountability is an individual's responsibility to give an answer to another or a group. It can be state as who is the person who will be accountable for an action and to whom who has the authority to be accounted. It has been cited that it demonstrates the work is done in accordance to set rules and standards and shall honestly and openly report its results and outcome.

In relation to Values and Principles that have a GWM of 5.66, qualitatively describes as strongly agree. The values and principles indicated in the statements are based on Section 4 of Republic Act No. 6713 or the Code of Conduct and Ethical Standards for Public Officials and Employees. The statements can be summarized as a commitment to public interest, professionalism, justness and sincerity, political neutrality, responsiveness to the public, nationalism, and patriotism,

commitment to democracy, and simple living, which are classified as part of the values and principles of the school heads. As cited by Boydak Özkan, Yavuz Özdemir, and Yirci (2017), administrators face dilemmas and have to solve them ethically. Hence, they should make moral decisions and be able to differentiate between right and wrong. It was explicated that leaders who can differ the two can influence the organization as they are seen to be trustworthy which increases employees' values and commitment as well.

School heads realize their roles and responsibility through administrative, managerial, and financial work as they responded with the highest WM of 5.76, that they direct, coordinate and manage school funds according to prioritized needs charged to MOOE; prepares and consolidate report (WM=5.69); leads the preparation of SIP/AIP and ensures participation of stakeholders as basis of MOOE projects (WM=5.64); evaluate the school plant, physical facilities fitness, safety and sufficiency with the assistance of specialists in planning the MOOE project (WM=5.56); and identifies the strengths, weaknesses, opportunities and threats of the school for the MOOE with the help of the School Governing Council (WM=5.52). Moreover, Boydak Özkan, Yavuz Özdemir, and Yirci (2017) discussed that school administrators leads in creating a desirable workplace where the stakeholders are relaxed and comfortable; hence they should have interaction with the teachers, students, parents, and other school personnel and stakeholders.

The three components of Enablers and Results such as Senior Management Commitment, Appropriate Skills and Competencies for the Staff, and Management, Supervision, and Oversight of Staff were strongly agreed upon by the respondents with a WM of 5.66, 5.51 and 5.63 respectively. The strong agreement indicated that the respondents are actively and personally involved in the implementation of the projects and that they are committed to their work and aim to have effective results. In line with this, the top management's support, culture, ethical leadership, open communication channels, and ethics training are considered necessary to have an improved quality of an organization's financial reporting (Muktiadji, Mulyani, Djanegara, and Pamungkas, 2020).

As for financial management process that involves planning and budgeting; budget execution; accounting and reporting; and scrutiny and audit. It has a GWM of 5.58 wherein the planning and budgeting practices ranks the least among the four while accounting and reporting practices ranks first. According to Fuchs and Bergmann (2017), the traditionally key information source to measure success and wealth is the financial report. It is considered as an important source of information for decision making. Supporting this is Menifield (2021) that states that maintaining a meticulous accounting record is one of the most important function of state and local governments.

With regards to the level of agreement of the respondents on financial management practices along with Legislation and Policies. The general weighted mean (GWM) of 5.52 shows that the school heads strongly agree with all the statements in relation to understanding and following the policies and provisions stated in the DepEd Orders and Memoranda, COA Circulars, Republic Acts, and Manuals, in connection to Financial Management and MOOE. This strong agreement of the respondents implied that the school heads were abreast with guidelines, abides and conforms to the legal basis with regards to MOOE allocation. The result corresponds to what is stated in the Orders that "strict compliance is directed". Thus, school heads are obliged to comply with guidelines and provisions, otherwise, violations of the provisions shall be dealt accordingly as stated in the sanctions of the Orders.

Table 2: Utilization and Percentage Allocation of the Use of MOOE

	EXPENDITURE	AVERAGE RANK	PERCENT ALLOCATION	RANK
5	Minor Repair of facilities, buildings, and ground maintenance	1.67	34.58	1
8	Utilities (electricity and water) and communication (telephone and internet connectivity) expenses	2.70	17.94	2
4	Procurement of School/Office Supplies	3.63	9.03	3
1	Expenses for school-based training and activities	4.97	6.79	4
3	Graduation Rites/Moving Up or Closing Ceremonies/Completion Rites/Recognition Activities	5.18	7.32	5

2	Expenses on special curricular programs and co-curricular activities of special curricular programs (e.g., travel expenses)	5.84	3.67	6
11	Fidelity bond/insurance expenses	6.13	3.10	7
9	Reproduction of teacher-made activity sheets or activities downloaded from LRMDs	6.19	3.87	8
6	Rental and minor repair of tools and equipment necessary for the conduct of teaching/learning activities	6.27	2.64	9
7	Wages of full-time janitorial, transportation/mobility, and security services	6.50	5.36	10
10	Small Capital Expenditure worth P15,000.00 and below	6.58	4.82	11

Table 2 reveals the how the school heads utilized the School's MOOE Allocation. The items are rank according to their use or the prioritized expenses charged to MOOE. Most of the schools prioritize the minor repair of facilities, building, and ground maintenance with an average rank of 1.67 and an average allocation of 34.58 allocations of the schools' MOOE. Minor repairs as defined in DepEd Order No. 94, s. 2011, "refers to the replacement of school building components which are not subjected to critical structural loads and stresses... Minor repairs keep a building in fit condition for use without increasing its capacity or otherwise adding to its normal value as an asset." Samples of minor repairs are repair of window, doors, and partitions. Next to the common expenses liquidated in MOOE is the utility and communication expenses (i.e., electricity, water, telephone, and internet) with an average of 17.94% allocation. Third, procurement of school/office supplies with an average allocation of 9.03%. The supplies are purchased quarterly; the items and quantity are based on the approved APP of the school. Next expense liquidated is the training expenses with 6.79% allocation. The training expenses are those seminars and training attended by the school heads and teachers with a memorandum stating that the expenses incurred for the training are chargeable to MOOE subject for the usual accounting and auditing rules and regulations. The sixth is the expenses for graduation rites and ceremonies with an average rank of 5.18 but with an allocation of 7.32%. This means that it is on the sixth rank as prioritized by the school head since this expense only incurs once a year during March to April, depending on the schedule of the graduation of the school but its allocation differs because it is depending on the number of students graduating. Based on division memorandum no. 216 s. 2015, the expenses pertaining to graduation rites shall not exceed P250.00 per graduating student. As for travel expenses with 3.67%, this covers those reimbursements on expenses for the curricular program as stated also in the memorandum. Next is the fidelity bond expenses are also paid only once a year. The amount is based on the amount of managed by the school head. Then, rank eight is the reproduction of teacher-made activities or activities downloaded from LRMDs. Following this is rental and minor repair of tools and equipment necessary for the conduct of teaching/learning activities with an average rank of 6.27 but with only 2.64% allocation. This is maybe because that it's only a repair of equipment. With regards to the wages of full-time janitorial and security, not all schools have its General Services because of the amount of MOOE fund released to them. Mostly, the central schools or the large and medium-sized school have their general services. For this reason, it is rank second to the least prioritized but with a percent allocation of 5.36% which is higher to the other expenses on rank 6 to 9. The least prioritized or least used of MOOE is on the Small Capital Expenditure, these are items worth 15,000 and below, like printer, sound system, lawn/grass mower, and other furniture & fixtures, or machineries and equipment which of some school could not afford since their MOOE allocation is enough to pay the utilities, minor repairs, and training and travel expenses.

Table 3: Strengths and Weaknesses as perceived by the School Heads

	INDICATOR	WEIGHTED MEAN	VERBAL INTERPRETATION
1	Strengths	4.81	Moderately Agree
2	Weaknesses	1.99	Moderately Disagree
	GENERAL WEIGHTED MEAN	3.40	Slightly Disagree

The general weighted mean of strengths and weaknesses as perceived by the School Heads were shown in table 3. The strengths include the indicator "I have read and understand all the information and aspects of MOOE", with a WM of 5.30 and showed that the respondents have a good

understanding of the information and aspects of the MOOE. Followed by the indicator saying that "I have attended several seminars and training on school management and those in line with MOOE" with a weighted mean of 5.02; "I have a good school organization to aid me in managing the school" with a weighted mean of 4.99. and the least WM of 4.27 is the indicator "I have a background in accounting and other related competencies" which shows that the respondents have a background in the basics of accounting.

The agreement corresponds to the responses from the interview conducted by the researcher. First, the seminars and training on financial management and budget preparation provided by the division office are considered as the strength of the school head. Some school heads are good in decision making maybe because they have more training attended and may have more knowledge in the different DepEd Order and memorandum. This can also be associated with the long years in service handling MOOE. Moreover, the school heads really follow the guidelines of MOOE – assuming that they should since they have posted a strong agreement that they have read and understood all the information and aspects of MOOE. Next, it is also the strengths of other school heads that they empower and involve their teachers in planning and in the delegation of work. The schools have their BAC or Bids and Awards Committee to help in the utilization of fund for the school. This reflects that the school head has a good school organization to aid in managing the school which the school heads moderately agree. Other strengths that were pointed out during the interview is that some school heads consult and communicate with the internal auditors; the school heads share each other's idea – brainstorming and benchmarking; they are transparent, and some submit on-time.

Opposite of strengths, the level of agreement on the indicators of weaknesses of school heads have a general weighted mean of 1.99 with a verbal interpretation of "Moderately Disagree." This implied that the respondents have a moderate disagreement on the weaknesses of school heads as financial managers of their school. Aside from the indicators of not having post graduate studies on management (WM=2.34); does not have a background in accounting and other related concepts (WM= 2.31); does not have seminars and trainings (WM=1.76); and does not have good school organization (WM=1.75), there are responses from the interview and the survey that complemented. That is, they do not have enough experience in handling the MOOE allocation with a weighted mean of 1.96. Though moderately disagreed, because the majority has ample experiences on handling MOOE, there are some school heads who are newly appointed and are presumed to have less knowledge or less aware on the process and guidelines of MOOE leading to being indecisive with regards to their planning and budgeting.

Other weaknesses of the school heads that were considered are time management and the liquidation period. Based on the interviews, the liquidation period is short to allow the school to utilize the fund. Since the period is short, there are problems encountered for the project to be done. The availability of labor and the labor rate is a problem for the accomplishment of the project which is considered also as a weakness of the school heads. Since the labor rate is higher than the allowed rate, the school heads' personal fund shoulders the excess cost. For the availability of labor, if there is no laborer available, then there would be a delay in the project. This leads to the delay in submission of report or adjustment in the plan indicated in the AIP. Thus, the weaknesses of the school heads come from the external factor – labor, cost, schedule of liquidation period – and not merely on the background and skills of the school head.

Table 4: Threats and Opportunities as perceived by the School Heads

	INDICATOR	WEIGHTED MEAN	VERBAL INTERPRETATION
1	Threats	4.99	Moderately Agree
2	Opportunities	5.55	Strongly Agree
	GENERAL WEIGHTED MEAN	5.27	Strongly Agree

Table 4 shows the general weighted mean of threats and opportunities as perceived by the school heads. The level of agreement on the indicators of threats for school heads had weighted mean of 5.24, which is the highest, for the statement stating that "unavailability of labor, staff, materials, and other supplies affect the use of the MOOE funds". This indicated that labor, staff, materials and other supplies may be lacking. Another is the "increase in cost, market price, tax rates, and other related expenditures affect the implementation of the MOOE projects" with a weighted mean of 5.17. This showed that cost, market price, tax rates and other related expenditures can

hamper the MOOE funds. Then the statement eliciting that “If planning and budgeting are not well executed then mishandling or misuse of the allocation for the school may happen” have a weighted mean of 5.09. This amplified that mismanage budgets can hamper the MOOE funds. As for the lowest indicator with a weighted mean of 4.64 stated that “Time constraint is considered as a threat in the process of managing the school MOOE” This showed that time constraint is also addressed in the process of utilizing the MOOE fund.

Correspondingly, the responses from the interview pertains also to the availability of labor and labor rate which is not only considered as a weakness of the school heads but also a threat to them. If there's no available labor, then the planned project for the month would not be done, then the fund would not be fully utilized. Also, the liquidation period is also considered as a threat. Some school heads worry if the fund would not be liquidated due to lack of time, funds would not be fully utilized, and if projects would not be finished in time. As one respondent articulated, it is because of the short span of liquidation period that there are school heads who are tempted to do some acts of wrongdoing while some use their personal fund to cover the expenses which exceed the allowable amount for the use of fund. It is also a threat to the schools if their projects would be disallowed. For some school heads who are newly appointed, since they are less aware or less informed of the process, some of their projects are subject to disallowance. Moreover, recent cases of theft and robbery happen to some schools in Quezon. Such fortuitous event is also a threat to the school heads. Their safety is also part of their concern for the amount of money they withdraw in the ATM is not small. It was discussed that under Article 1174 of the Civil Code of the Philippines, "A fortuitous event is an event that could not be foreseen, or which though foreseen, was inevitable." It may either be acts of God, like lightning, earthquake, and flood; or acts of man like acts of robbery, strikes, riot, or wars" (The Daily Tribune, 2020).

With regards to the indicators for opportunities, the school heads' knowledge on MOOE policies as a guide in preparing the budget plan for the SIP and AIP and understanding the MOOE process to aid in avoiding mishandling and misuse of MOOE funds resulted with the same weighted mean of 5.58. This implied that the school head strongly agrees that the knowledge for MOOE applies for budgeting and that understanding the MOOE process can eradicate mismanagement of the funds. They also strongly agree that a clear information on MOOE will help them in planning. With the least weighted mean of 5.51, the respondents see it as an opportunity to attend more training on accounting.

Likewise, the responses from the interview included Seminars and Training as an opportunity for the School Heads in order to improve their financial management practices. Proper dissemination of information and communication would help them improve their practices in managing the funds. Added to this is, to be able to have a proper planning and time management. In planning, this would cover the activities and project, the allotted time frame for the activity or project, the budget, the resources, and the stakeholders. Part of planning as well is to know the organization. It is an opportunity for the school heads to know the needs of the school, the teachers, and the students as this would help them to align those needs in the course of planning and budgeting. It would also help the school heads if they would empower their people – their teachers. To be able to delegate the task would help them to perform well their role as an instructional leader and as a school manager.

Table 5: Significant Difference on the Financial Management Practices of the School Heads When Grouped According to Demographic Profile

Variables	N	Mean	Standard Deviation	F Computed Value	F Critical Value	Decision	Interpretation
Age	90	5.49	0.9690	1.1033	2.4790	Accept Ho	Not Significant
Sex	90	4.69	2.3070	18.6957	3.1013	Reject Ho	Significant
Civil Status	90	5.61	0.9337	1.08140	2.7106	Accept Ho	Not Significant
Highest Educational Attainment	90	5.55	0.9354	0.6055	2.3231	Accept Ho	Not Significant
Current Designation	90	5.25	1.2858	2.8516	2.2100	Reject Ho	Significant

Length of Service as to Current Designation	90	5.59	1.06794	0.3019	2.1988	Accept Ho	Not Significant
School Size							
No. of Teachers	90	5.69	0.5122	0.4196	2.4790	Accept Ho	Not Significant
No. of Learners	90	5.72	0.5807	0.3530	2.4790	Accept Ho	Not Significant
No. of Classrooms	90	5.50	1.01431	4.4325	2.2100	Reject Ho	Significant

*@0.05 confidence interval

The significant difference in the Financial Management Practices of the school heads when grouped according to demographic profile is shown in table 5. With regards to age, civil status, highest educational attainment, length of service as to current designation, number of teachers, and number of learners, the F computed values were all less than the F critical values. Thus, the null hypothesis was accepted and there is no significant difference.

As a contrast, when it comes to sex, current designation, and a number of classrooms, the F computed values were all greater than the F critical values. Thus, the null hypothesis was rejected. This means that the financial management practices of the school heads are affected or varies depending on the sex and current designation of the school head and the number of a classroom of the school.

With regard to sex, the result has shown that majority of the respondents are female. David, et al (2017) explained that women holding leadership positions are not unusual in the Philippines. Female managers and decision makers see additional aspects of problems and solutions in the daily operations of their companies. Furthermore, women's own challenges and experiences are different from men and having the greater participation of women in the industry level is good for business. Thus, the sex of the school head affects their financial management practices since how the female school head thinks and plans for the school differs.

For the current designation, as presented in DepEd order no. 39, s. 2007 or the qualifications standards for head teachers and principals, there's a difference with the required educational background, experience, and training. And for the number of classrooms, this may affect the financial management of the school head, since this may reflect the physical size of the school. The number of the classroom could mean that the school has bigger school ground which the school head manages and maintain its surrounding to be a conducive environment for learning of the students. Furthermore, since it is a factor for the computation of the school budget, this affects the amount of the fund manage and utilized by the school head.

CONCLUSION AND DISCUSSION

Based on the results, it is concluded that the respondents were typically in the age bracket of 41 to 50 years old, were females, and married. In terms of their educational background, most have their graduate studies, particularly earned units in the Master's Degree. Most of the school heads were appointed as Head Teacher I-IV and have served the school for 1-5 years. Also, most of the respondents were coming from small-sized school, having less than 10 number of teachers and have 100-500 students in less than 10 classrooms.

The respondents posted a strong agreement on the financial management practices of the school heads with regard to their school MOOE allocation. The school heads strongly agreed that they have good financial management practices relating to the components of Financial Management Framework of DepEd. On legislation and policies, school heads abide by provisions and guidelines of the agencies. On value and principles, school heads demonstrate professionalism and commitment to their work. In terms of authority and accountability, school heads take full accountability of all the funds' management entrusted to them. As regards roles and responsibilities, school heads see themselves performing their duties and doing what should be done as administrator of the school. On the financial management processes, school heads believe that they do well in planning and

budgeting, utilizing the budget, taking into accounts the use of the fund, and scrutinize their work as well before being audited by the internal auditors or the administrative assistants.

The school heads utilized the fund by prioritizing or using the fund for minor repair of facilities, buildings, and ground maintenance which likely have a bigger allocation of the fund. Then, they allow for the payments of utility (electricity and water) and communication (telephone and internet connectivity) expenses. Though procurement of school/office supplies is to be done quarterly, it landed on the third rank as it is used for the reports and other related office use. The other expenses such as security and janitorial expenses, training and travel expenses, small capital expenditures, repairs of tools and equipment used in teaching, and reproduction of activities depend on the amount of MOOE of the school because the bigger portion of their fund was allotted to the top three expenses charged to MOOE. As for graduation expenses and fidelity bond expense, these incur only once a year. Nonetheless, it is necessary to have an allotted fund for those expenses. As for the liquidation of the fund through the liquidation report of the school head, most of the documents for different expenses were arranged in order, however, as for the purchase of materials for repairs and maintenance, purchase of supplies/semi-expendables, janitorial services, and security services, there are documents which were interchanged. The school heads are somewhat confused with the required documents. Based on the interview conducted, part of the weaknesses of the school heads is the preparation of the report, as some of the participants of the interview mentioned that there are some lapses with the report, the correctness of the report is not 100% as the folders still have findings and are returned for compliance.

There is a moderate agreement on the strengths of school heads as financial managers of their school. On strengths, they have postgraduate studies, attended seminars and training, have good school organization and have been in service for long years which aid them in managing their MOOE fund. In terms of weaknesses, they moderately disagree with the statements as they overcome their weaknesses with their strength. However, there are still external factors that affect them and consider as their weaknesses like time, labor, and labor rate. Moreover, the strengths of the school heads such as conforming to the guidelines, practices like planning, and budgeting and decision making allow them to utilize the fund properly. The training, sharing of ideas from each school heads, and proper communication with the internal auditors or the administrative assistant help them also in process of utilization and on-time submission of reports. Also, time constraints, the availability of labor and labor rate are the commonly observed weaknesses by the participants. Though part of the strengths, Decision making and planning is also considered a weakness for some school heads, especially to those who are newly appointed.

Also, a moderate agreement was posted on the threats and opportunities to improve the practices of the school heads as financial managers of the school. For the threats, the unavailability of labor, staff, materials, and other supplies truly affect the utilization and liquidation of MOOE funds. It is also a threat to the school head regarding their safety and the occurrences of unexpected events like robbery. Some considered lack of knowledge on the guidelines relating to financial matters particularly MOOE as a threat. It also threatens the school heads is their projects would be disallowed. On Opportunities, it elicited that having the knowledge of MOOE policies, seminars and training, proper dissemination of information, and proper communication can eradicate mismanagement of the funds. Also, it is an opportunity for the school heads to have time management, more seminars and training financial management including planning and budgeting. Added to the opportunities mentioned and as stated in the indicators is the people's involvement in the process such as delegation of work and continuous transparency for the knowledge of the school's stakeholders regarding the uses of funds allocated for the school.

The Financial Management Practices of the school heads when grouped according to age, civil status, highest educational attainment, length of service as to current designation, number of teachers, and number of learners have no significant difference; thus, the null hypothesis is accepted. However, when grouped according to gender, current designation, and a number of classrooms, there is a significant difference; thus, accepting H1. As discussed, the female has different knowledge and experiences applied at work compared to male; the qualification standards for the position differs which entails experience and training acquired; and the size of the school, particularly the school premises affects the financial management practices of the school head.

Hence, it may be recommended for the School Heads that they should pursue the Masters and Doctorate Degrees for continuing professional education as well as training in accounting and management. They should share information or disseminate the policies and information to all concerned personnel/department for awareness. Also, they should continuously keep themselves updated with the policies. Also, it is important to consult the guidelines as well as the accounting section in preparing their SIP, AIP, and APP as most of the projects' source of fund included in the plan is MOOE as well as wisely allocate the school's fund for all expenses especially the school's project and Small Capital Expenditure worth P15, 000.00 and below. They may also create a plan to make labor, staff, materials, and other supplies available for the project during the liquidation period.

On the other hand, the division office, as suggested also by the respondents, should provide and conduct more seminars, training, and workshop related to Financial Management and Accounting for the school heads. The length of time for the liquidation period from the time of downloading to the date of submission of the report and compliance may be studied or reviewed, as this is the common weakness and threat seen by the school heads, PSDS, and administrative assistants. There should also be uniformity as to auditing the reports by the administrative assistants, and close monitoring and supervision of the financial management practices of the school heads. It is also suggested that in the selection of applicants for school heads position, courses or training on financial management and accounting should be added in the qualifications since school heads manage various school funds and submit necessary accounting reports.

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BAFE082:
**ANALYSIS OF COVID-19 GLOBAL PANDEMIC COINTEGRATED
TIME SERIES WITH FTSE BURSA MALAYSIA KLCI: A
CONCEPTUAL FRAMEWORK**

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ABSTRACT

The Covid-19 global pandemic is one of the world's most unprecedented disasters in millennium era. In the recent past, there have been outbreaks such as Ebola Virus Disease (EVD), Middle East Respiratory Syndrome (MERS), and Severe Acute Respiratory (SARS). Nevertheless, the distinguishes of Covid-19 global pandemic is its tremendous infection rate, which has spread to practically the entire globe. The Covid-19 pandemic has brought the entire global economy to a halt and hampered economic growth due to blockades in several countries, as a result, it considered as a Black Swan event, such as in the past, the 9/11 terrorist attack, SARS, 2008 financial crises. The similarity of these event has caused panic among investors, whose direct response is panic selling, such scenario affected the confidence of businesses and investors, which will subsequently influence their investment decision and the stock market performance. Therefore, this paper investigates the long run impact on the Covid-19 daily infected cases, Covid recoveries rate, Covid-19 death rate as critical variables in explaining the Bursa Malaysia stock market performance. Nonetheless, the foreign exchange rate, Malaysia gold price and crude oil price would be added as control variable as it could influence the outcomes of the empirical analysis. The employment empirical test of the Johansen and Julius co-integration and vector error correction model to investigate any long-term relationship exist between the selected time series data. This study further contributes and strengthen the finance literature regard to the disease outbreak on stock market performance.

Keywords: Covid-19, Stock Market Performance, Malaysia

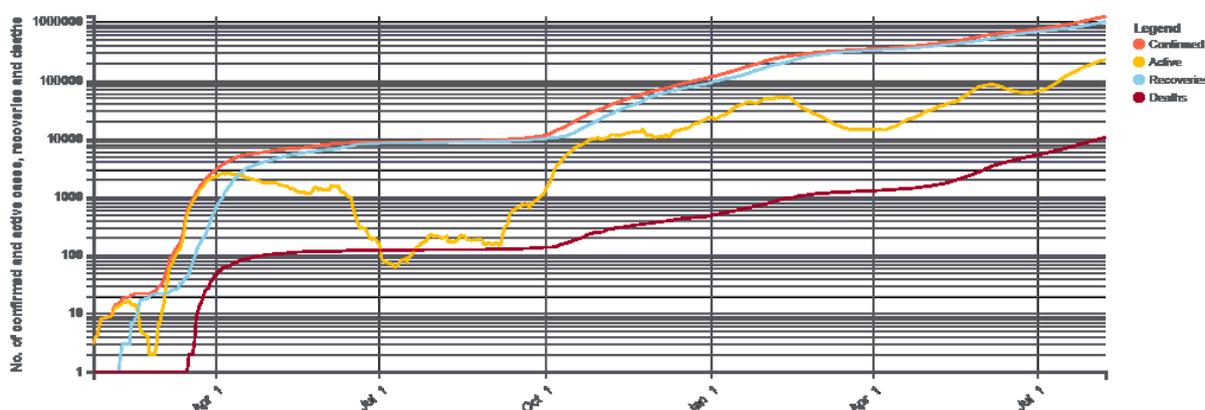
INTRODUCTION

The novel coronavirus or better known with synonyms of Covid-19 is type of viruses that cause disease in mammals and birds that caused respiratory tract infection. The global pandemic has impacted all inhabitants across the world since the year 2020 and brought many gigantic, negative impacts and challenging public health concerns towards the lives of people, social and global economic perspectives (Morgan, Awafo & Quartey, 2020). The earliest reports of Covid-19 in December 2019, a seafood-wet market located in Wuhan, China. The Covid-19 symptoms of infected are dry cough, fever, loss of smells or tastes, fatigue, and other respiratory symptoms. Moreover, the disease transmission through patients' droplets or close contact (Wu, Chen & Chan, 2020). The elevated speed of Covid-19 transmission has ravaged the whole world from China to the rest of the world and effective citywide lockdowns are implemented in across the globe. The World Health Organization (WHO) announced the Covid-19 is a worldwide pandemic on 11 March 2020 as the speed of transmission has caused 2,361,998 confirmed cases as well as 272,094 deaths as of 9 May 2020 (Lin et al., 2020). Shen, Fu, Pan, Yu and Chen (2020) highlighted as the pandemic is out of control spreading, the world experiences the worst global recession since 1930 and a number of companies filed for bankruptcy, deteriorate firm performances, an increasing number of unemployment and plunged world stock markets.

Covid-19 Epidemic in Malaysia

The Covid-19 pandemic is the most serious communicable disease outbreak in Malaysia after the SARS outbreak in the year 2003. The Covid-19 pandemic has so far claimed over 11,000 lives with accumulate number of daily infected of 1.36 million as at August 2021. The first wave of Malaysia epidemic outbreak from 25 January 2020 to 15 February 2020, with 22 cases identified. Nonetheless, most of the first wave cases were imported cases in Malaysia. The second wave of outbreak on 27 February 2020 with several clusters of cases and the huge number are reported from a religious gathering in the Sri Petaling Tabligh which is attended more than 14,500 Malaysians and 1,500 foreigners. On 15 March 2020, the number of daily infected cases from all states surged from 41 to 190, most of which were traced attended the Sri Petaling Tabligh. The number of daily infected cases continued raised over the 100 and the Malaysia's Ministry of Health announced Malaysia was in the late containment phase of Covid-19 and a respond and contingent plan needed to prevent the spread of the disease.

Figure 1: Malaysia Covid-19 Daily Confirmed Cases, Active Cases, Recoveries Rate and Death Rate



In responding to the global pandemic, the government of Malaysia officially promulgated the first Movement Control Order (MCO) from 18 March 2020 to 31 March 2020, to prevent and control the virus spread through a social distancing, a compulsory of face mask, prohibition of mass movements, restrictions on the international and foreign entry and closure of education, government, and private businesses. As that the number of daily cases and active case increasing, the government of Malaysia announced the second phase of MCO effective from 1 April 2020 to 14 April 2020. Further measures were instilled such as a 10 km travel radius for all travelers and the banning of all types of gatherings except for funerals. The number of cases in Malaysia dropped to between double-digits during July to September 2020 and entered the third wave of outbreaks in early October. The third wave of the Covid-19 outbreak driven by cases in Sabah election on 26 September 2020, and people returning to Peninsular Malaysia from high-risk areas in Sabah also tested positive (Ministry of Health, 2020). The government of Malaysia has announced the implement the Conditional Movement Control Order (CMCO) for the entire state including Sarawak and Sabah to stop the spread of the Covid-19 disease outbreak. However, until today we are still dealing with the third wave of the outbreak, the number of cases recorded did not decline because of the movement control order. Thereafter, the as the Covid-19 cases spike above the 5,000 cases on 3 May 2021, government of Malaysia imposed total lockdown from 1 June 2021 and national recovery plan to help the country emerge from the Covid-19 pandemic and its economic fallout.

Investor sentiment, Stock Market Performance in Global Pandemic

A Malaysia stock market index is the benchmark and measurement of stock market performance (Hayes, 2021). The stock market can provide insight into the overall trend of the capital market and be used as the indicator of economic trends, as well as clues to possible future trends

(Corporate Finance Institute, 2019). In the Covid-19 global pandemic, the Bursa Malaysia index fell to its new lowest level since October 2009, as investors reacted to the news on the implementation of MCO by government of Malaysia (Idris, 2020). The empirical review indicated that a global stock market returns fluctuate due to those contagious infectious illnesses, for an instance, the SARS epidemic and EVD epidemic (Al-Awadhi et al., 2020). The plunge in the stock market inevitably brought huge losses to investors, therefore is it vital provides a comprehensive analysis of the association between Covid19 and the stock market index, which serves the interest of investors when making investment decisions during difficult times.

The Covid-19 global pandemic is an event like SARS and Ebola that affects the volatility of the stock market in the world with a most of the nations in the world instigated a lockdown to prevent the spread of such disease. The government of Malaysia implemented MCO from 18 March 2020 to control on the increase daily conformed cases, in such it slows down the infectious rate of infection but there business and corporate operations affected badly and subsequently contribute to the slow in the economic. In addition, the uncertainty that arises from the number of Covid-19 cases will affect the investment strategy and behavior of the investors, this would finally influence the volatility of the stock market.

Although there is immerse vaccination program, the pandemic risk will remain if the variation of Covid-19 spreads, causing the government to reimpose lockdown (Lee, 2021). Such a scenario could affect the confidence of both businesses and investors, which will subsequently influence their investment decision. The Covid-19 pandemic has impacted the operational costs and sales revenue of companies, hence the stock price of the company is indirectly affected followed by stock market return. Investors may think twice before they invest if the stock market return is going to fall below their expectations. In the stock market, good news can be favorable economic signs, such as new product launches, corporate acquisitions, and good earnings reports. In the current situation, the good news for investors in this pandemic time is the Covid-19 recovery rate. The recovery rate is significant in determining a country's progress toward Covid-19 control. The recovery rate is one of the indicators for the government of Malaysia to reopen of some economic during the MCO and this is a positive signal to investors.

This study included foreign exchange rate, Malaysia gold price and Brent crude oil price as control variables in influencing the Bursa Malaysia stock market performance. The changes in the currency value will stimulate the export and have a significant impact on balance of trade and provide more investment opportunities in Malaysia. Gold price movement is sensitive to market change witness that gold price drop as the Covid-19 global pandemic in Malaysia. Furthermore, the negative effect can be observed obviously in gold and stock market in March 2020, which stock price drop sharply, the gold price has increasing trends. The scenario above showed the relationship between gold price and stock market index and both of them could be influenced by the market change. Brent crude oil accounts for more than half of all crude oil traded globally, and it is used as a benchmark price for oil purchases. The world lockdown resulting in the oversupply of Brent Crude oil and oil producer slash the prices to clear stockpiles (Kaur, 2020). The consequently to this as Malaysia as an oil-exporting and oil-related income country are plausible to influence the cash flows and Bursa Malaysia performance. Hence, in this study will further determine the extent of reaction of Bursa Malaysia index interacts with Covid-19 issues in Malaysia.

LITERATURE REVIEW

In the context of stock valuation models, an asset's current price is equivalent to the present value of all future expected cash flows (Wickremasinghe, 2011). Changes in the macroeconomic variables change the expected cash flows, which impact the asset's price (Wickremasinghe, 2011). Notwithstanding, the Arbitrage Pricing Theory (APT), presented by Ross (1976), suggests the relationship between macroeconomic variables and stock prices.

Fama (1970) established that the market in which prices "fully reflect" the available information is called "efficient". This claim of Fama (1970) became famous with the name of "Efficient Market Hypothesis (EMH)". EMH is one of the most cited theories, which define the relationship between macroeconomic information and stock prices. EMH is related to the asset prices' behaviour in the market. The term "efficient market" refers to the stock market; however, this concept could apply to other asset markets (Queku et al., 2020). EMH postulates that security price is a reflection of

the available information regarding security's fundamentals (Malkiel, 2011). EMH has based on the tenet that the change in an asset price is unpredictable. EMH is also associated with the concept of "random walk", which states that asset price change exhibits random departure from its previous price (Malkiel, 2003).

According to Raza et al. (2016), emerging economies' stock markets are vulnerable to global news and events, which are occurring due to uncertain and volatile environments. Among such events, Covid-19 proved to be devastating for the world's economic outlook and stock markets. It was stated by Baker et al. (2020), before Covid-19, 2003 SARC epidemic, 2015 Ebola epidemic, Bird flu and Swine flu were short-lived in volatility. However, Covid-19 is a massive source of volatility for the stock market. Besides, the fluctuations in macro-economic variables are also posing a threat to the stability of stock markets.

Covid-19 Daily Confirmed Cases, Recoveries Rate and Death Rate

The Covid-19 was first detected on December 31, 2019, in Wuhan, situated in Hubei Province of China. Later, it took control of the whole world (Abuzayed & Al-Fayoumi, 2021). It spread rapidly and caused 1 million infections and 60,000 death within one month (Worldometer, 2021). Such devastating consequences of Covid-19 compel WHO to declare it a global pandemic on 20 February 2020.

The first case of Covid-19 was detected in Malaysia on 25 January 2020 (Elengoe, 2020), followed by a calm period until the cases took a rapid rise at the end of February 2020 after a gathering during a religious event (Tang, 2020). At the beginning of the Covid-19 outbreak, the Malaysian government adopted different strategies such as travel restrictions and quarantine. However, by considering the rapid increase in cases, Movement Control Order was rolled out in Malaysia on March 18, 2020. This order required closing all businesses except those providing essential items and services. The Movement Control Order (MCO) not only restricts human movement but also reduced the profit of firms. Consequently, their stock prices were impacted (Chia et al., 2020).

It was argued by Yan et al. (2020) that in times of global crises such as Covid-19, the stock markets are adversely impacted in the short run; however, such impact is subsidized in the long run. Wang et al. (2021) found convincing evidence that Covid-19 significantly influenced the stock prices of solar energy sources. Giglio et al. (2021) observed that during Covid-19, investors became pessimistic in the short run about the performance of the stock market. The announcement of the first case of Covid-19 in Saudi Arabia negatively impacted its stock prices in the short run.

It is evident from existing literature that the stock market responds negatively to an increase in the daily number of Covid-19 cases (Ashraf, 2020). In Malaysia's market, Lee et al. (2020) found the inverse relationship between the number of Covid-19 cases and all sectoral indexes (except real estate investment fund) of the Malaysian equity market. On the other side, Chia et al. (2020) and Ahmed (2020) did not find any such relationship in terms of the stock markets of Malaysia and Pakistan, respectively.

As the daily deaths from Covid-19 are increasing, governments are adopting the lock-down policies and imposing travel bans and providing stimulus packages to offset jobs losses and slowdown in the economic activity (Phan & Narayan, 2020). Baek et al. (2020) found the negative impact of daily covid-19 deaths on the stock market volatility of the United States. Chia et al. (2020) reported the negative but insignificant impact of daily Covid-19 deaths on the selected indexes of the Malaysia stock market. Similarly, Ahmed (2020) also found an insignificant relationship in the context of the Pakistani stock market.

The research of Ahmed (2020) found a significant association between Covid-19 recoveries and stock market performance in Pakistan. In the US market, Baek et al. (2020) established that negative news has more impact on stock market volatility than positive news in the shape of recoveries. Aslam (2020) argued that recovery from Covid-19 depends on the prevalence of the epidemic. He reported that as the virus's spread increased, recoveries also increased with fewer deaths. Yagli (2020), in the market of Turkey, claimed that an increase in Covid-19 recoveries reduce the stock market volatility

Foreign Exchange Rate

Two portfolio models named “Flow-Oriented” (Dornbusch & Fischer, 1980; Gavin, 1989) and “Stock-Oriented” or “Portfolio Balance” (Branson, 1981) explain the link between exchange rate and stock prices. According to the “Flow-Oriented” model, a decline in stock prices reduces the local investors’ wealth as well as the liquidity in the economy. The decline in liquidity causes the interest rate to fall. Consequently, capital outflows occur, and the currency depreciates (Adjasi, 2009). “Stock-Oriented” or “Portfolio Balance” model states that the exchange rate serves as an equilibrium factor for demand and supply of assets (stocks and bonds). Thus expectations about changes in currency value can significantly impact the value of financially held assets. For example, if the local currency depreciates against foreign currency, foreign currency returns increase. It will motivate investors to shift their funds from domestic assets (stocks) to foreign assets. This phenomenon will depress the stock prices. In terms of empirical evidence, Abbas and Wang (2020) study found significant volatility spillover from exchange rate to stock prices in the USA market. Additionally, Wickremasinghe (2011) reported the long-term causal relationship from exchange rate to Sri Lankan share market. The Bahmani-Oskooee and Sohrabian (1992) study showed short-run bidirectional causality among exchange rate and S&P 500 index performance. However, they found no causality in the long run.

Gold Prices

In the financial market, gold is considered a “safe haven investment”. It is the oldest form of money also used as a hedge against inflation. It is assumed that gold has no correlation with other types of assets. This non-existence of correlation is a prominent feature of gold, as, in this era of globalization, most of the other assets have significant correlation among them. Baur and Lucey (2010) found that gold proved to be a safe haven in extreme stock market conditions.

Shabbir et al. (2020) concluded a positive relationship between gold prices and stock prices. Raza et al. (2016), with the help of the nonlinear ARDL approach, empirically proved that gold prices have a positive association with the large emerging BRICS economies’ stock prices. On the contrary, the impact was negative in the case of stock markets of Indonesia, Chile, Thailand, Malaysia and Mexico. Similarly, Adjasi (2009) study found the significant negative volatility from gold prices to stock prices in the market of Ghana during 1991-2007. Gilmore et al. (2009) observed the short term unidirectional causality from gold prices to large-capitalization companies of the S&P 500 index. They also reported that gold prices and large-cap stock prices restore long-term relationships by adjusting to disturbance.

Crude Oil Prices

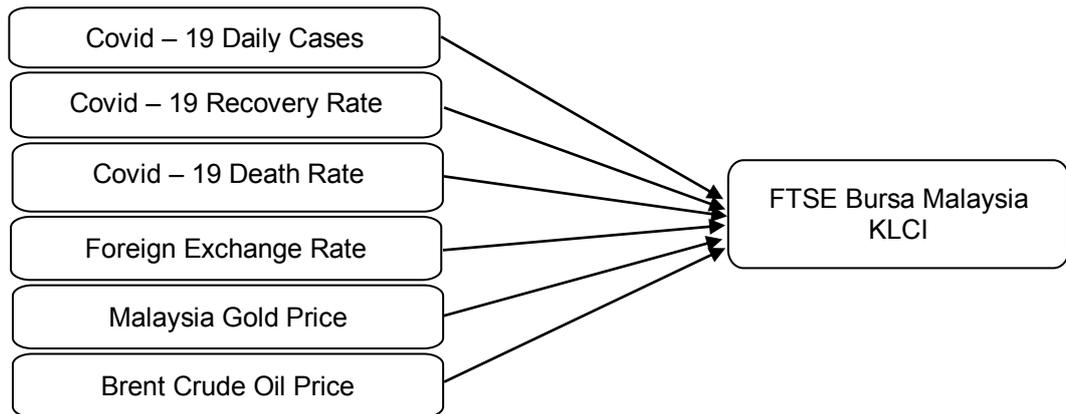
The crude oil market is known as the world’s largest commodity market, and oil is considered the vital source of energy all over the world (Shabbir et al., 2020). Lee et al. (2020) found the significant impact of Brent oil prices on the stock prices of Malaysian companies. In line, Gjerde and Sættem (1999) documented that the stock market accurately responds to the changes in oil prices in the Market of Norway. Additionally, Significant negative volatility from oil prices to stock prices was observed by Adjasi (2009). On the contrary, Shabbir et al. (2020) applied an autoregressive distributed lag test and established the significant positive effect of oil prices on stock prices in Pakistan. In contrast, Anderson and Subbaraman (1996) reported the insignificant relationship between oil prices and stock prices in the market of Australia. Raza et al. (2016) argued that historical fluctuations in global oil prices indicate that the world is going to enter the era of higher oil prices fluctuations. In the market of Nigeria, Adaramola (2012) reported that oil prices shocks are followed by a significant positive return in the short run, however, such return becomes negative in the long run.

Random Walk Theory

Random Walk Theory, often known as the random walk hypothesis, is a stock market mathematical model. The theory’s proponents think that the prices of stock in the stock market follow a random walk, it assumes that the stock market moves in an unforeseen manner (Corporate Finance Institute, 2021). According to the hypothesis, the future stock price of each stock is independent of its past movement as well as the price of other stocks, as a result, any attempt to forecast future price movement, whether through fundamental or technical analysis is fruitless.

Since the random walk theory holds that it is difficult to foresee the movement of stock prices, it is also impossible for a stock market investor to outperform or beat the market in the long run (Corporate Finance Institute, 2021). It suggests that an investor cannot outperform the market without taking on a significant amount of additional risk. Consequently, the optimal plan for an investor is to invest in a market portfolio, which is a portfolio that closely resembles the total stock market and whose price perfectly reflects the movement of the prices of all stock in the market. Nevertheless, Malaysia stock market performance shown a declining wild fluctuation during covid 19 global pandemic since the January of 2020 and touched below the threshold of 1,600 point. A slew of recent performance reaffirming most of the investor might consistently outperform the entire market by short the position to take short term profit and resulted in the formation of an expanding high trading volume.

Figure 1: Conceptual Framework



RESEARCH METHODOLOGY

The quantitative data and secondary data are retrieved from Bloomberg Terminal and Kementerian Kesihatan Malaysia to conclude the dynamic relationship between covid-19 daily cases, covid-19 recovery rate, covid-19 death rate, foreign exchange rate, Malaysia gold price and world crude oil price in relation of co-movement to FTSE Bursa Malaysia KLCI. The time series data transformation into numerical data and statistics to generate descriptive outcome and contribution to the contemporary finance literature. Moreover, the daily secondary data ranging from Monday to Friday is retrieved from 18 March 2020, which the enforcement of Malaysia first movement control order until 31 December 2021 with sample size of 443. The quantification of independent and dependent variables in this study as in table 1.

Table 1: The Quantification of the Study Variables

Variable		Quantification	Unit of Measurement	Source
FTSE Bursa Malaysia KLCI		Top 30 companies market capitalization listed on the Bursa Malaysia Main Board	Index	Blomberg Terminal
Covid	Daily Cases	Statistical data by Kementerian Kesihatan Malaysia	Number of Cases	Kementerian Kesihatan Malaysia
	Recovery Rate			
	Death Rate			
Control	Foreign Exchange Rate	The market quotation price of USD / MYR	Rate	Blomberg Terminal
	Malaysia Gold Price	The force of demand and supply of Malaysia gold price	Per ounce (MYR)	
	Brent Crude Oil Price	The force of demand and supply of physical world crude oil price	Per barrel (USD)	

Data Analysis

Unit Root Test

The unit root test is used to determine the order of each of the study variables integration and is important for identify any stochastic trend. The series of data are collected to check the stationarity to prevent the result to be invalid (Gujarati & Porter, 2009). The procedure tis to ensure the level or the first difference of series are constant across the cointegration test. Most economists will argue that a macroeconomic time series contains unit root and its fluctuation over time might suggest a non-stationary trend. It is vital to have a stationary time series to avoid biased results which is called spurious regression. Therefore, in this study it employed the Augmented Dickey-Fuller (ADF) test is used to analyze the stationarity of the study variable to perform the regression of the series' first difference against the series lagged one and lagged difference terms with either a constant or a time trend. The equation of ADF unit root test is expressed as in equation 1.

$$\Delta Y_t = \mu + \delta Y_{t-1} + \sum_{i=1}^k a_i \Delta Y_{t-i} + \varepsilon_t \quad (1)$$

The Johansen and Julius Co-integration Test

The Johansen and Julius co-integration test is a procedure for testing co-integration and the data analysis will further investigate long run co-movement of the covid-19 daily cases, covid-19 recovery rate, covid-19 death rate, foreign exchange rate, Malaysia gold price and world crude oil price in relation to FTSE Bursa Malaysia KLCI. Nonetheless, the trace test and maximum eigenvalue test of co-integration vectors to develops a co-integration connection through computing the independent and dependent variables long run equilibrium. Nonetheless, the optimum lag length to be determined to ensure that the model's accuracy and to maintain a dependability of the study model (Gujarati, 2009). The trace test and maximum eigenvalue test as in the equation 2 and 3 respectively.

$$\lambda_{trace}(r) = -T \sum_{i=r+1}^g \ln(1 - \lambda_i) \quad (2)$$

$$\lambda_{max}(r, r + 1) = -T \ln(1 - \lambda_{r+1}) \quad (3)$$

The Johansen and Julius Co-integration model in this study as in the equation 4.

$$KLCI_t = \alpha + \beta_1 CDC_t + \beta_2 CRR_t + \beta_3 CDR_t + \beta_4 FX_t + \beta_5 MGP_t + \beta_6 BCOP_t + \varepsilon_t \quad (4)$$

Where,

$KLCI_t$	=	FTSE Bursa Malaysia KLCI index at time t
α	=	Constant
$\beta_1 CDC_t$	=	Covid-19 daily cases at time t
$\beta_2 CRR_t$	=	Covid-19 recovery rate at time t
$\beta_3 CDR_t$	=	Covid-19 death rate at time t
$\beta_4 FX_t$	=	Foreign exchange at time t
$\beta_5 MGP_t$	=	Malaysia Gold Price at time t
$\beta_6 BCOP_t$	=	Brent Crude Oil Price at time t
ε_t	=	Error term

Vector Error Correction Model

The Vector Error Correction Model (VECM) is developed by Engle and Granger to investigate any long-term relationship exist between the selected time series data and to generalized vector autoregression which is restricted to co-integrated data sets which are non-stationary. The co-integration regression examines the long run relationships among the level series of study variable in the study, whilst the development of VECM is to assess presence of dynamic adjustments amid at the first differences of the independent variable (Diebold & Watson, 1996). The VECM applied in this study as in the equation 5.

$$\Delta y_t = \alpha\beta' y_{t-1} + \sum_{i=1}^{p-1} \Gamma_i \Delta y_{t-i} + \varepsilon_t \quad (5)$$

CONCLUSION

In a nutshell, the in Covid-19 global pandemic has stun Malaysia economic growth as well as the Bursa Malaysia performance has been significantly deteriorated and touched below the threshold of 1,600 point. The long run impact relationship among the various Covid-19 variables and Bursa Malaysia performance should be given necessary attention by researchers to make sure that the stability of Malaysia stock market improves and therefore remains competitive to drive the economic growth of the country. Therefore, the objectives of this study and its empirical findings are not only important to investor and businesses, but also to relevant agency policy makers in formulate holistic method stabilize the stock market. Moreover, this study provides the knowledge for formulating economic and government policies necessary for stabilizing and stimulating the economy of a country. The conceptual in this study lays a theoretical framework for establishing the contemporary disease-stock performance relevance, finance foundation basis and further contribution to the finance literature review.

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BAFE087:
A CONCEPTUAL STUDY ON UTAUT MODEL, STUDENTS' INTEREST TO ACCEPT ONLINE LEARNING AND THE ROLE OF PERCEIVED FINANCIAL COST DURING THE COVID-19 PANDEMIC

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Abstract

The education system nowadays has been impacted by Covid-19 pandemic since year 2020 and has changed the overall landscape of the education system in Malaysia. Students and educators are required to be familiar with the new norm of learning and teaching methods through online which outside the physical classroom. Due to this tremendous change from physical to online learning among students, it leads to various issues such as the implementation, practicality, cost and outcomes of quality education according to the Malaysian Education Blueprint (2015 – 2025). Therefore, this conceptual paper shall further explore on the factors that influencing students' interest in accepting online learning during the Covid-19 pandemic in Malaysia. This study shall discuss on the application of Unified Theory of Acceptance and Use of Technology (UTAUT) model that comprise of Performance Expectancy, Effort Expectancy, Social Influence and Facilitating Conditions. Furthermore, this study shall include a mediating variable that is Perceived Financial Cost. This conceptual paper shall provide further insight and understanding on the application of UTAUT model among students' interest towards online learning during the pandemic scenario. In addition, the government and higher education institutions should be able to focus strategically on the benefits and challenges in adopting latest advancement in technology among students and to ensure the effectiveness of online learning implementation during the period of Covid-19 pandemic that will be soon towards endemic.

Keywords: online learning, students' interest, covid-19 pandemic, UTAUT, perceived financial cost

INTRODUCTION

The higher education institutions were significantly affected by Covid-19 disease that impacted the students in learning process from physical classroom towards online learning. These impacts include social distancing, quarantines, isolation measures, campus closure, border closures, and travel restrictions (QS, 2020). Due to this scenario, the universities around the world were facing unprecedented challenges, including both the teaching committee and the students (Selvanathan, Hussin & Azazi, 2020). An obvious obstacle is due to the limited availability of devices to support online learning such as the internet, hardware and software devices. According to Hamid and Khalidi (2020), a survey by the Ministry of Education (MOE) involving close to 900,000 students indicate that 37% of students do not have any appropriate devices, only 6% to 9% of students own a personal computer and/or a tablet and even if a household has a personal computer, many will have to share with other household members for work or study. In addition, this matter also creates pressures among the students and parents especially financial cost to support online learning activities at home effectively and efficiently. In order to have a smooth and effective online learning process, good internet connection is required. However, the current fixed broadband penetration rate which provides faster and more reliable connectivity was only approximately 8% per 100 people (Hamid, Khalidi & Sundaram, 2019; Institute for Public Health, 2015). The rapid advancement of new technologies has dramatically required the higher education institutions (HEIs) to provide online teaching and learning platforms in universities campuses through blended learning which combines concepts from both online learning and the face-to-face learning environment (Ismail, Bakar & Wafa, 2020). However, the main challenges for a successful online learning to take place is lack of training, facilities and

infrastructure, students' preparation and learning tools (Munezero, Irura, Kirongo, Etiegni & Suhonen, 2016). Thus, adequate facilities must be provided for online learning to be effectively successful (Ismail et al., 2019). Students must have strong self-discipline in time management since there is no face-to-face interaction from instructors. Instructors must also undergo adequate training to develop suitable learning materials for the students (Kumar & Owston, 2016). Therefore, the aim of this paper is to further explore the students' interest and acceptance towards online learning during the pandemic. The Unified Theory of Acceptance and Use of Technology model (UTAUT) will be used for this study by including the constructs of performance expectancy, effort expectancy, social influence, facilitating conditions and perceived financial cost. This paper shall provide further insight and understanding on the application of UTAUT among students and during the period of Covid-19 pandemic as well as towards the endemic situation. Furthermore, the government, the higher education institutions and also the universities are able to foresee on the challenges and perceptions among students to ensure the effectiveness of online learning during pandemic and endemic situation.

FINDINGS OF LITERATURE REVIEW

Unified Theory of Acceptance and Use of Technology (UTAUT)

There are varieties theoretical models to determine factors that influence behavioural intentions to adopt online learning. Davis (1986) proposed Technology Acceptance Model (TAM) as enhancement of Theory Reasoned Action (TRA) to explain and predict user behaviour of information technology. While in the year 1989, Davis found that the external variables have to be considered towards the original constructs which are perceived ease of use and perceived usefulness. TAM was applied in many studies such as Jimenez, Garcia, Violante, Marcolin and Vezzetti (2021); Lazim, Ismail and Tazilah (2021); Martono, Nurkhin, Hasan, Indah and Wolor, (2020) because the model has a specific concept of ease of use and usefulness and the behavioural intention of a person on information system. However, Venkatesh, Morris, Davis and Davis (2003) stated that TAM only can be explained as thirty to sixty percent of user's behavioural intention on information system. The study also revealed that the UTAUT could be described as a behavioural intention that might be higher for the person who familiar with the information system. There are three determinants of behavioural intention to use (performance expectancy, effort expectancy and social influence) and two direct determinants of usage behavior (intention and facilitating condition). Many studies on the extension of UTAUT model to the original constructs were conducted for instance, Carter and Schaupp (2008) was used UTAUT model with internal cause consideration about trust, self-efficacy and experience. In between, Lu, Yu and Liu, (2009) explained about income and location as a moderation mechanism in UTAUT model. Besides that, Oh and Yoon (2014) was used UTAUT with the combination of internal cause that are trust and flow experience and used e-learning versus online game as a moderation mechanism. It showed that the results of that studies mentioned above have demonstrated UTAUT as the most effective model for analyzing technology acceptance. To proof, many researchers applied the UTAUT model to unify the existing theories regarding how users accept technology (Venkatesh & Morris, 2000; Venkatesh et al., 2003) and emphasized the extension of model is important for theoretical contribution on information system (Venkatesh, Tong & Xu, 2016).

Performance Expectancy (PE)

Performance expectancy can be defined as "the degree to which an individual believes that using the system will help him or her to attain gains in job performance" (Venkatesh et al., 2003, p. 447). In other words, performance expectancy can be denoted as individuals' belief regarding to adopt technologies that will enhance their performance. In the context of e-learning, Twum, Ofori, Keney and Korang-Yeboah (2021) opined that student believe when using the particular technology will help them in undertaking educational activities better. On the other hand, performance expectancy represents as "perceived usefulness" within TAM that can influence students' interest to accept online learning and believe that the online platform used will improve their performance. According to Tiwari (2020), students believe that when attending online classes can improve their academic performance. In addition, Jameel, Abdalla, Karem and Ahmad (2020) emphasized that students should develop strong judgement about e-learning ability to produce significant outcomes for their work. Besides that, El-Masri and Tarhini (2017) expected that the e-learning system is useful and will add value to students' educational experience so they are more likely to adopt the technology. In the UTAUT

model, performance expectancy is theorized as a direct determinant of behavioural intention and it is the strongest determinant to adopt technology (Venkatesh et al., 2003).

Effort Expectancy (EE)

Effort expectancy can be defined as “the degree of ease associated with the use of the system” (Venkatesh et al., 2003, p. 450). In other words, effort expectancy can be interpreted as the level of convenience associated with the use of technology (Venkatesh, Thong & Xu, 2012). It showed that the more efficient the system, the more people will continue to use the system. In the context of e-learning, Twum et al. (2021) opined that students’ perception of the ease of use of an e-learning system will encourage them to develop the intention to use the system. On the other hand, effort expectancy represents as “perceived ease of use” within TAM that can influence students’ interest to accept online learning as a new platform for their studies as long as the platform can be used easily free of effort. To give an idea, Tiwari (2020) mentioned that the students will attend online classes when they think it is easy for them. In addition, Jameel et al., (2020) aimed students’ views on whether the e-learning process is easy and effortless. Besides that, El-Masri and Tarhini (2017) expected that if the system is easy to use, then the students are more likely to adopt and use the system. In the UTAUT model, effort expectancy is theorized as a direct determinant of behavioural intention and will be stronger determinant of individuals’ intention to adopt technology (Venkatesh et al., 2003).

Social Influence (SI)

Social influence can be defined as the degree to which a person believes that the society in which they work necessitates technology. Much of the current literature on social influence pays particular attention to the significant impact on the intention at the early stages of technology adoption. Mehta, Morris, Swinnerton, and Homer (2019) found that social influence is the social norm pressure articulated in the interpretation of group effect on an individual’s choice. This view is supported by Jameel et al. (2020), who writes that social influence also refers to social forces from the outside world that affects people’s perceptions, actions, and behaviour. Venkatesh et al. (2003) draws our attention to reaffirmed the influence of social influence, particularly in the early stages of adoption. Most of the individuals’ ideas influenced other people’s views, causing them to engage in similar behaviours even if they did not want to. However, Venkatesh and Davis (2000) found that social influence increased only in a mandatory scenario and reduced in a voluntary situation. Numerous studies have attempted to explain social influence is particularly essential in influencing intention to utilize technology. Lecturers, parents, friends, and institutions are expected to affect the students to use compulsory online learning to accomplish educational objectives. The studies presented thus far provide evidence that students may feel the urge to build the intention to utilize online learning to complete a course and may be influenced to use it by their instructors and friends (Attuquayefio & Addo, 2014; Im, Hong & Kang, 2011; Twum et al., 2021).

Facilitating Conditions (FC)

Facilitating conditions can be defined as the degree to which an individual believes that an organisational and technical infrastructure exists to enable the use of the system. The concept of supportive infrastructure, which indicates how convenient a system could be used. Students’ ability to get the necessary tools and support to improve the ease of use of online learning services would influence facilitating conditions (Jameel et al., 2020). Taylor and Todd (1995) highlight the facilitating conditions elements such as time and money and technology factors such as compatibility concerns that affect usage. For example, when all other factors are equal, it is reasonable to assume that if time and money are limited and technical compatibility declines, intention to use and users will be less likely. Likewise, Thompson, Higgins and Howell (1994) hold that external control relating to the environment can also be considered facilitating conditions, as behaviour cannot occur if the environment prevents it or if the facilitating conditions make the activity difficult. In other words, facilitating conditions are factors in the environment that influence a person’s perception of how easy or difficult it is to use technology to perform a task; for example, when using technology in the workplace, facilitating conditions are thought to include the availability of training and support. Ngai, Poon and Chan (2007) draw on an extensive range of sources to explain facilitating conditions were found to have a beneficial impact on attitudes toward computer use. Furthermore, technical support was scored high on the list of factors that influence the use of technology among the various sorts of

support provided to them. Technical assistance refers explicitly to the provision of helpdesks, hotlines, and online support services. Technical help has been identified as a significant component in the acceptability of technology in the classroom (Williams, 2002) and satisfaction (Mirani & King, 1994) and linked to more positive attitudes about computer use. Together these studies provide important insights into the importance of online learning. Facilitating conditions have a direct impact on utilisation. Technology experience is critical in assisting and supporting students in managing a specific event through information technology systems.

Perceived Financial Cost (PFC)

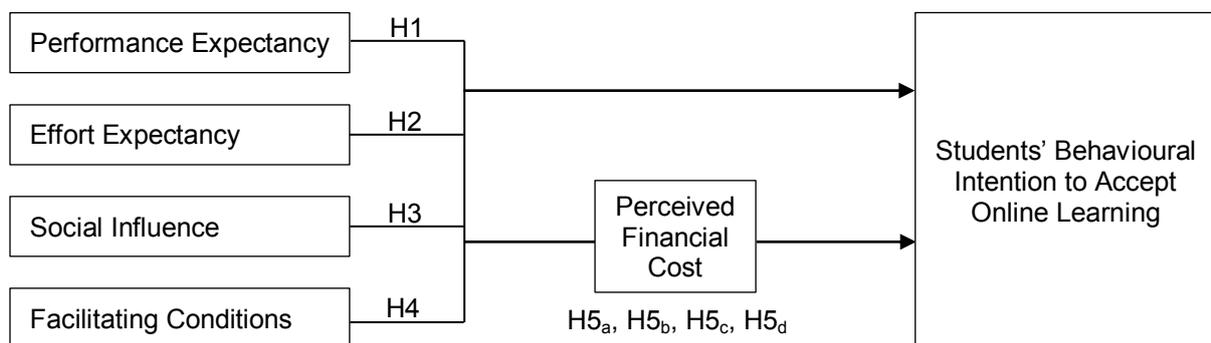
Chang and Tung (2007) defined perceived financial cost in the educational perspective as the extent to which a person believes that using online learning will cost money. According to the survey conducted in Pakistan by Adnan and Anwar (2020), the majority of students incompetent to have an internet connection due to high costs. Despite that, costs are important for students to adopt online learning. However, Chang and Tung (2007) found that the perceived financial cost has a negative influence on behavioural intention for the online nursing courses in Taiwan. Similarly, Tiwari (2020) highlighted that perceived financial cost is insignificant to behavioural intention for undergraduate students in GLS University, Mathura. On the other hand, Twum et al. (2021) found that perceived financial cost has a significant effect on the intention to use online learning at Ghana University. The result indicated that online learning would include the cost of computer and internet data.

Behavioural Intention (BI)

Behavioural intention is expected to have a significant influence on technology usage. Venkatesh et al. (2003) suggested that behavioural intention to use a given technology has significant influence on usage behavior. In other words, behavioural intention is behavioural tendency to keep using technology in the future. Hence, this study measures behavioural intention instead of actual usage. This is consistent to previous studies that have demonstrated students' behavioural intention to frequently use e-learning in the future (Twum et al., 2021); students' attitude towards adoption of online class (Tiwari, 2020); to examine students' behavioural intention to use e-learning system (Jameel et al., 2020; El-Masri & Tarhini, 2017). According to Venkatesh et al. (2003), UTAUT model is widely used to predict individuals' behavioural intention that considers the determinant effect of four factors that are performance expectancy, effort expectancy, social influence and facilitating conditions. While, for this study, the perceived financial cost become a mediating variable to examine the relationship between four factors mentioned above towards students' behavioural intention to accept online learning.

CONCEPTUAL FRAMEWORK

Figure1: Proposed Conceptual Framework



This study proposes a conceptual framework to examine whether there is a relationship between UTAUT model constructs that consist of performance expectancy, effort expectancy, social influence, facilitating conditions along with a mediating variable which is perceived financial cost towards students' behavioural intention to accept online learning. Therefore, the following hypotheses are proposed as:

- H1: There is a significant relationship between PE and students' BI to accept online learning.
H2: There is a significant relationship between EE and students' BI to accept online learning.
H3: There is a significant relationship between SI and students' BI to accept online learning.
H4: There is a significant relationship between FC and students' BI to accept online learning.
H5_a: There is a significant relationship between PE and PFC towards students' BI to accept online learning.
H5_b: There is a significant relationship between EE and PFC towards students' BI to accept online learning.
H5_c: There is a significant relationship between SI and PFC towards students' BI to accept online learning.
H5_d: There is a significant relationship between FC and PFC towards students' BI to accept online learning.

RESEARCH METHODOLOGY

The survey is in progress and contains several questions designed to capture the constructed model proposed in this study. The questions are modified based on previous research-validated scales. The attributes will be developed to the context of the UTAUT model towards students' interest in accepting online learning during the Covid-19 pandemic. Hence, this study will use the original questionnaire from the UTAUT model to measure the independent variables: performance expectancy, effort expectancy, social influence and facilitating conditions. In addition, the perceived financial cost is added as a mediating variable to examine the relationship between UTAUT constructs and students' behavioural intention to accept online learning.

IMPLICATIONS AND CONCLUSION

This study is a conceptual paper that used the UTAUT model as the baseline to predict students' behavioural intention to accept online learning. There are several implications identified from this proposed study regarding government policy and Ministry of Higher Education (MOHE) guidelines. Government of Malaysia and MOHE are concerned about the benefits and challenges of adopting the latest system and advancing technology among university students. The challenge is how to encourage and attract the students to accept online learning during the Covid-19 pandemic. In addition, the government and MOHE should be able to focus strategically on the benefits and challenges in adopting latest advancement in technology among students. This is to ensure the effectiveness of online learning implementation during the period of Covid-19 pandemic that will be soon towards endemic.

Besides that, this proposed study will help policymakers and higher education institutions gain a deeper understanding of factors that influence the students' interest and decisions to adopt technologies which to formulate strategies to encourage the students' acceptance of online learning during the Covid-19 pandemic. Furthermore, policymakers and higher education institutions should look into how to enhance the online learning process. However, this proposed study is conducted within a short period. Therefore, students' perceptions of performance expectancy, effort expectancy, social influence, facilitating and perceived financial cost towards behavioural intention to accept online learning can change over time as new technology and their experiences are accumulated. Consequently, this study will be beneficial to students, higher education institutions and policymakers.

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BAFE002:
MONTHLY CONSUMER PRICE INDEX (CPI) IN MALAYSIA
FORECASTING USING BOX JENKINS METHOD

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Abstract

The Consumer Price Index (CPI) is a crucial approach to measure the dynamic variation in purchasing trends and inflation measures the change in the price of goods and services from the perspective of the consumer. It is essential to examine the uncertainty movement of the consumer price index towards the long-run economy in Malaysia. This study attempts to determine and forecast the future 25 months consumer price index (CPI) in Malaysia by using the box Jenkins method. The data collection was collected from September 2010 until September 2018. In order to determine and forecast the future monthly consumer price index (CPI) in Malaysia, the findings of MSE values for the best model would be ARIMA with (4,1,0) model this is because of the model has the least MSE value. Not only that, it also showed that the consumer price index will continue to an upward trend with respect to time. Since the root mean square error, RMSE value of testing data is greater than training data, it can be said that the data is overfitting.

Keywords: Consumer Price Index (CPI), Covid-19, Inflation, Box Jenkins Method

INTRODUCTION

The Consumer Price Index (CPI) is defined as an approach to measure the average change over time in the prices paid by urban consumers for a market basket of consumer goods and services such as transportation, machinery, and medical care [1]. It is also capable of attempts to quantify the aggregate price level in an economy and measure the purchasing power of a country's unit of currency. In Malaysia, the consumer price index is an economic indicator that is most widely used to measure the rate of inflation and the government's economic policy. This is because of consumer price index can give the government, businesses, and citizens a comprehensive idea and concept about the price changes in their own country's economic status and can act as a principle and direction in order to make informed decisions about the economy of a country [8].

For the last few months, millions of people worldwide are under lockdown conditions due to the Covid-19 pandemic, hundreds of thousands were infected and thousands lost their lives surround the world. In Malaysia, the government was reinstating its conditional movement control order (CMCO) across several states to control the disease outbreak. The cases of Covid-19 in our country have rapidly grown daily and directly affect the Malaysian macroeconomy as well as the economic welfare of the Malaysian. However, it does not only affect the country's economy, but it may also influence the consumer price index due to the unstable Malaysia's economy. The large volatility of the consumer price index during the Covid-19 pandemic, it is compulsory to forecast the monthly consumer price index (CPI) in Malaysia by using a reliable statistical approach. By using the forecasting model on the monthly consumer price index (CPI) that capable of beneficial to the government, producers, and consumers who are actively involved in the policymakers. In this study,

the monthly consumer price index (CPI) in Malaysia will be forecast by using the Box Jenkins approach to determine overview and forecast the trend of monthly Malaysia CPI during the Covid-19 pandemic as well as determine the accuracy of the predicted Malaysia CPI using MSE.

LITERATURE REVIEW

Box Jenkins method is a systematic analysis for a specific time series dataset which identify, estimate, check and use autoregressive integrated moving average (ARIMA) time series models [3]. This method is appropriate for time series of medium to long length, which consists of at least 50 observations. According to [4], autoregression is a model that uses the dependent relationship between an observation and some number of past value observations from the same time series, integrated refers to the differencing of raw observations to make a time series stationary and moving average indicates that the forecast model is linearly dependent on the past values. Consumer Price Index (CPI) is basically non-stationary in nature. The forecasting of CPI drives the economic growth and plays a role in key financial decisions which is important for governments, businesses and financial institutions. So, the vital idea to successful CPI prediction is achieving best result with maximizing accurate forecast CPI value. In order to uncover the non-stationarity in CPI, the ARIMA model can be effectively used as it assumes that the time series is stationary [10]. A high number of non-stationary time series can be modeled by using the ARIMA model [2].

In previous literature, [9] studied the forecast of the inflation rate by using the approach of Box Jenkins. The differencing method was used to obtain a stationary process and study the most adequate model for inflation rate is ARIMA (1,1,1). In another study presented by [5], there was differencing the series in order to achieve stationarity and then Box Jenkins ARIMA technique was used to model and forecast CPI data. ARIMA (2,2,2) model is suitable for predicting CPI. For the past few years, forecasting of CPI had been an important field of research and one of the methods that is commonly used as ARIMA. According to [6] in the analysis of CPI using the ARIMA model, the results implied that ARIMA (1,1,0) was the best model to forecast the CPI in Malaysia. In the research paper by [6], empirical results showed that ARIMA (12,1,12) model provided a better prediction for the monthly consumer price index (CPI) of the country in the year 2010.

In the research of time series modeling and forecasting of Samoliland CPI, there was a comparison of ARIMA and regression with ARIMA errors [9]. By utilizing these methods, the result was obtained that ARIMA (0,1,3) was the most suitable model for forecasting CPI data. According to [7], the Holt's exponential smoothing and ARIMA models were used to forecast the inflation rate of Zambia using the monthly CPI data. The result implied that ARIMA (12,1,0) was an adequate model that best fitted the CPI time series data and the choice of Holt's exponential smoothing was as good as an ARIMA model considering the smaller deviations in the mean absolute percentage error and mean square error. There were various techniques to use for estimating or forecasting the CPI data. This paper has discussed the forecasting of CPI of Indonesia using a forecast package with R Software [1]. The result of model forecasting CPI data was ARIMA (1,0,0) which was the most suitable time series model. According to [11], the technique used the particle swarm optimization algorithm (PSO) for model estimation to present an ARIMA model.

RESEARCH METHODOLOGY

The data that had been applied in the current research was related to the Consumer Price Index (CPI) in Malaysia. The monthly data was collected from January 2010 until September 2018. There were 129 observations in total for the monthly CPI data. Proceeding with evaluating the stationarity of CPI data, a time series plot was shown, and either any trend, seasonality or cyclic components had been detected in the time series plot. If the time series plot showed any trend, seasonality or cyclic components, the time series was said to be non-stationary and vice versa. The normal probability plot was used for determining the necessities of Johnson's transformation. If the p-value is less than the significance level of 0.05, thus indicates that the data did not follow a normal distribution and Johnson transformation is necessary.

The CPI data was then progressed with Johnson's transformation. Johnson transformation was applied for transforming the CPI data into a normal distribution. The transformed equation for CPI data using Johnson transformation would be obtained from Minitab software. The normal probability plot would be shown as well to prove that all the data points fitted with the best line. After determining

the normality of the data distribution, autocorrelation plot (ACFs) and partial autocorrelation plot (PACFs) were used to determine the suitability of the ARIMA model. The stationarity of k-th order differencing would be determined using the Dickey-Fuller (DF) test, applying that the significance level of the p-value.

The proceeding step would be determining the best ARIMA model using Box-Jenkins methods with Minitab software. The best ARIMA model would be selected by inputting different values of p, d, and q and comparing the mean square error (MSE) values based on the models. The most presumable model either autoregressive (AR) model or moving average (MA) model will be performed. The forecast accuracy for the ARIMA model would be determined using the root mean square error (RMSE) value for testing data. The final step would be plotting the actual values vs forecast values of CPI and therefore, determine and conclude whether there was the existence of data overfitting.

DATA ANALYSIS

The results and discussion section presents data and analysis of the study that can be organized based on the stated objectives, the chronological timeline, different case groupings, different experimental configurations, or any logical order as deemed appropriate.

Testing For Stationary

Figure 1: Testing for Stationarity

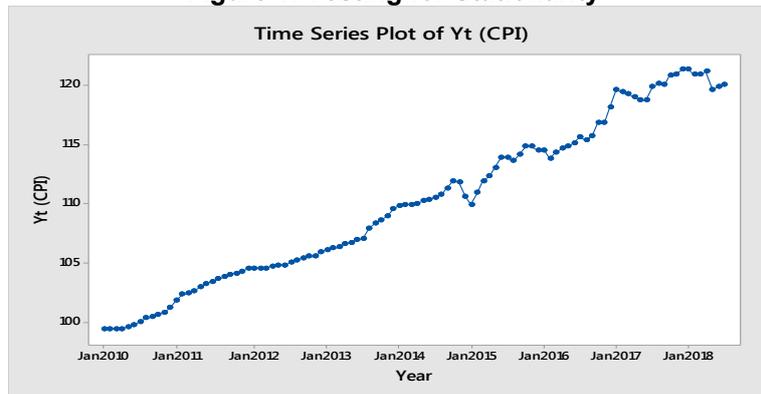
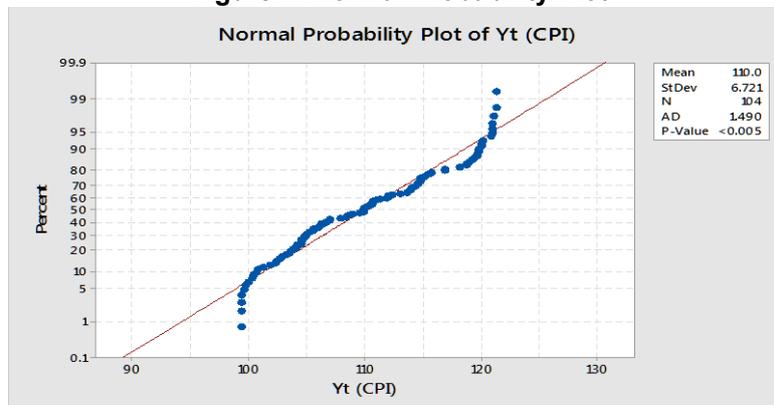


Figure 1 shows the time series plot of the consumer price index in Malaysia from 2010 to 2018. Based on the figure, there is an increasing trend pattern in the consumer price index data. Thus, the time series of Y_t is considered as non-stationary.

Normal Probability Plot

Figure 2: Normal Probability Plot



Based on Figure 2, since the p-value of consumer price index is very small, which is less than the significance level of 0.05, this indicates that the data do not follow a normal distribution, thus a transformation is necessary.

Johnson Transformation

Figure 3: Johnson Transformation of Y_t

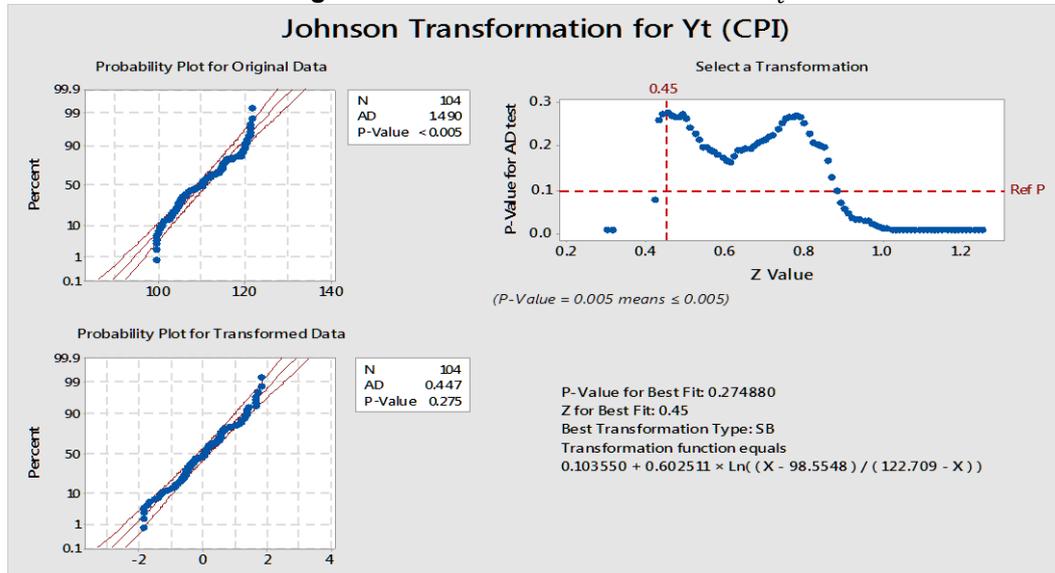


Figure 3 illustrates the result of Johnson Transformation of consumer price index data. For the transformed data, the data points on the probability plot fall along the straight line and the p-value (0.275) is greater than alpha. Therefore, it is assumed that the transformed consumer price index data follow a normal distribution. The Johnson transformation function is $0.103550 + 0.602511 \times \ln\left(\frac{X - 98.5548}{122.709 - X}\right)$.

Autocorrelation Plot (Acfs) and Partial Autocorrelation Plot (Pacfs)

Figure 4: Autocorrelation Plot for Transform Y_t

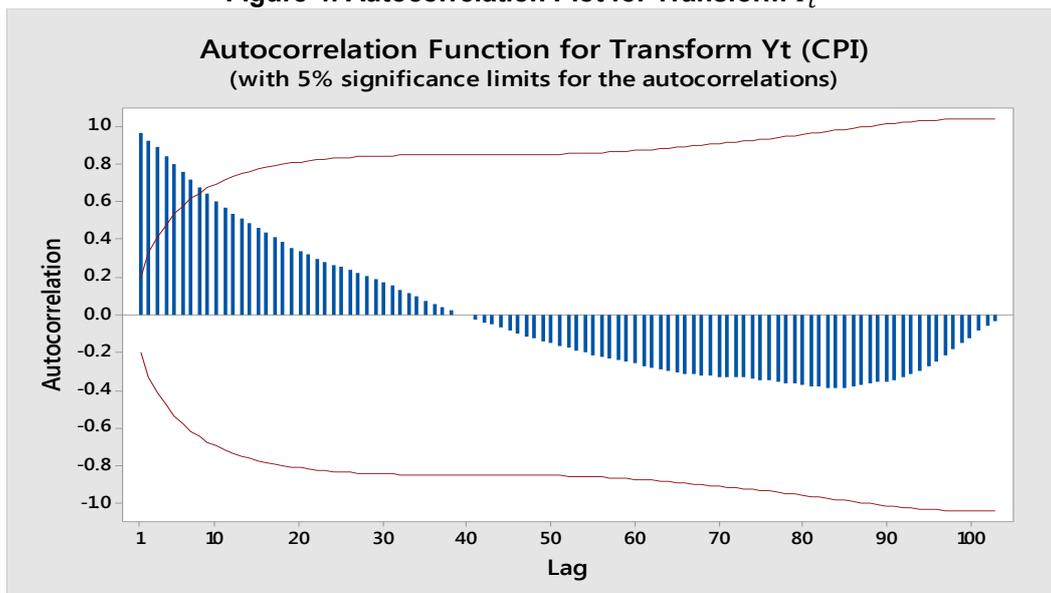


Figure 5: Partial Autocorrelation Plot for Transform Y_t

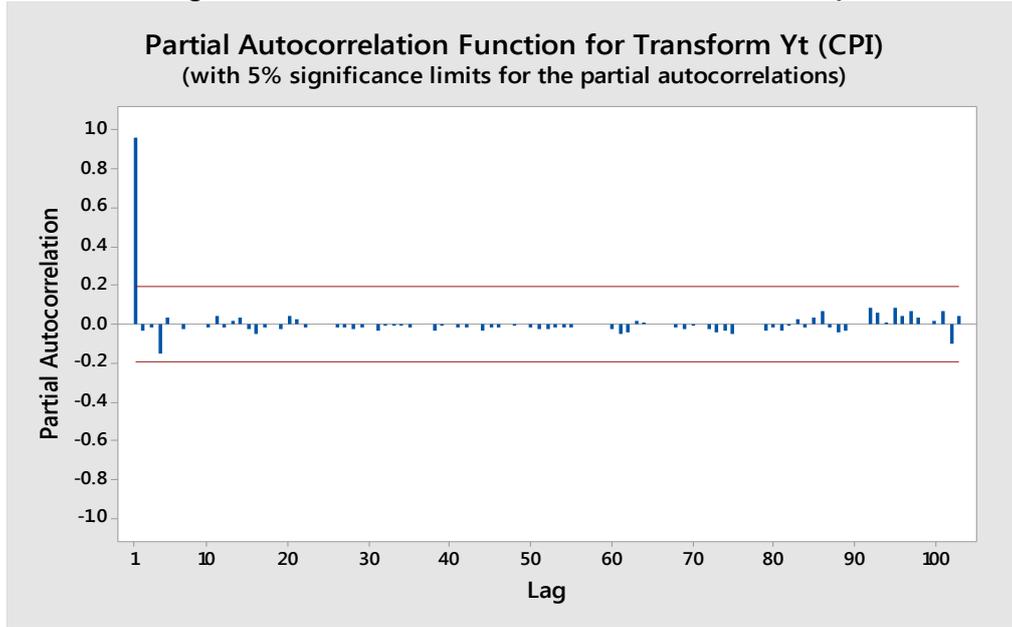


Figure 4 and Figure 5 show the autocorrelation plot and partial autocorrelation plot of consumer price index data. Based on the figure, since the coefficients on autocorrelation plot (ACF) presents a slow downturn and there is a significant spike in partial autocorrelation plot (PACF) indicating that the series is not stationary. Therefore, first-order differences will be applied to examine stationarity.

First Order Differencing

Figure 6: Time Series Plot of First Order Differencing for Y_t

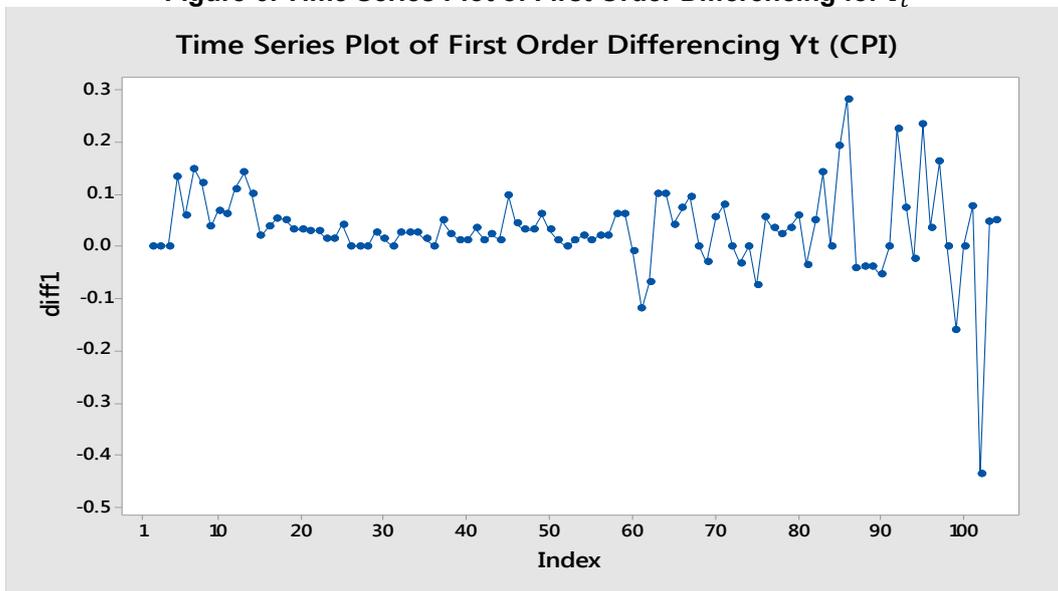


Figure 6 shows the time series plot of first order differencing for consumer price index data. Based on this figure, the stationarity has been achieved and seasonality is not obvious. To confirm whether the first differencing data is stationary, autocorrelation plot (ACFs) and partial autocorrelation plot (PACFs) of first order differencing are plotted and Dickey-Fuller (DF) test is performed by using Microsoft Excel.

Figure 7: Autocorrelation Plot for 1-Order Differencing Y_t

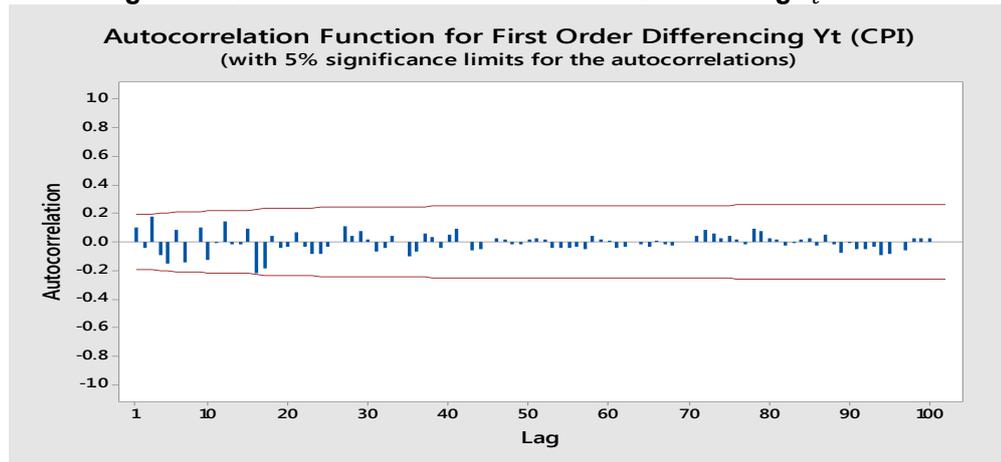


Figure 8: Partial Autocorrelation Plot for 1-Order Differencing Y_t

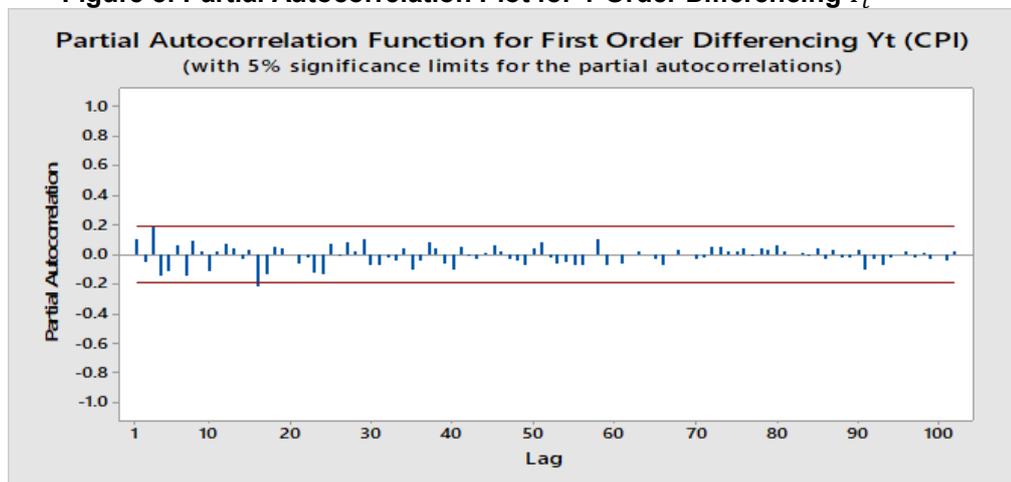


Figure 7 and Figure 8 display the autocorrelation plot and partial autocorrelation plot of 1-Order Differencing consumer price index data. Based on the figure above, since there are no significant spikes, both plots show a stationary sign, thus no white noise series is detected.

Figure 9: Output of Dickey-Fuller (DF) test

1	SUMMARY OUTPUT								
2									
3	Regression Statistics								
4	Multiple R	0.694429							
5	R Square	0.482232							
6	Adjusted R Square	0.471772							
7	Standard Error	0.058231							
8	Observations	102							
9									
10	ANOVA								
11		df	SS	MS	F	Significance F			
12	Regression	2	0.312651	0.156325	46.10267	7.07E-15			
13	Residual	99	0.33569	0.003391					
14	Total	101	0.64834						
15									
16		Coefficient	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
17	Intercept	0.031428	0.005766	5.45053	3.69E-07	0.019987	0.042869	0.019987	0.042869
18	lagged	-0.01592	0.006334	-2.51308	0.013582	-0.02849	-0.00335	-0.02849	-0.00335
19	diff lagged	0.498283	0.053921	9.240955	4.95E-15	0.391291	0.605274	0.391291	0.605274

Based on Figure 9, since the p-value (0.013582) is less than the significance level of 0.05, thus the first differencing time series is stationary.

Identification of Model

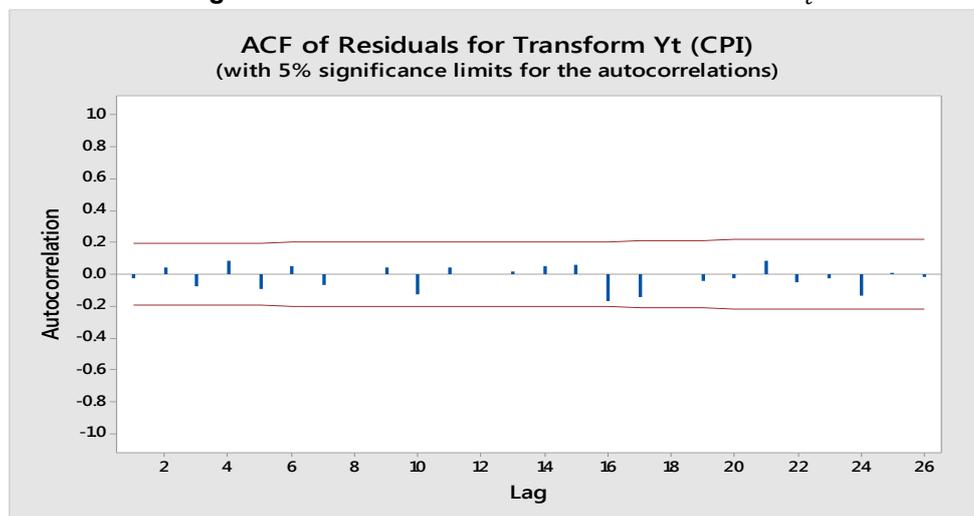
The best ARIMA model would be selected by inputting different values of p , d and q and comparing the mean square error (MSE) values based on the models. Since the data is stationary with first order differencing, thus $d=1$. Besides, since both Figure 7 and Figure 8 had the cut off, the most presumable models either autoregressive (AR) model or moving average (MA) model will be performed. After trying all the possible outcomes, the model with its MSE value would be shown in the following.

Table:1: Summary of ARIMA Model with MSE value

Model (p,d,q)	Model	Mean Square Error (MSE)
(1,1,0)	Not Significant	0.0063635
(2,1,0)	Not Significant	0.0064098
(3,1,0)	Significant	0.0061155
(4,1,0)	Significant	0.0058690
(5,1,0)	Not Significant	0.0058769
(0,1,1)	Not Significant	0.0063529
(0,1,2)	Not Significant	0.0063567
(0,1,3)	Significant	0.0061503
(0,1,4)	Not Significant	0.0061962
(0,1,5)	Not Significant	0.0058034

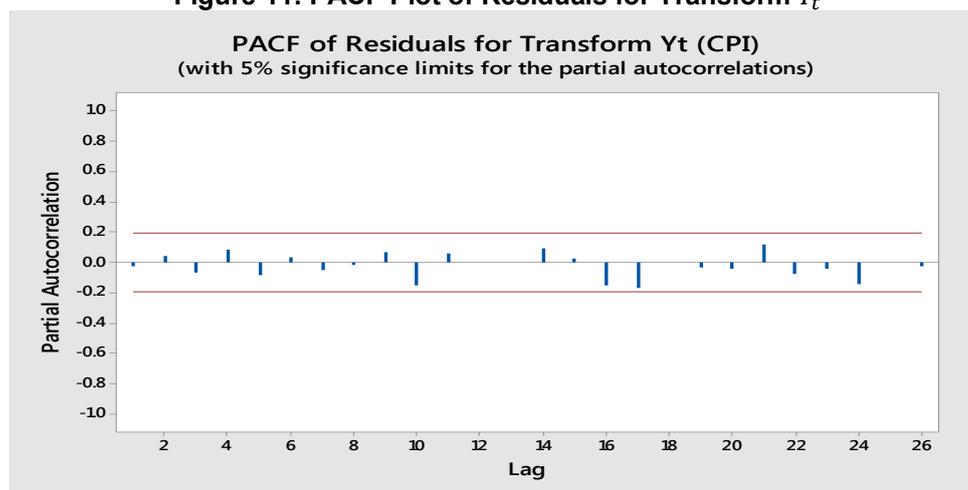
Table 1 shows the mean square error (MSE) for all ten models examined. Based on the table above, the decision and mean square error (MSE) of the autoregressive (AR) model and moving average (MA) model will be compared. Since the coefficient for the (3,1,0), (4,1,0), and (0,1,3) are statistically significant, so the terms are kept in the model. Among these three models, the MSE value of AR (4) model has the least MSE value which is 0.0058690, thus the ARIMA model with $(p,d,q) = (4,1,0)$ has been selected to produce the forecasts.

Figure 10: ACF Plot of Residuals for Transform Y_t



The next step after determining the best model to be forecast was to diagnose the residual of the selected model by plotting the autocorrelation plot (ACF) and partial autocorrelation plot (PACF). Based on Figure 10, the autocorrelation plot (ACF) showed that there is no significant spike, indicating the ARIMA model with $(p, d, q) = (4,1,0)$ is the best model.

Figure 11: PACF Plot of Residuals for Transform Y_t



As shown in Figure 11, the partial autocorrelation plot (PACF) displays that there is only no significant spike, indicating the ARIMA model with $(p, d, q) = (4, 1, 0)$ is the best model.

Figure 12: The Forecast Values for The Next 25 Months

↓	C1-D	C2	C3	C4	13	Sep-19	121.8	2.05659	1.68753
		Yt 1 (CPI)	Transform 1	FORE	14	Oct-19	122.0	2.21147	1.73185
1	Sep-18	120.5	1.48692	1.20185	15	Nov-19	122.1	2.30564	1.75667
2	Oct-18	120.7	1.54957	1.33819	16	Dec-19	122.3	2.55060	1.78351
3	Nov-18	121.0	1.65512	1.40808	17	Jan-20	122.4	2.72206	1.82166
4	Dec-18	121.1	1.69412	1.36549	18	Feb-20	122.4	2.72206	1.84801
5	Jan-19	120.5	1.48692	1.46782	19	Mar-20	120.9	1.61816	1.87738
6	Feb-19	120.8	1.58304	1.50256	20	Apr-20	117.6	0.89634	1.91199
7	Mar-19	121.1	1.69412	1.48905	21	May-20	117.9	0.94222	1.93976
8	Apr-19	121.1	1.69412	1.55796	22	Jun-20	119.1	1.15144	1.97022
9	May-19	121.4	1.82642	1.58095	23	Jul-20	119.9	1.32544	2.00288
10	Jun-19	121.4	1.82642	1.58929	24	Aug-20	120.1	1.37556	2.03171
11	Jul-19	121.5	1.87693	1.64304	25	Sep-20	120.1	1.37556	2.06255
12	Aug-19	121.8	2.05659	1.66640					

Based on the fitted values for 104 in-sample data, Figure 12 illustrates the next 25 months' forecast values. By using the fitted values and forecast values, the absolute error, square error and root mean square error (RMSE) for training and testing set data are calculated.

Table 2: The RMSE Value Summary for Training and Testing Set Data

Data	RMSE Value
Training Set	0.074366892
Testing Set	0.552891443

Based on Table 2, the researcher has obtained the root mean square error, RMSE value of training set data as 0.074366892 (7%), which is less than 10%. Based on a rule of thumb, the RMSE value of 0.074366892 for training data indicates that the ARIMA model with $(p,d,q) = (4,1,0)$ can highly predict the data accurately. As for the testing set data, the researcher had obtained the root mean square error, RMSE value as 0.552891443 (55%), which is high. Based on a rule of thumb, the RMSE value of 0.552891443 for testing data indicated that the ARIMA model with $(p,d,q) = (4,1,0)$ cannot be used to predict the data accurately.

Figure 13: The Actual Values vs Forecast values of Consumer Price Index

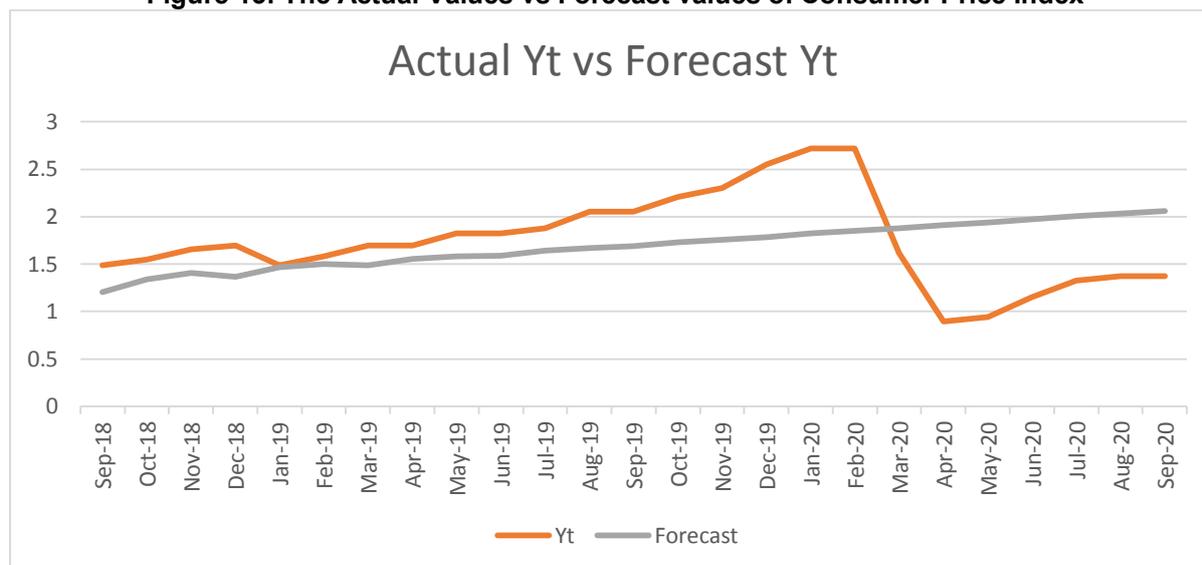


Figure 13 displays the actual values versus forecast values of the consumer price index and shows that they were not equal. Since the root means square error, RMSE value of testing data is greater than training data, it can be said that the data is overfitting. Therefore, the ARIMA with (4,1,0) model could be concluded as cannot fitting the data. As shown in the figure above, it can be seen that the actual consumer price index remained constant from January to February 2020, and started to drop until April 2020, which is the sharpest contraction among ten years. This is because of the outbreak of Covid-19 had pushed the implementation of movement control order (MCO) and lead the prices of housing, transport, water, electricity and fuel lower. Then, the consumer price index had increased until September 2020 with greater price pressures recorded for food and non-alcoholic beverages, housing, utilities and transportation.

CONCLUSION AND DISCUSSION

As for this study, the optimal ARIMA model was obtained to predict the future values of the consumer price index in Malaysia using the data from the year 2010 to the year 2018. The time series plot showed that the consumer price index data with an upward trend but no seasonality. Meanwhile, the ACF and PACF plot suggested that the data should be suitable with either autoregressive (AR) model or the moving average (MA) model by observing the patterns. After that, model testing such as AR (1,1,0), AR (2,1,0), AR (3,1,0), AR (4,1,0), AR (5,1,0), MA (0,1,1), MA (0,1,2), MA (0,1,3), MA (0,1,4) and MA (0,1,5) to identify the best model. The lower the mean square error value, the better the model. Thus, based on the MSE values for each model, the best model would be ARIMA with (4,1,0) model due to the model has the least MSE value of 0.0058690. As for the diagnostic test, the ACF and PACF plots of residuals for the consumer price index suggest that there is no significant spike and the selected ARIMA model is more appropriate than others. Based on the selected ARIMA (4,1,0) model, the consumer price index for 25 out-sample was forecasted by using MINITAB software.

In order to evaluate the accuracy of prediction, the root mean square error (RMSE) which determines the efficiency of the model was computed. The result showed that RMSE values of testing data is estimated at 0.552891443, this indicated that the model built cannot predict the data accurately. The results of the study showed that the consumer price index will continue to an upward trend over time. However, the actual consumer price index. Since the root mean square error, RMSE value of testing data is greater than training data, it can be said that the data is overfitting. Therefore, a possible recommendation is that other forecasting methods should be carried out in order to predict future consumer price index accurately.

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BAFE008:
DOES CO₂ EMISSION RESPOND TO COVID-19 MEASURES?

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Abstract

Reducing the spread of virus, maintaining economic growth while simultaneously relieving environmental change during the COVID-19 pandemic is a tough challenge. Stringency policy in response to the pandemic reduces the CO₂ emissions. However, economic support policy in response to the pandemic increases the CO₂ emissions. The dilemma between the choices of these two measures in generating the environmental costs would be worth studying. Hence, this study examines the impacts of the two measures on CO₂ emissions in the top four carbon dioxide emitter countries. The result of heterogeneous panel cointegration test reports the presence of a long run relationship among the variables. Interestingly, the impact of reducing CO₂ emissions due to one unit increases in stringency index is greater than the impact of increasing CO₂ emissions caused by one unit increases in economic support index. Thus, the policy makers should take on the balance between the people's life and livelihood without ignoring environmental issues during this COVID-19 pandemic period.

Keywords: COVID-19 measures, stringency policy, economic support policy, CO₂ emissions

BAFE013:
**WHAT ARE THE CUSTOMER PERCEIVED VALUE FOR
PROFESSIONAL RESOURCE PROVIDERS AND AMATEUR ONES IN
SHARING ECONOMY?**

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Abstract

Sharing economy was proposed as a concept of sustainable development and indicates a business model with three participants: resource sharers, resource users and the platform where the sharing occurs. In recent years, it was found that sharing economy has transformed from a concept of sharing idle resources to a full time job in practice, which indicates the professionalization of sharing economy resource providers. This paper aims to explore the different and common factors that customers value for professional and amateur householders in the sharing economy. By conducting a cross-case analysis of customer comments on resources provided by professional householders and amateur ones from airbnb, it was found that professional householders tend to provide the tangibility of services and the amateur ones can provide emotional value for users.

Key words: sharing economy; cross-case analysis; professionalization of sharing economy; service quality theory;customer intention

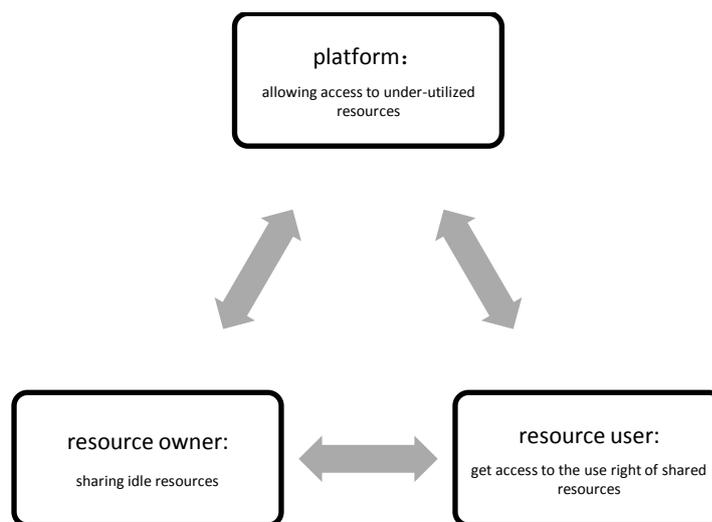
INTRODUCTION

Sharing economy is an umbrella term that has attached a lot of attention and the scale has developed rapidly in various fields in the past decades with the popularity of smartphones and the rapid development of Internet technology. The "Report on China's Sharing Economy Development (2021)" released by the National Information Center shows that the scale of direct financing in the sharing economy in China was approximately 1185 million in 2020, a sharp increase of 66% over 2019, and the transaction scale of China's sharing economy market was about 3,377.3 billion yuan, an increase of about 2.9%. Countless companies, such as Uber, Airbnb, Didi, Neighborgoods, Ofo and so on, around the world claiming to be sharing economy emerged during the past decades and it was widely believed that sharing economy is a sustainable business model which can also be beneficial to the environment and the society.

However, after the emerging of various types of sharing economy business models, such as dock-less sharing bikes, shared accommodation, shared workplace, shared drivers, shared umbrellas and so on, and fierce competition of market share, it was found that only a few companies survived. (Wang, 2018)What's more, many new social and environmental problems have arisen in the process of sharing economy business model innovation.

Sharing economy was originally proposed as a concept of sustainable development and indicates a kind of business model with three participants: resource sharers, resource users and the platform where the sharing occurs. The actors in sharing economy is shown in the Figure 1 below.

Figure 1: Actors in C2C sharing economy business model



Among the representations of the distortion of this sustainable theoretical concept in practices, it is noted that the professionalization of sharing economy resource providers can be a problem. (Wang, 2021) According to the sharing economy industry report in China, the number of participants in the sharing economy in 2020 was approximately 830 million, of which approximately 84 million will be service providers, a year-on-year increase of approximately 7.7%, and many providers have consider it as a full-time job. (National Information Center, 2020) However, the value proposition of sharing economy users has transformed from full use of idle resources to maximization of economic benefits and it can be found that resource providers become professional, which has gradually distorted the theoretical concept of sharing economy in practices.

The professionalization of resource providers are likely to be the result of the changes of external environment, the platform and the resource users' behavioral intention. Because of the cross-network externality of bilateral market, sharing economy participants' behavior and preference are likely to influence one another. (Yi & Jiechang., 2016) By conducting empirical researches, Nian and Lichang (2018) verified the bilateral market characteristics of the sharing economy, and that the sharing economy platform has positive cross-network externality on both sides. Therefore, the preference of resource users to professional resource providers can lead to this phenomenon.

In existing researches, the factors that affect resource users' intention can be summarized as social factors, personal factors, product and service factors, and corporate factors. By analyzing the pricing strategy of products on sharing economy platforms, it is found that professional providers have the characteristics of higher prices, less emotional experience, standardized products or services and more trustworthy information (Chunying & Hongmin, 2021). Ert, Fleischer and Magen (2016) found that trustworthy photos have a beneficial impact on users' decision making. On contrary, social experience, emotional factors and low costs are also driving factors of users participation of sharing economy. (Hoyer, 2010, Zhang, Lu, & Kizildag, 2017) However, there are few researches exploring the different characteristics of professional and amateur resource providers that are valued by the resource users. Thus, the research question of this study is:

What are the different factors that resource users value for professional and amateur resource providers?

In this research, professional resource providers refer to those resource owners who regard the businesses on sharing economy platforms as the major income of theirs.

This study will use content analysis and grounded analysis to identify the factors that customers value for products and services in the sharing economy businesses and group them into several themes based on the SERVQUAL model and customer perceived value theory, then apply cross-case analysis to analyze the differences and commonalities of customer intentions for professional and

amateur householders in sharing economy. By focusing on the different customer intention of professional resource providers and amateur providers in sharing economy, this study allows a better understanding of the professionalization phenomenon of sharing economy and contribute to the theory of service quality.

LITERATURE REVIEW

Sharing Economy

The concept of sharing economy was first proposed by Joel Spaeth and Marcus Felson (1978) about 40 years ago, and with the development of the Internet and the popularity of computers and smart-phones, this model became technically feasible and received a lot of recognition and investment. Many scholars and investors believed that the development of sharing economy leads to a sustainable business model (Gao & Li, 2020; Hassanliet et al., 2019; Martin, 2016), as the original connotation of sharing economy was supposed to be a phenomena that people share underutilized resources for non-reciprocated purposes (Belk, 2014), and this is likely to improve the resources utilization, reduce waste emissions (Cherry & Pidgeon, 2018), reduce net consumption (Seegebarth et al., 2015) and provide other economic benefits related to the sustainable development. (Acquier et al., 2017; Hamari et al., 2016) Therefore, with the support of governments and investors, many businesses, such as car sharing business (Münzel, et al., 2019), bike-sharing, shared accommodation, shared finance and shared knowledge have emerged from 2008 to 2016. (Feng, 2017)

In recent years, however, there are some distortions observed in the implementation of sharing economy after the explosive development of the sharing economy. Some scholars, e.g. Belk (2014), distinguished "sharing economy" from "pseudo-sharing" and identified pseudo-sharing by the characteristics of "the presence of profit motives, the absence of feelings of community and expectations of reciprocity". In this way, pseudo-sharing may not achieve sustainability as it was assumed. In fact, sharing economy has derived many forms from the original sustainable concept, and it was found that many sharing economy businesses failed or has been distorted into "pseudo-sharing". (Sun, Wang, & Yan, 2019)

In addition, the distortion of the original concept that occurred in practice may also cause the previous research results to be unsuitable for analyzing the existing sharing economy. Some researches showed that current sharing economy practices are likely to cause social and environmental damages. (Retamal, 2017) For example, there are studies showing that an increase of traffic congestion (Plante, 2019) and air pollution (Keating, 2019) was contributed by Uber and Lyft and a rise of housing prices, displacement of local communities and depletion of housing stock (Muñoz & Cohen, 2018). Therefore, more researches are required on the differences between theoretical concept and practical one, especially on the reasons, factors and the consequences.

To understand what is going on in the implementation of sharing economy, some empirical researches were conducted and it was found that there is professionalism in the side of resource owner side, which means that resource providers have transformed the original sharing behavior into a career. (Jiahui, 2019) Chunying and Hongmin (2021) conducted empirical researches to investigate the pricing strategy of house owners and noted that the proportion of idle resources has decreased, and professional providers have appeared on the supply side.

After recognizing this phenomenon, some studies chose to focus on the current situation of employment and labor relations (Chenggang, 2018), the meaning of work in sharing economy, future development trend of human resource management (Danxia et al., 2021) and the factors that may contribute to the willingness of sharing economy participation (Jiahui, 2019). However, it may cause difficulties and confusions by applying sharing economy concepts and models to analyze current pseudo-sharing businesses taking the consideration of sharing economy characteristics, while there is scarce studies on the reasons for this phenomenon.

Service Quality Theory

In the early 1980s, Grönroos (1984) carried out researches on service quality and first proposed the term "perceived service quality" based on the basic theories of cognitive psychology and it is believed that service quality should be ultimately evaluated by customers, not the companies,

because the perception of service quality is a subjective category. The evaluation of perceived service quality should be considered from two aspects: one is the service quality expected by customers in the early stage; the other is the service quality that customers actually feel during the service process.

In the late 1980s, Parasuraman et al. (1988) put forward a new service quality evaluation system, the SERVQUAL theory model, based on the total quality management theory. This model divides service quality into five dimensions: tangibles, reliability, responsiveness, assurance and empathy.

Customer Perceived Value Theory

Customer Perceived Value theory is one of the fundamental theories in the modern marketing field. This theory was originally proposed by Zeithaml in 1988 and it assumed that marketing is a process of exchanging perceived value for products or services and the perceived value is the theoretical foundation of investigating customers' intention. Zeithaml (1988) refers perceived value to a comprehensive evaluation of the perceived loss and perceived gain.

Customer perceived value is a multi-dimensional notion. Holbrook et al. (1986) suggested that customer assess the value based on both emotional experience and the utility. Sweeney et al. (2001) based on these studies and proposed a value scale to divide customer value into emotional value, social value, monetary value and quality value, and this scale has been widely used. In recent years, perceived value has been divided into economic value, functional value, emotional value and image value by Rintamäki and Kirves (2017) in 2017. Although, the perspectives of these researches are different, they all verify the multi-dimensional characteristic of the customer perceived value and the effects of these values on customers' intention.

RESEARCH METHODOLOGY

Research design gives a framework guiding the conduction of the research and is guided by the research question and the research problem. (Bryman & Bell., 2011) Research design includes the decisions about research strategy, location, unit of analysis and time horizon.

In this study, the research objective is to explore what the customers expect for professional resource providers and amateur ones in sharing economy. To solve the "what" question, qualitative research will be more appropriate and to compare differences between two groups, cross-case analysis is selected to be the research method of this study. (Miles & Huberman, 1994)

Cross-case analysis is a qualitative research method that usually is applied to deeply understand a phenomenon when there is few research about phenomenon, and the selection of cases allows the finding to be generalized. (Khan & VanWynsberghe 2008) There are three steps for this method: data reduction, data display and conclusion drawing/verification (Miles & Huberman, 1994) This study will use NVivo12 to analyze data.

Conceptual framework: This study will base on the service quality theory, perceived value theory and adopt the SERVQUAL model to help to encode data. (Parasuraman et al., 1988)

Sampling Design

This study will use Airbnb as the targeted company, as it is well founded, successful, with large market in the sharing accommodation industry and with professional and amateur resource providers in the platform. Edinburgh and London are chosen to be the location of the research, as they are tourist cities with a well-developed sharing economy and there are both professional and amateur resource providers in this location.

Eight cases are selected for this study and they are all house listings in Edinburgh and London on Airbnb. To control other variables, four professional householders and four amateur householders share the same characteristics: located in the same city, on the same sharing economy platform-- Airbnb, guests from around the world and more than 100 valid reviews. The main differences lied on whether they are professional householders or not, which are identified based on three indicators : whether the householders have multiple house listings, whether they would meet guests in person

and the hosts' profile. Then the selected hosts will be contacted with online to ensure their identities. Basic information of the eight cases is listed in the figure 1 below.

Table 1: Basic Information of Eight Cases

Cases	Located city	Price(RMB)	Valid Reviews
Professional case 1	Edinburgh	172	288
Professional case 2	Edinburgh	234	113
Professional case 3	London	223	101
Professional case 4	London	491	113
Amateur case 1	Edinburgh	344	197
Amateur case 2	Edinburgh	435	261
Amateur case 3	London	393	215
Amateur case 4	London	402	332

Research Procedure

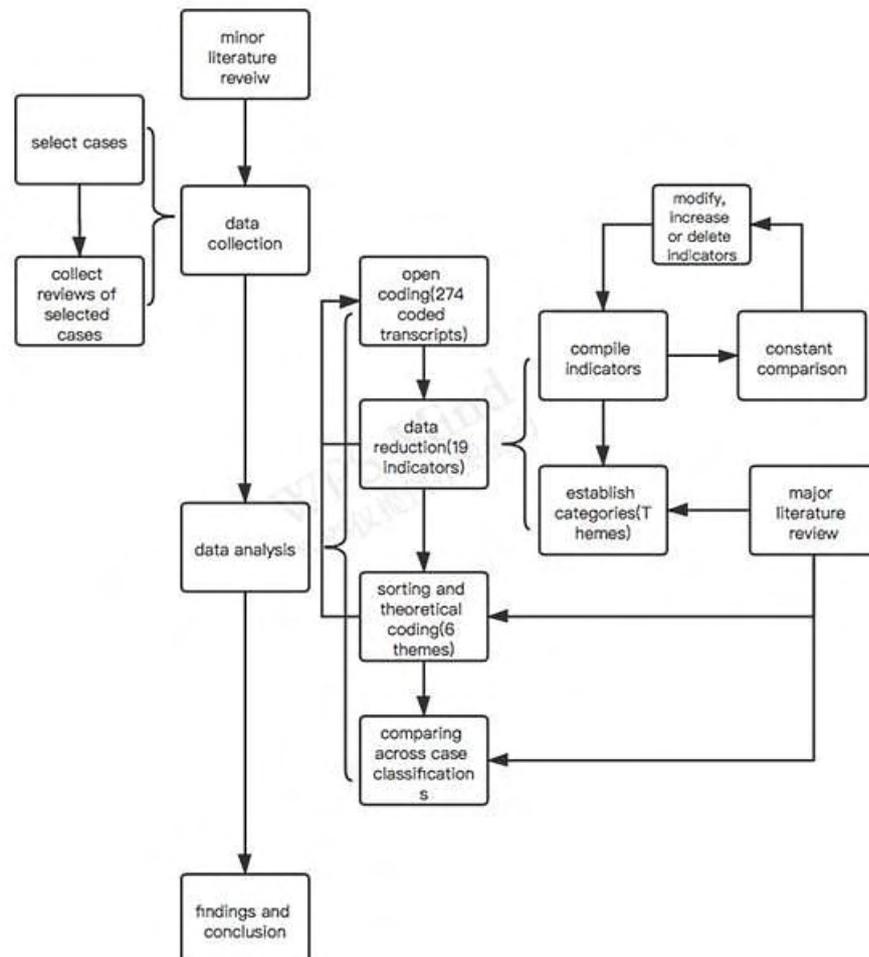
This research applied cross-case analysis to identify and compare the factors that resource users value for professional resource providers and amateur ones. To achieve the objective, the valid reviews of the selected cases will be analyzed following the steps below:

Step 1: data collection: 336 initial valid reviews of the selected four cases are collected and the population was believed to be well presented.

Step 2: data analysis: this step includes open coding, data reduction, sorting and theoretical coding, and comparing across cases.

The research is conducted based on the studies of Hoda et al.(2011) and Daniela et al.(2015) shown in the Figure 2 below:

Figure 2: Research Procedure



DATA ANALYSIS

Open coding: Open coding is the first step of data analysis and it is done after having a comprehensive understanding of the context. In this step, some codes relating to the research objective will be identified. By breaking up the reviews and analyzing, this study originally complied 274 themes.

Data reduction: This step includes axial coding and selective coding. In this step, it aims to select data and then focus, simplify and abstract indicators from data. By constant comparison of these open codes and the corresponding transcripts, the open codes can be grouped into cluster categories which are indicators. In this study, there are 19 indicators being coded after constant comparison. Then, based on customer perceived value theory and service quality theory, six categories are selected: emotional value; tangibility of service, economic value, reliability of service and security needs.

Sorting and theoretical coding: In this step, abstracted indicators are sorted and segregated into the six categories. The links between categories and indicators are shown in Table 2.

Table 2. Categories and Indicators

Themes	Indicators
Security need	safety, quiet, privacy,
economic value	price
emotional value	welcoming host, personality, personal lifestyle, comfortable
reliability of service	recommendation, communication, carefulness. easy check-in, convenience
responsiveness of service	helps from hosts, fast response
tangibility of service	stylish, location, environment, comfortable room, cleanness, adequate equipment

The six themes are established based on the theory of perceived service quality and perceived value and the description of them are listed in the Table 3 below.

Table 3. Themes and Description

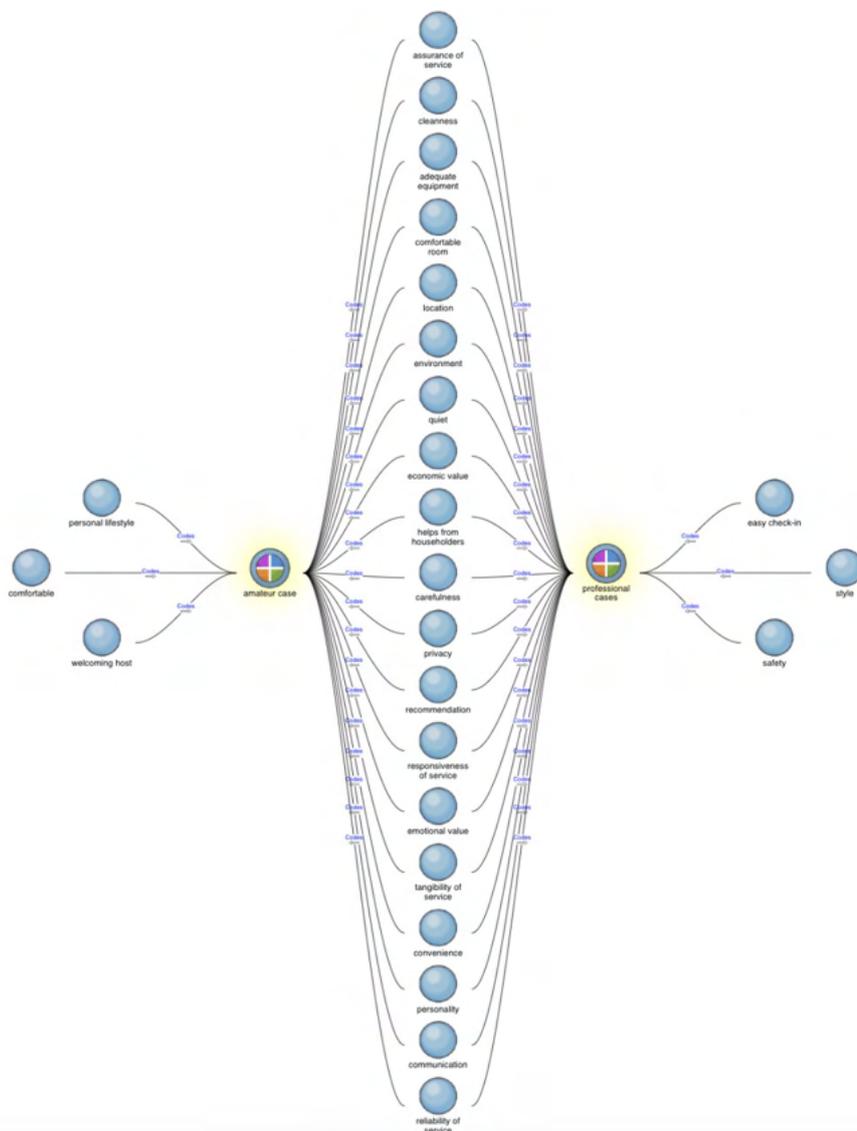
Nodes	Description
economic value	Users can enjoy similar products/services at a relatively low price
emotional value	Users can have a positive feeling emotionally or a strong bond from the experience of using the products or services
reliability of service	Users perceive the ability of service providers to provide reliable services, meet users' requirements, provide convenience
responsiveness of service	Help customers effectively and respond to customers in a timely manner
security needs	Give users a sense of security
tangibility of service	The facilities and equipment of the service provider provide users with a good visual experience

Comparing across cases: In this step, the cross-case focus on the indicators and categories of the two different kinds of cases. The differences in the six categories between two case categories are shown in Table 4 and the differences in specific indicators among these four cases are shown in Figure 2 below.

Table 4. Differences between professional an amateur cases

Nodes	amateur case	professional cases	Total
economic value	3.41%	7.49%	5.36%
emotional value	22.83%	0.58%	12.23%
reliability of service	6.56%	15.27%	10.71%
responsiveness of service	8.14%	12.68%	10.30%
security needs	4.99%	5.48%	5.22%
tangibility of service	54.07%	58.50%	56.18%
Total	100%	100%	100%

Figure 3: differences in indicators between professional and amateur cases



DISCUSSION AND CONCLUSION

Discussion

By content analysis and grounded analysis, there are six themes are identified to be the factors that travelers in sharing economy context value for resource providers: economic value, emotional value, reliability of service, responsiveness of service, security needs, tangibility of service. It can be noted that users expect to not only perceive the service quality, but also have as sense of security and perceive values including perceive economic values and emotional values.

By comparing between the two categories, it can be noticed that professional householders' customers tend to mention more about economic value and reliability of services, while amateur householders are likely to provide emotional values to users. Among these indicators, the indicators of hosts' personal lifestyle, welcoming host and comfortable stay are the three indicators that only amateur householders are likely to show and affect customers' intention, while professional hosts provide the unique values for easy check-in, stylish decoration and sense of safety.

This may be caused by the fact that professional householders are unable to spend time with the users together. They are more likely consider providing the right to use the house as a job and they are supposed to provide services, products and helps that users need for traveling. Therefore, their products---the properties---are more likely to be located in a place with convenient transportation, and the standardization of amenities and cleanness is what the professional householders are capable of providing with. On the contrary, amateur householders present their lifestyle and personalities when sharing the same place with travelers and these factors may be valued by the customers who value social needs.

By further analysis of the coded transcripts, it is found that easy check-in indicator is only mentioned for house listings of professional hosts' due to the reason that the professional hosts "share" their multiple properties simultaneously without meeting the guests and usually only contact with them online. In this way, users need to check in according to the instructions, while amateur hosts usually provide welcoming hosts in their own places and are more likely to spend time with the guests. Therefore, guests are more likely to get welcoming host from amateur hosts and get to know them, including their personalities and personal lifestyle, which can form an emotional bond between them. Due to the same reason, guests may find it safer to be in the place without other people when they are out traveling. In addition, professional hosts usually can spend more time and energy on the resource "sharing" activities, which makes it possible to provide more reliable services and stylish room.

In past researches, it was found that shared short-term rental platforms are also in competition with traditional hotel industry.(Wang, 2021) Therefore, it is necessary to explore the factors that can form competitive advantages of the two industries.

Conclusion

In conclusion, this study applied cross-case analysis to analyze the differences and similarities of characteristics between professional and amateur householder in the sharing economy context. 336 reviews of eight cases from two categories are selected to be analyzed and 274 transcripts are coded into 19 indicators after constant comparison. These indicators are grouped into 6 themes based on perceived value theory and perceived service quality theory: economic value, emotional value, reliability of service, responsiveness of service, security needs, tangibility of service. The security need factor is newly identified besides factors in the two theories. By comparing across cases, It is found that professional householders tend to provide reliability of service and economic value, while the amateur ones can provide emotional value for users.

In the future, more researches are expected to be on the reasons for, the effects of and the possible results of the professionalization of sharing economy, the effect extent of these factors on users' intention and the effects of the safety accidents happening in the sharing economy on customers' participating intention.

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Original sources links:

Amateur case 1:

https://www.airbnb.cn/rooms/3421514?source_impression_id=p3_1623227363_hkLoGLshcy8lg2Xc

Amateur case 2:

https://www.airbnb.cn/rooms/20355772?check_in=2021-08-03&check_out=2021-08-04&translate_ugc=false&federated_search_id=de823adc-7cf0-4567-ae87-f6ae0c3087dc&source_impression_id=p3_1623227140_NjKe4qydntz0XjIX

Amateur case 3:

https://www.airbnb.cn/rooms/25706308?translate_ugc=false&source_impression_id=p3_1631088233_Hb4bX7jkoaiaQ%2BN5

Amateur case 4:

https://www.airbnb.cn/rooms/20704116?translate_ugc=true&federated_search_id=6b3e1db4-840f-46b8-bb56-ea04b0f3c1f6&source_impression_id=p3_1631088423_Vg4loCbAOLU1cmPp

Professional case 1:

https://www.airbnb.cn/rooms/19343592?translate_ugc=false&federated_search_id=552d989a-eb91-4b8f-b38f-41a44c18a563&source_impression_id=p3_1623294611_ut5PnAemQ42sXm4%2F

Professional case 2:

https://www.airbnb.cn/rooms/39630804?translate_ugc=false&federated_search_id=eb6a8735-6da3-4a5b-ba51-93ea9e1db31c&source_impression_id=p3_1623294731_QEK%2F8cvCwNL17C7c&s_tag=MT4Yrj91

Professional case 3:

https://www.airbnb.cn/rooms/29363329?translate_ugc=false&federated_search_id=a050c4d4-5381-4407-b82a-d2fd8a00b0da&source_impression_id=p3_1631181047_LPFq9367eTVZMCs0

Professional case 4:

https://www.airbnb.cn/rooms/31329710?translate_ugc=false&source_impression_id=p3_1631088230_8i8Z3K7OP75FgYJc

BAFE014:
**ARE WE ON THE ROAD TO ENVIRONMENTAL SUSTAINABILITY
BEHAVIOUR? A CONCEPTUAL STUDY OF HOTEL EMPLOYEES**

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Abstract

The environmental sustainability is one of the critical topics in the 21st century. United Nation has been highlighted that environment is playing a crucial role in achieving the sustainable development goal. The selfishness and greediness of human to seek for quality of life or modern lifestyle which has caused the quality of our environment to be deteriorating. The inescapable truth that the environmental degradations are resulting from the overwhelming urbanization, industrialization and deforestation which lead to numerous environmental problems worldwide such as greenhouse effects, global warming, climate change, acid rain and pollutions which have approached to a worrisome level. The purpose of this research is to conceptualize the factors which influence on environmental sustainability behaviour and the mediating effect of environmental attitudes. This study would focus at hotel industry in Malaysia where hotel is one of the higher contributions of energy and resources consumption industry. By conducting this study, hoteliers and particular related industries will be able to ascertain appropriate approaches where to make a difference to this country in environmental sustainability efforts.

Keywords: Environmental Sustainability Behaviour, Personal Values, Environmental Awareness, Environmental Knowledge, Social Norms

BAFE032:
**ANALYSIS OF MACROECONOMIC AND FINANCIAL FACTORS
COINTEGRATED TIME SERIES WITH MALAYSIA ISLAMIC REAL
ESTATE INVESTMENT TRUST STOCK RETURN**

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Abstract

The Islamic Real Estate Investment Trust (Islamic REIT) serves as an alternative Islamic investment instrument to sukuk and shariah compliant stock, which observes Islamic REIT experiencing a significant growth and demand in portfolio property value and Islamic market capitalization. The attractiveness of Islamic REIT has made it to become one of the common real estate investments apart from the physical property investment with a long-term and cheaper capital for property ownership. Likewise, the continual expansion of the Islamic REIT market in Malaysia is making great financial motivation that expands the investment spectrum. Therefore, the need to study the driving financial and macroeconomic long run force with Islamic REIT stock return, which in turn further contributes to the Islamic finance literature. This study was confined to nine study factors and two latent which the financial and macroeconomic factors. The financial factors comprise the long-term bond yield, systematic risk, stock market index and rental index. Meanwhile on macroeconomic latent as control factors are measured by the economic growth, interest rate, inflation rate, money supply and foreign exchange rate. The empirical tests adopted in this study are Johansen and Julius co-integration and Vector Error Correction Model. The empirical analysis shows that the macroeconomic factors, systematic risk, and rental index have a significant positive long run relationship towards the Islamic REIT stock return except for long term bond yield and stock market index. This study extended multifactor arbitrage pricing theory by including the systematic risk and rental index factors performing vital roles apart from the macroeconomic factors. This study will be a cornerstone for potential investors in providing a deeper understanding in comprehension linkage between the financial and macroeconomic factors and it potentially could offer as an alternatives investment instrument in structuring the portfolio.

Keywords: Islamic REIT, Stock Return, Financial and Macroeconomic

INTRODUCTION

A Real Estate Investment Trust (REIT) refers to a company that specifically makes real estate investment and therefore is treated specially during taxation and therefore allowing its taxation on its earning at investor level as opposed to entity level. This treatment, REITs are anticipated to acquire, own and develop as well as operate and manage real estate properties or provide similar services. Moreover, REIT defined by Baum (2015) as an organization that has the ownership rights of real estate assets. The REIT categories as between debt and equity type funds, which balanced optimal level between risks and return. In term of labeling REIT as income funds, it generated income through the dividend as the regulation exempted on corporate tax if payment of 90 percent of income as dividend payment. The continual expansion of the real estate market in the world is making great financial motivation that expands the investment spectrum especially the REIT market. Furthermore, the underlying property portfolio value increased given the natural of the real estate translated into higher capital growth in the long run. REITs investment described as a company that invests it

proceed from issuing shares to acquire, manage and run profit-making real estate properties (Baum, 2015). The shareholders share the rental received in the form of dividend payment at the period in which the business has occurred. REIT is categorized as a globally recognized as a form of unit trusts or trust funds that majorly specialize in the real estate investment.

The current Malaysia economic and national policies situations attracted most of the investors switch to invest into REITs which indirectly invest in the real estates. The realization of the benefits of REIT and its simplified and easy to manage the investment regards to the underlying properties, other countries stated to introduce REITs investment to promote the real estate development and enhance economy development through indirectly investment from small scales investors (Miles et al., 2000). According to Sotelo and McGreal (2016), REITs showed an impressive growth after financial crisis and the continuous changing environment and future development regimes become a foundation of a significant increase of the listed real estate companies. The maturity of REIT market across the world will likely affect the activities and operations of specified REIT in a particular jurisdiction, Malaysia been categories by EY Global RealEstate (2018) as emerging market, which could move forward rapidly to establish with the parallel conventional REIT and Islamic REIT..

Malaysia Real Estate Investment Trust Experience

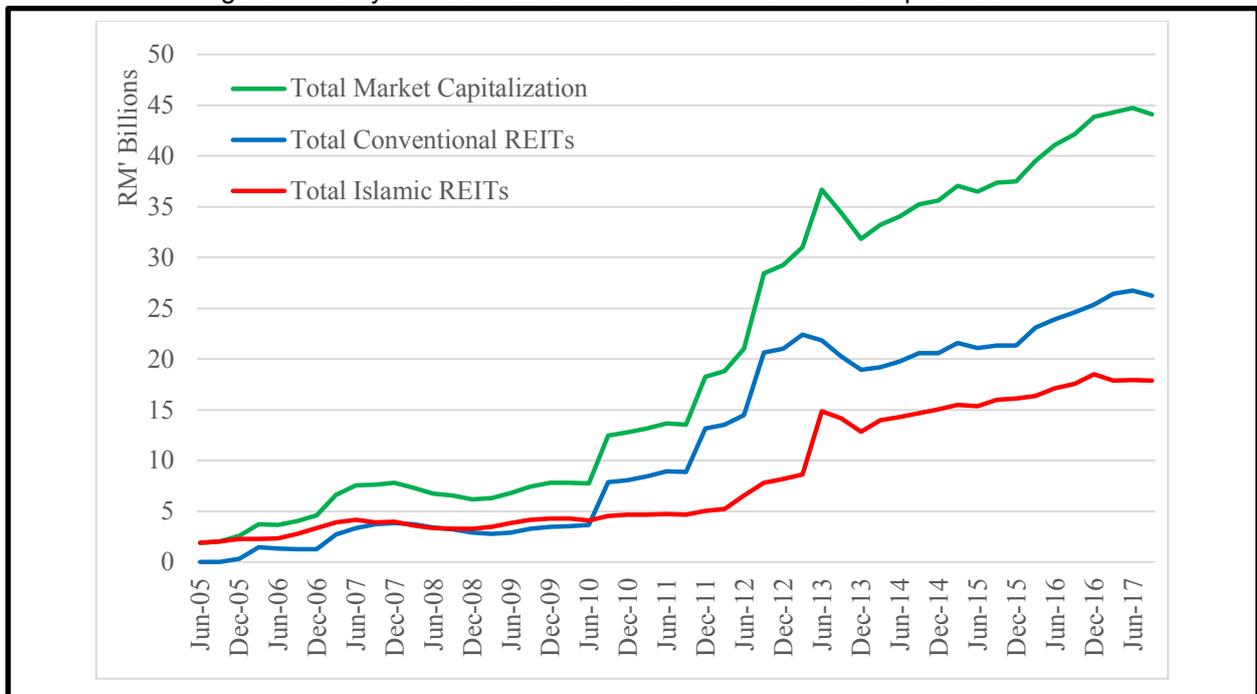
The Malaysia REIT are listed on the bursa Malaysia stock exchange, the shareholders shares ownership in the REIT management company invested in the real estate including office spaces, industrial properties, plantations, hotels, shopping mall and medical centers to form assets portfolio. The REIT management company characteristic similar to other business shares which is no different to other listed companies else than the underlying type of business conducted. However, REITs have two unique characteristics, which are management of income producing properties owned by shareholders and distributing the income from rental collection operations as dividends to shareholders to entitle the corporate tax exempted. Apparently, as of December 2017, Bursa Malaysia stock exchange had four Islamic REIT and 14 conventional REITs listed with a combined total assets value of RM48 billion and market capitalizations of RM44 billion (Bloomberg). However, despite the progress, the Malaysian REIT market is still small as compared to U.S., European, Singapore, Japan, and Hong Kong (EY Global RealEstate, 2018)

Malaysia is one of the REIT markets that value both the Islamic and conventional practices, such flexibility makes the attract not only to the local investor but also Islamic investors and foreign investor. Nevertheless, Malaysia Islamic REIT allowed Islamic institutional investors to invest in an as alternative Islamic investment vehicle on top of shariah-complaint stock and Islamic debt (sukuk). The support from government of Malaysia through policies and incentives providing REIT investors a platform to invest in properties market without directly invest tangible properties, therefore enhancing its growth and Gross Domestic Product (GDP) of the country. The Shariah Advisory Council (SAC) of BNM is the highest shariah authority Islamic Finance in Malaysia, the bodies that have ascertainment of Islamic law for the financial system in Malaysia. The SAC of SC enhanced the commission of Islamic REIT and spell out the guidelines of the permissible activities underneath an investment accordance to the fundamental's layout by the SAC of BNM. According to the guideline on listed REIT (SG-GL/1-2018) issued on March 2018 under the section 377 of the Capital Market and Services Act 2007 (CMSA) and the guideline for Islamic REIT dated November 2005, spelled out that, the Islamic REIT ensures all business activities are screened based shariah principles and financial guidelines, which are known as business line screens. Throughout the years, guidelines for Islamic REITs by SC have restricted investment with income from haram activities such as alcohol, gambling, tobacco and non-halal food product like pork to not more than five percent of the total firm operating revenue. Moreover, the Islamic REIT market in Malaysia uphold the principles free of riba, gharar and maysir, which forbid business activities in conventional financial services, interest-based business, and conventional income instruments. The Islamic REIT restriction based on shariah principles does not exist in conventional REIT. Therefore, with these two types of REIT available in Malaysia provide investors with choices, making it easier for those Islamic investor or institutions can hold Islamic REITs as part of an investment vehicle portfolio as well as fulfillment of regulations to hold shariah compliance assets.

The impact of systematic risk as contagion effects in REIT stock return, it is evident in the study of Chen, Tsai, Sing and Yang (2015), subprime mortgage crisis found a significant effect with REIT stock returns towards the increase in the REIT beta. Furthermore, REIT values change, which

depend on the real estate fundamentals rather than adjustments in the portfolio (Baum, 2015). Therefore, the downside of financial assets is exposure to market risk; therefore, is the systematic illustration an important factor in explaining Islamic REIT stock return? (2) Reside in rental collection as the main sources of REIT management company income, the growth of rental collection exhibited a positive influence on the valuation of cash flows and overall REIT stock return (Leone, 2011), but why does the REIT stock return volatility in Figure 1, shows immense fluctuation as compared to the uptrend of rental index measured by the Malaysia purpose-built office rent index? (3) The changes on interest rate have a direct impact on the REIT management company financing, that is essentially lower profit margin and smaller dividend. The empirical study upholds the theory of pure expectation theory, that explains the term of interest rate assert market expectation expected future interest rate. However, REIT management companies and investors tend to neglect the information about interest rate inversion in the long run. The review on the long-term bond yield as proxy for the long-term interest rate is vital to justify the relationship toward the REIT stock return. (4) According to the efficient market hypothesis, financial assets reflect all the available information and respond instantaneously. The unexpected or new information such as economic indicators as the key source of volatility would arrive at random points in time and therefore result in random price movements as supported by random walk theory. In view of the limited studies on Islamic REIT volatility, this indicates that Islamic REIT has the possibility of containing useful information on the volatility effects to fill in the missing piece in the Islamic REIT Islamic finance contemporary research literature.

Figure 1: Malaysia Real Estate Investment Trust Market Capitalization



Sources: Compilation from Bloomberg Terminal and Respective REIT Annual Report.

In the comparison to the conventional REIT over the years, it shown the conventional REIT market is larger than Islamic REIT market in term of total market capitalization as illustrated in Figure 1. However, the popularity of the Islamic REIT seems to be increasing, more flexible and diversifies more easily as compared to direct or tangible real estate investment. Although the REIT market in Malaysia is small as compared to that of the U.S. or Europe, an increasing trend in the market capitalization of Islamic REIT alongside that of the REIT is shown by the Malaysian REIT market. In aftermath of 2008 global financial crisis, there are fears of a lingering financial crisis associated with the U.S. subprime crisis. According to Lean and Smyth (2012), the market capitalization of the Malaysian REIT market increased as local investors brought back an investment in addition to investment from global investors who have come to invest in Malaysia. Nevertheless, the Malaysian economy remains strong even with the adverse effects associated with the global economy because of a stronger domestic demand and the growth in real estate (Lean & Smyth, 2012). Furthermore, the stable employment and income growth continue to support private consumption.

The Contemporary Issue Surrounding the Malaysia REIT

A significant growth in systematic risk in the real estate market has been witnessed as properties become more exposed to the fundamental factors associated with capital markets (Chang, Chou & Fung, 2012; Liu and Liu, 2012; Chen, Tsai, Sing & Yang, 2015). On top of that, the application of financial concepts such as Capital Asset Pricing Model (CAPM) developed by Harry Markowitz in 1952 has also been utilized by investors and economists in describing the existing relationship between the investor's risk and expected stock return. The impact of systematic risk as contagion effects in REIT stock return, it is evident in the study of Chen, Tsai, Sing and Yang (2015), subprime mortgage crisis found a significant effect with REIT stock returns towards the increase in the REIT beta. Furthermore, REIT values change, which depend on the real estate fundamentals rather than adjustments in the portfolio (Baum, 2015). Therefore, the downside of financial assets is exposure to market risk. Therefore, does the systematic illustration an important factor in explaining Islamic REIT stock return? Nonetheless, it is argued that the REIT stock returns may have a positive relationship with the real estate portfolio rental collections (Leone, 2011). Reside in rental collection as the main sources of REIT management company income, the growth of rental collection exhibited a positive influence on the valuation of cash flows and overall REIT stock return (Leone, 2011), but the REIT stock return volatility show immense fluctuation as compared to the uptrend of rental index measured by the Malaysia purpose-built office rent index. On the other hand, the changes on interest rate have a direct impact on the REIT management company financing, that is essentially lower profit margin and dividend. The empirical study upholds the theory of pure expectation theory, that explains the term of interest rate assert market expectation expected future interest rate. However, REIT management companies and investors tend to neglect the information about interest rate inversion in the long run. The review on the long-term bond yield as proxy for the long-term interest rate is vital to justify the relationship toward the REIT stock return. According to the efficient market hypothesis, financial assets reflect all the available information and respond instantaneously. The unexpected or new information such as economic indicators as the key source of volatility would arrive at random points in time and therefore result in random price movements as supported by random walk theory. Therefore, this study confined to nine study factors and two latent which the financial factors and macroeconomic factors. The financial factors comprise the long-term bond yield, systematic risk, stock market index and rental index. Meanwhile on macroeconomic latent measured by the economic growth, interest rate, inflation rate, money supply and foreign exchange rate. The macroeconomic and stock market index included in this study as control factors in explaining the issues highlighted in this study

LITERATURE REVIEW

Macroeconomic factors and Real Estate Trust Return

In general, GDP often represents the aggregate income for a country and describes its economic condition; that is, the increase in GDP indicates economic growth. Malaysia is considered an emerging country and real estate is regarded as one of its valuable assets. According to Fama and Schwert (1977), economic factors such as Industrial Production Index (IPI) are key indicators of the performance of the stock market, and it highlights the various investment processes in the capital market. Real estate dominates the market and critical to shed light on the relationship of an economy's wealth and its real estate sector. An increase in the IPI indicates better production of the industrial sector growths, which subsequently leads to an increase in company profits and a rise in Islamic REIT stock prices. Bouchouicha and Fiiti (2012), applied a new methodology, based on the dynamic coherence function, to examine the dynamic associations between the macroeconomic environments, concluded that there is a trend, particularly in the long run, that propels the various real estate markets. It was suggested that the returns of property and equity stocks are influenced by the GDP growth of a country, which also acts as the yardstick of the economy.

Nevertheless, according to Azhar, Saad and Bakar (2014), evaluate the Islamic REIT market concluded that GDP is one of the critical factors that affect REITs return. The relationship between the GDP and REIT stock return is significant and positive coefficient. Furthermore, the rise in GDP leads to more cash being available for investment in assets, such as real estate. Nonetheless, a country's economy performs well, its GDP will show an excellent statistical pattern, and this infers the enhancement of the overall well-being of a nation. Azhar, Saad and Bakar (2014) finding also indicate that macroeconomics factors can elucidate the differences in REITs returns. These conclusions are

supported by Kamweru and Hgui (2017) suggested that the increase in GDP results in a better performance of the real estate sector. Moreover, the authors claimed that GDP per capita plays an essential role in examining REITs performance of countries, such as Hong Kong, Singapore, Japan and the U.K.

According to Ball (2017), inflation is defined as an economic situation in which the prices of various goods and services grow steadily and continuously. The Consumer Price Index (CPI) is used for the measurement of inflation. The CPI takes into consideration the average prices of goods and services in a consumption basket in a particular country. If investors have an intention to hold some assets for the long term, inflation would be a significant concern since the real return from the investment could be eroded (National & Low, 2000). Furthermore, National and Low (2000) stated that real estate is suitable in hedging inflation in a traditional point of view, for instance, land prices would rise in the long-term due to its limited supply and elasticity. The hedging capability of real estate surpasses that of securitized property and stocks. Industrial property, for example, provides the most effective hedge against the unexpected and expected rise in prices, while residential properties such as shops offer a significant hedge in expected inflation environments. However, unexpected inflation is an insignificant factor in real estate performance when inflation is low (Sing & Low, 2000). Unexpected inflation does not consist of market-rate, but it might be affected by interest rate changes. Most of the researchers indicated that REIT has an inflation hedging component, such as in the reviews by Chang (2017), Hardin et al. (2012), National and Low (2000), Park and Bang (2012) and Gyourko and Linneman (1988). These scholars assert that all investors in inflation environments fail to reconcile the movements in discount rates with those of dividend growth of share prices. These findings provide an alternative argument as to why REIT stock returns in the short-run are inversely related to expected inflation.

The study by Fatnassi, Slim, Ftiti and Maatoug (2014) used the Markov-switching model to analyze the monetary supply seeking to evaluate if the money supply produces a non-linear effect on the REIT markets. The empirical finding indicated an increase in money supply contribute to an increasing REIT market. Consequently, implementing an expansionary monetary policy will drive the REIT markets into the booming territory. The result supported by Lee and Lee (2014) stated that money supply is a positive coefficient and benefit the investors who invest in real estate market. A positive relationship is only present in these two markets, but in others, the relationship is usually negative. According to Ahearne, Ammer, Doyle, Kole and Martin (2005) the price of real estate would increase when the monetary policy is implemented. Most of the countries' central banks differ on how they view the application of the monetary policy and its effect over the price of real estate. Generally, the monetary policy and real estate prices exhibit a positive correlation, when the expansionary monetary policy is implemented, most commercial lenders loan-making capabilities increase, which, in turn, would result to in a higher amount of money supply in an economy. An expansion of the money supply would result in a rise in the amount of money made available to the real estate sector and this creates an increase in demand and growth of the real estate prices (Xu & Chen, 2012). However, it also changes the public inflation expectation as many would presume that more money supply means higher prices for goods and services. Besides, the money supply is also affected by the growth of mortgage credit. If the central bank decreases the credit policy regarding down payments for mortgages, then the amount of credit available for mortgages would increase and this would push the prices of real estate upwards. The monetary policy adopted by the central bank has a significant impact on the growth of real estate prices, but this is different in deregulated markets (Xu & Chen, 2012).

The exchange rate is the relative price between two currencies, a nation pays to acquire the currency of another nation depending on the demand and supply of the needed currency (Yang & Zeng, 2015). The effect of macroeconomic factors especially exchange rate on Islamic REIT markets plays an important role in performing risk management strategies for financial market participants (Ewing & Payne, 2005). Nevertheless, Joyeux and Milunovich (2015), posited that the movements in the exchange rate highlight a nation's competitiveness and sways the demand for real estate from both foreign and domestic buyers. There is a lot of research that examines the relationship between the REITs stock price and exchange rate. Moreover, Hussin, Muhammad, Hadi and Gan (2017), Ngo (2017) and Kola and Kodongo (2017), assert that when the exchange rate changes it would produce a greater impact on the REIT price.

The changes on interest rate have a direct impact on the REIT management company financing that is essential lower the profit margin. Vernimmen, Quiry, Dallochio, Le Fur and Salvi, (2014) documented that when interest rates rise there would be a corresponding increase in the risk-free nominal rate, a rise in the discount rate and reduction in the price of a certain stock. Similarly, Ito (2013) indicated that investor expectations have a significant influence on corporate profits due to changes in interest rates. Moreover, most enterprises finance the purchase of fixed assets such as equipment and real estate and incurred interest expenses, therefore, an increase in interest rate caused lower funding costs and incentivized the organizations to increase an operation. Various reviews on the association between REIT stock return and interest rate abound in the literature to further understand the pattern and impact on REIT management company, in the empirical review on interest rate impact on the REIT would be proxy by Islamic interbank rate. In the study of Allen, Madura and Springer (2000) stated that movement of interest rate could affect equity and mortgage REITs. The estimating regression showed that there is a negative and significant association between the changes in interest rates and the non-equity and equity REIT portfolio returns. Furthermore, the authors argue that the real estate investments relied more on borrowed funds, hence, the cost of financing could impact real estate values, as the rise in interest rates would lead the real estate's value and demand be reduced.

Financial Factors and Real Estate Trust Return

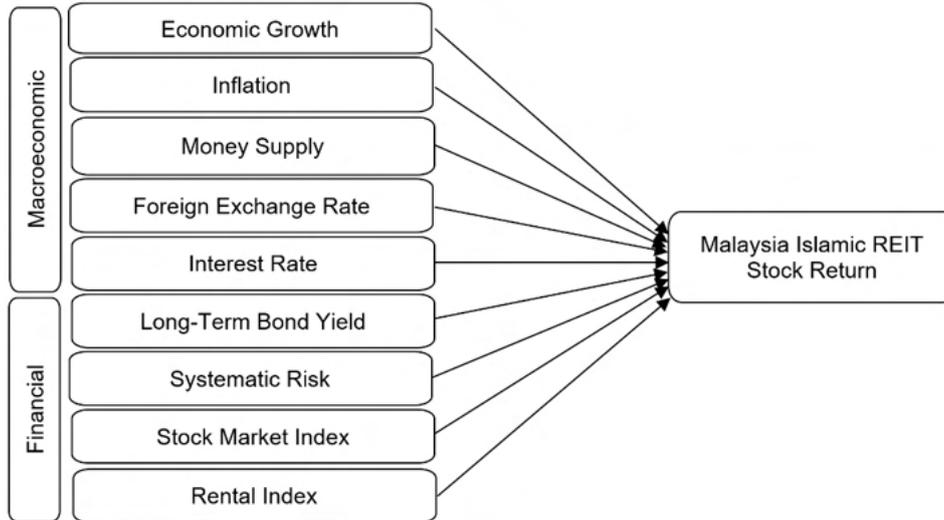
According to Pierdzioch, Risse, Gupta and Nyakabawo (2018), an expansive monetary policy that leads to the depression of bond returns and as the monetary policy body initiates programs that lead to interest rate increases the result would be a negative movement of the bond price. This would then lead to an increased equity demand, including the demand for Islamic REITs, hence a higher expected return for Islamic REITs.

Most of the literature reviewed proxy's government security yields as interest rate to determine REIT stock return as the long run return as the empirical study upholds the theory of pure expectation theory, which explain how the market expectation consensus for future short-run rates (Loo, Anuar & Ramakrishnan, 2016; Hong & Lee, 2013; Pierdzioch, Risse, Gupta & Nyakabawo (2018); Liu, Loudon & Milunovich, 2012). However, the theory tends to neglect the information about interest rate inversion in long run interest rates. Therefore, in the study of Nittayaaasetwat and Buranasiri (2012) testing on the mean reversion in the long-term rate, the empirical result show that an interest rate fluctuation, long run rate, and current short-term rates are important in explaining the REIT stock return. Consequently, investors should consider all the three-interest scenario in an investment strategy. In the study of Kawaguchi, Sa - Aadu and Shilling (2017), found REIT share prices had a negative leverage impact before and after the Greenspan period, but no effect was established during the same era. The authors opined that the positive variance elasticity exhibited by the equity market values during the Greenspan period could be demonstrated by the reduction in the 10-year treasury bonds and commercial mortgages spread. Additionally, the authors noted that the decline of the spreads of the 10-year mortgage yields enabled REITs to accommodate more risk than is expected.

The package of real estate into traded funds such as REIT has been increasing and the price movement becomes more sensitive to allocation movements among investors. Therefore, the REIT values changes, which depends on the real estate fundamentals rather than adjustments in the portfolio (Baum, 2015). According to Chang, Chou and Fung (2012) the denominator effect that pushed most of the real estate investors to reduce exposure to the 2007 subprime crisis consequences of the equity market losses. Furthermore, the present structure property funds values are more dependent on the movements in the capital markets than the underlying property fundamental. In the study of Chang, Chou and Fung (2012), authors demonstrated the systematic risks from the effect of financial disaster, which the finding shown that, the unmitigated rise in foreclosures and mortgage delinquencies. These led to a financial downturn characterized by a reduction in consumption levels, credit crunch and a collapse of the stock market. The consequences from the financial disaster caused most of the financial institutions suffered due to defaults in mortgage payments. Moreover, the authors discovered that there is a strong linkage between overall market returns and REIT stock returns but the not sensitive and negative correlation to interest rate changes.

CONCEPTUAL FRAMEWORK

Figure 2: Proposed Conceptual Framework



In Liu, Loudon and Milunovich (2012) suggested that the health of an economy signaled by the returns in the stock market, and this would affect the demand for property and construction. Moreover, equities form an important part of the wealth of households, and this precludes the household's future attitudes towards spending and consumption. The investors take into consideration the impact that stock return would have on portfolios will affect the decision and demand for real estate investments. Therefore, the significant time variation between stock return and a correlation series of REIT stock return are vital for the Malaysia equity market. In the study of Pierdzioch, Risse, Gupta and Nyakabawo (2018), analyzed the REIT stock returns with the expected and unexpected inflation with a set of predictors factors show an income from the composite index undoubtedly are the most vital predictor to account for the REIT stock returns. Moreover, on the study of Fang, Chang, Lee and Chen (2016), finding shows that coefficients for the stock index possess a positive relationship, highlighting that the stock index produces positive and consistent effects on the REIT indices of China, Singapore, and Japan. Leone (2011), study the securitized property and economic factor such as rental index in U.K., demonstrate that REIT stock return increased as the unexpected changes in the growth of rental collection and the corresponding yields exhibited a positive influence on the overall REIT stock return.

RESEARCH METHODOLOGY

The study aims to examine the momentum effect of macroeconomic and financial factors on Islamic REITs stock return. Applied the quantitative research and secondary data to derive the empirical results of cointegrated time series of Islamic REITs stock return. According to Kruger (2003), quantitative data allows the research to replicate the vast amount of information and facilitate comparisons across categories and over time. The macroeconomic and financial data are collected from Bloomberg terminal respectively. This study retrieves monthly data of 162 observations from the period of June 2006 to December 2019. The measurement of Islamic REIT stock return in this study is proxy by Al-Aqar Healthcare REIT, the justification been the oldest Islamic REIT in Malaysia with 13 years of experience and larger sample can be drawn to conclude solid foundation for the study and empirical findings. In order to calculate the percentage change of Islamic REIT stock return as in the equation 1.

$$\Delta \text{Islamic REIT} = \frac{\text{Stock price } t - \text{stock price } t - 1}{\text{stock price } t - 1} \quad (1)$$

Where,

- Δ Islamic REIT = Percentage changes of Islamic REIT stock monthly return between t period and $t-1$ period.
- Stock price t = The Islamic REIT closing stock price at end of the trading month t .
- Stock price $t-1$ = The Islamic REIT closing stock price at end of the trading month $t-1$.

The quantification of macroeconomic and financial factors for this study are retrieved from Bloomberg terminal as in table 1.

Table 1: The Quantification of Macroeconomic and Financial Factors

	Factor	Proxy	Quantification	Unit of Measurement
Macroeconomic	Economy Growth	Industrial Production Index	Industries + mining + electricity	Index
	Inflation	Consumer Price Index	(Current Period Price of the Basket)/(Base Period Price of the Basket) $\times 100$	Index
	Money Supply	M2	M1 + Money Market Funds + Fixed Deposit	Monetary value
	Exchange Rate	United State Dollar to Malaysia Ringgit	The quotation price of USD / MYR	Rate
	Interest Rate	Islamic Interbank Rate	The quotation rate between Malaysia Islamic Interbank	Rate
Financial	Long-Term Bond Yields	10-years Government Investment Issue	Demand and supply quoted by the market force in Malaysia	Rate
	Systematic Risk	REIT Beta	Covariance / Variance	Ratio
	Stock Market Index	FBM EMAS Shariah Index	Constituents of the top 100 Shariah compliant company	Index
	Rental Index	Purpose-Built Office Index	Investment grade purpose-built office buildings in Kuala Lumpur, Selangor, Johor and Pulau Pinang.	Index

Analysis Design

Unit Root Test

The unit root test is used to determine the order of each of the factor's integration. The series of data are collected to check the stationarity to prevent the result to be invalid. The mean, variance, and covariance of series are constant across different periods which indicate that the factors are in stationary trend (Gujarati & Porter, 2009). Hence, the stationary factors will provide more accurate results as compared to non-stationary factors. Most economists will argue that a macroeconomic time series contains unit root and its fluctuation over time might suggest a non-stationary trend. It is equally important to have a stationary time series to avoid biased results which is called spurious regression. Hence, the Augmented Dickey-Fuller (ADF) test is used to analyze the stationarity of the factors.

The Johansen and Julius Co-integration Test

The co-integration uses to examine the co-movement of a long-term asset price and develops a long-term connection through computing the independent factors long run equilibrium. Thereafter, the estimation of the correlation within the error correction model is conducted to identifies the

stochastic trends shared to the corresponding time series. The regression model for this study as in the equation 2

$$R_t = \alpha + \beta_1 IPI_t + \beta_2 CPI_t + \beta_3 M2_t + \beta_4 ER_t + \beta_5 IIR_t + \beta_6 GII_t + \beta_7 Beta_t + \beta_8 FBMES_t + \beta_9 PBO - RI_t + \varepsilon_t \quad (2)$$

Where,

R_t	=	Islamic REIT stock return at time t
α	=	Constant
$\beta_1 IPI_t$	=	Sensitivity to the changes in economic growth at time t
$\beta_2 CPI_t$	=	Sensitivity to the changes in inflation at time t
$\beta_3 M2_t$	=	Sensitivity to the changes in money supply at time t
$\beta_4 ER_t$	=	Sensitivity to the changes in foreign exchange at time t
$\beta_5 IIR_t$	=	Sensitivity to the changes in interest rate at time t
$\beta_6 GII_t$	=	Sensitivity to the changes in long-term bond yield at time t
$\beta_7 Beta_t$	=	Sensitivity to the changes in systematic risk at time t
$\beta_8 FBMES_t$	=	Sensitivity to the changes in stock market index at time t
$\beta_9 PBO - RI_t$	=	Sensitivity to the changes in rental index at time t
ε_t	=	Error term

Vector Error Correction Model

The co-integration uses to examine the co-movement of a long-term asset price and develops a long-term connection through computing the independent factors long run equilibrium. Thereafter, the estimation of the correlation within the error correction model is conducted to identifies the stochastic trends shared to the corresponding time series. The regression model for this study as in the equation 2.

$$\Delta y_t = \alpha \varepsilon_{t-1} + \beta \Delta x_t + \mu_t$$

Where,

y_t	=	Dependent factor in the study model at the period of t
x_t	=	Independent factor in the study model at the period of t
α	=	Coefficient of lagged y_t
ε_t	=	Error term (structural shocks)
μ_t	=	Random distribution

A VECM is a form of a restricted Vector autoregression (VAR) developed for utilization with nonstationary series which are said to be co-integrated. Nevertheless, the co-integration relationships of the VECM are developed into its description to regulate the long run behavior of the endogenous factors to congregate the co-integrating relationships whilst permitting for short-run adjustments (Diebold & Watson, 1996). The VECM matches the VAR of order (p), whereby the p is the quantity of lags identified from the analysis of the co-integration in the starting differenced series.

DATA ANALYSIS

This study analyzes the long run relationship between the macroeconomic and financial toward the Islamic REIT stock return from June 2006 to December 2019. In addition, the unit root test to reduce the chances of the model suffering econometric problems and the ordinary least squares method is not efficient and no longer valid to capture the effect of long run analysis. Hence, the VECM model will be applied that is specifically designed to capture the liner independencies among multiple time series. The table 2 is the ADF unit root test t-statistic for the study factors.

Table 2: Augmented Dickey-Fuller Unit Root Test

	Factors	At Level		First Difference	
		Intercept	Trend and intercept	Intercept	Trend and intercept
Macroeconomic	Islamic REIT	-0.5851	-2.8657	-14.7516***	-14.6964***
	Economic growth	-2.2367	-3.4333	-18.8048***	18.7655***
	Inflation	-1.0463	-1.8188	-12.3347***	-12.3019***
	Money Supply	-0.4265	-1.8841	-12.4363***	-12.4016***
	Exchange Rate	-0.9008	-2.0476	-11.8917***	-11.9167***
	Interest Rate	-2.4174	-2.4739	-10.5970***	-10.5815***
Financial	Long-Term Bond Yields	-1.7181	-2.0274	12.5027***	-12.4631***
	Systematic risk	-2.0179	-2.1034	-15.4410***	-15.5625***
	Stock Market Index	-2.160895	-1.8373	-11.4691***	-11.5464***
	Rental Index	-1.3503	-1.9307	-21.7305***	21.6975***

In Table 2, the ADF unit root test shown time series data of Islamic REIT, financial and macroeconomic factors are stationary and contain no unit roots problem at first difference. Therefore, there is sufficient evidence to conclude that there is no unit root for all the factors and all the factors are stationary in the first difference level. Furthermore, in the ADF test, Sargan and Bhargava (1983) mentioned the optimal finite sample tests for the unit root to investigated time series situations, for instance, statistics examines the null hypothesis of the unit root in the one-sided alternatives against first order autoregressive models, whether the process is explosive or stationary under the alternative hypothesis.

Table 3: Johansen and Julius Co-integration Rank Test

Rank	Trace Statistic	Critical Value	Max-Eigen Statistic	Critical Value
r = 0	380.8024***	232.1010	99.80082***	61.20339
r <= 1	281.0015***	190.8764	85.91249***	55.24026
r <= 2	195.0891***	153.6341	68.02074***	49.28747
r <= 3	127.0683**	120.3673	43.22161	43.29404
r <= 4	83.84671	91.11028	34.32417	37.27779
r <= 5	49.52254	65.81970	18.54274	31.23922
r <= 6	30.97980	44.49359	17.28293	25.12408
r <= 7	13.69686	27.06695	7.984394	18.89282
r <= 8	5.712470	13.42878	4.286676	12.29652
r <= 9	1.425794	2.705545	1.425794	2.705545

Note: *, **, *** indicates the rejection of the null hypothesis at 10%, 5%, 1% significance levels. The Johansen and Julius Co-integration test is based on the MacKinnon-Haug-Michelis (1999) p-values.

In Table 3 present the Johansen and Julius Co-integration test rank for the trace test statistic and maximum eigenvalue statistic for determining the number of Islamic REIT stock return, financial and macroeconomic factors integrating vectors (Γ) employed Johansen and Julius maximum likelihood approach. In trace test statistics indicates there is four co-integrating equation less than 10 percent significant level, or the critical value of rank 0 is 232.1010 which are greater than 95 percent level critical value. On the other hand, the max-eigen statistic indicates that there is three co-integrating equation less than 10 percent significant level, or the critical value of rank 0 is 99.800, which greater than 95 percent level critical value. The empirical analysis exhibits a long run relationship and sufficient evidence to proceed for VECM for the long run estimation on each independent factors.

Table 4: Johansen and Julius Co-integration Rank Test

Factor	Coefficient	Std. Error	t-Statistic	Prob.
Dependent Factor: Islamic REIT				
IPI	12.8153	6.2897	2.0375	0.0433**
CPI	51.9229	11.7433	4.4215	0.0001***
M2	19.5916	11.3714	1.7229	0.0869*
ER	9.2484	5.39138	1.7154	0.0883*
IIR	13.6700	2.9805	4.5865	0.0001***
GII	2.4191	3.7384	0.6471	0.5185
Beta	-0.0275	0.0091	-3.0221	0.0029***
FBMES	2.9702	3.036	0.9783	0.3294
PBO-RI	0.0765	0.0228	3.3494	0.0010***
C	25.8973			

*Note: *, **, *** indicates the rejection of the null hypothesis at 10%, 5%, 1% significance levels. The normalized cointegrating coefficients and probability value is based on the MacKinnon-Haug-Michelis (1999) p-values.*

The macroeconomic factors of economic growth have a significant positive effect on the Islamic REIT stock return, it indicated there is co-integrated positive long run relationship, a change in the economic growth positively with the coefficient of 12.8153 is associated on the Islamic REIT stock return. On the inflation, the empirical analysis shown a significant positive in the co-integrated long run relationship. The VECM estimates an increase in the inflation with coefficient of 51.9229. Furthermore, money supply indicated a significant positive in the co-integrated long run causality relationship with Islamic REIT stock return. On the exchange rate between Malaysia Ringgit and the United State dollar as proxy in measuring the effect toward the changes on Islamic REIT stock return, the coefficient is statistically significant at 10 percent level. Nevertheless, on the interest rate, the VECM estimates on Table 4 shown that significant negative co-integrated long run causality relationship in explaining the Islamic REIT stock return.

On the other hand, to investigate the co-integrated long run behavior between the Islamic REIT stock return and financial factors, the systematic risk shown a significant negative effect on the Islamic REIT stock return with co-integrated negative long run relationship. Moreover, the financial factors of long term bond yield and stock market index estimates shown positive insignificant co-integrated long run relationship towards the Islamic REIT stock return with a coefficient of 2.4191 and 2.9702. Additionally, in Table 4 explained the linear combination of macroeconomic and financial factors shown an empirical analysis of significant long run relationship with the value in relation to the Islamic REIT stock return except for the long term bond yield and stock market index.

CONCLUSION AND DISCUSSION

In Table 5.1, it summarizes the coefficient of the relationship among macroeconomic and financial factors in relation to Islamic REIT stock return. The macroeconomic factors of economic growth, inflation, money supply, foreign exchange rate and interest rate shown a positive and significant relationship towards the Islamic REIT stock return. The empirical analysis of co-integration coefficient indicated there is sufficient evidence to conclude that there is significant to explain the changes in the Islamic REIT stock return are associated with the changes in the response of macroeconomic factors. Moreover, the macroeconomic factors is statistically positive relationship, instances an increased in value of the economic growth, inflation money supply, foreign exchange rate and interest rate caused an increased in the value of Islamic REIT stock return. On the other hand, the financial factors of long term bond yield and stock market index shown a positive and insignificant relationship towards the Islamic REIT stock return. The empirical analysis of co-integration coefficient of probability value implies that changes in the long-term bond yield and stock market index inconsequential with changes in the Islamic REIT stock return. On the factor of rental index, it shown a significant towards the Islamic REIT stock return. Moreover, on the systematic risk indicating that signification negative relationship in explaining the changes in the value of Islamic REIT stock return.

Table 5: The Statical Summary of Macroeconomic and Financial Factors in Relation to Islamic REIT Stock Return

Factor	Relationship	Significant	Long run Relationship
Economic Growth	+	Yes	✓
Inflation	+	Yes	✓
Money Supply	+	Yes	✓
Foreign Exchange Rate	+	Yes	✓
Interest Rate	+	Yes	✓
Long-Term Bond Yield	+	No	✗
Systematic Risk	-	Yes	✓
Stock Market Index	+	No	✗
Rental Index	+	Yes	✓

Note: (+) show positive relationship while (-) show negative relationship. (✓) show there is a long run relationship while (✗) show there is no long run relationship.

The empirical analysis consistence with Bouchouicha and Fiiti (2012) concluded a long run relationship that propels the various real estate markets. It was suggested that the returns of property trust funds and equity stocks are influenced by the economic growth of a country, which also acts as the yardstick of the economy. An economic growth is one of the critical factors that affect REIT return, a rise in economic growth leads to more cash being available for investment in assets such as real estate. Moreover, commercial property returns are positively correlated overtime with economic growth, an observed that the property rents and prices had a positive link to the country economic growth since the latter can act as demand stimulant for real estate investments. The economic growth increases cash flows and reduces the credit standards and this translates into increased margins for REIT management company.

On the other hand, an adjustment on increasing or higher rental collection transform into higher dividends payment and eventually it affected the prices of Islamic REIT. In a healthy economic activity and especially when there is a boom, inflation is more likely to happen and contribute to higher REIT management company and tremendous ascend in the rental collection when an economy is running beyond its productive capacity. Nevertheless, REIT management company hold fixed assets for the long term as source of income, an inflation would be a significant concern since the real return from the investment could be eroded. An increase in the degree of the liberalization of the financial market, an increased international trade diversification and the adoption of managed float foreign exchange rate, stock markets and exchange rates increasingly intertwined in Malaysia economic. Nevertheless, an expansion of the money supply would result in a rise in the amount of money made available to the real estate sector and this creates an increase in demand and growth of the real estate prices. In addition, the empirical analysis of statistical analysis shown a positive long run relationship between interest rate and Islamic REIT stock return, it consistence with Allen, Madura and Springer (2000) demonstrated REIT stock returns could be influenced by the exposure on long-term variations of interest rates. Moreover, Giliberto and Shulman (2017) noted that there is a time factor to interest rate sensitivity and it changes direction regularly, which means that any pure effect is usually subsumed in the REIT stock return. The financing duration and sensitivity degree to interest rate changes are correlated, the longer the financing duration, the higher degree sensitivity to interest rate.

On the financial factors, the long term bond yield with government investment issue is based on Murabahah concept and a deferred mark-up sales of commodities mainly crude palm oil as underlying. That the reason, the empirical analysis inconsistent with most of empirical review that documented a significant relationship between long term bond yield and Islamic REIT stock return. Nevertheless, this empirical analysis further contributes to the Islamic finance literature indicated a long term bond yield as inconsequential factors in explaining the Islamic REIT stock return. Nonetheless, an increase in the REIT beta caused by the changes in macroeconomic factors. The systematic risk complements a greater part of the bias in estimation of REIT market risk premium. A significant growth in systematic risk in the real estate market has been witnessed as properties become more exposed to the fundamental factors associated with capital markets. The stock market index reflects the overall performance of the Islamic equity market, but the performance of the Islamic

REIT stock prices rather depends on the series of rental collection underneath the real estate portfolio. Moreover, the rental income is influence by external factors that include effective demand, population, infrastructure of facilities, locational attributes, and economic propensity.

In a nutshell, the economic development of Malaysia property trust funds has been significantly boosted by the improvement of Islamic finance witnessed in recent years. The relationship among the various financial and macroeconomic factors and Islamic REITs on Malaysian economy should be given necessary attention by researchers to ensure the stability and improvement of Malaysia Islamic property trust funds market. Therefore, the objectives of this study and its findings are not only important to academicians and investors, but also to policy makers. It is the optimism of the researcher that this study will deepen the knowledge of investors and those looking to invest in Islamic property trust funds.

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BAFE033:
**HOW DOES ICT AFFECT FDI IN HOST COUNTRY? EVIDENCE
FROM SINGAPORE**

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Abstract

Singapore has seen impressive growth over the years as the fastest growing economies in South-East Asia. Singapore's ability to provide a sophisticated business environment has made it a preferred destination country for foreign direct investment (FDI) activities by foreign investors. The evolution of Information and Communication Technology (ICT), in recent years, has dramatically altered the traditional business landscapes. Also, the rapid improvement in economic performance in the Singapore economy and by a similar pattern in FDI has motivated this study to conduct a research on the factors effecting FDI particularly with regards to Singapore. Hence, this study aims to examine the effect between ICT and FDI over the period of 1989 to 2019 by employing the Autoregressive Distributed Lag (ARDL) bounds testing approach. The findings of this study shows that ICT is insignificantly affect the inflows of FDI in Singapore. The rapid development of ICT in Singapore associated with an inadequacy of manpower in ICT sector could be the possible reason for ICT to be insignificant in attracting FDI. Hence, it suggests that government may consider to increase budget to recruit more professional foreign manpower and provide training for the purpose to produce more ICT expertise as well as upskilling the existing ICT workforce.

Keywords: Foreign Direct Investment (FDI), ICT Development, Human Capital, Trade Openness

BAFE034:
**A CONCEPTUAL EXPLORATION OF THE BIO-DIESEL DEMAND
FACTOR'S ROLES IN STABILIZING THE PALM OIL PRICE IN
MALAYSIA**

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Abstract

Due to the future environmental benefits, biodiesel has received significant attention as an alternative fuel. In Malaysia, palm oil is the primary feedstock for biodiesel production. Due to the palm oil industries' dynamic growth, this sector is vital to Malaysia's national economy. The palm oil industry's growth has led to an increase in Malaysia's potential as a significant player in the oleo-chemical and biodiesel industries. Thus, based on the law of demand and supply, the increase in biodiesel usage is expected to boost its feedstock price. So, higher demand for biodiesel is expected to increase the palm oil price. The latest news from The Malaysian Reserve highlighted that B20 biodiesel is expected to be available throughout Malaysia by June 2021. Thus, the biodiesel demand factors could stabilize and boost palm oil price as the main aim of the National Biofuel Policy. So, what is the nature of the relationship between demand factors of bio-diesel on palm oil price? Thus, this study's objectives are to conceptualize the domestic bio-diesel demand model directed towards stabilizing the palm oil prices in Malaysia. Accordingly, the findings of this study's future research may provoke some contributions to the policymakers and the market players to understand the relationship between palm oil price and biodiesel demand. This helps provide some insights into the design of sustainable energy, which is one of our national agendas on Sustainable Development Goals.

Keywords: Malaysia, biofuel, Palm oil price, environmental, Sustainable Development Goals

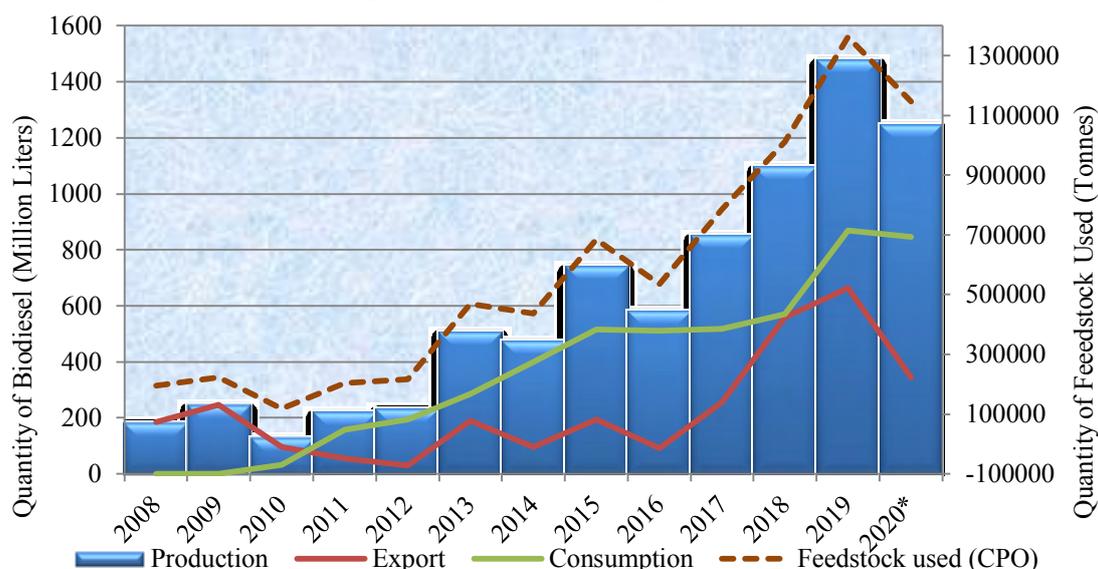
INTRODUCTION

Nowadays, rapid growth in the world's population has led to an increase in the consumption of depleting fossil fuels. In an optimistic view, this scenario encourages the development and innovation of renewable fuels like biodiesel. Due to the future environmental benefits, biodiesel has received significant attention as an alternative fuel globally. Palm oil is the primary feedstock for biodiesel production in Malaysia, considering its primary agricultural export commodity. To date, oil palm plantation covers around 5.64 million hectares of land in Malaysia, with maximum crude palm oil (CPO) production capacity of over 19.5 million tonnes (as recorded in 2019) (Adnan, 2020). Hence, Malaysia is the second-largest palm oil producer and supplier after Indonesia, contributing 31 percent of world palm oil production¹.

¹ Malaysia and Indonesia account for approximately 85-90 percent of the total world production of palm oil (Voora, Larrea, Bernudez, & Balino, 2019).

Applanaidu, Yusop, Shamsudin, and Alias (2011) indicate that the growth of the palm oil industry can contribute 7.6 percent share of the real GDP of Malaysia in 2020. They added that palm oil export would grow 7.0 percent per annum and reach about RM 84 billion by 2020. Due to the palm oil industries' dynamic growth, this sector has been described as a vital contributor to Malaysia's national economy (Lau, Tan, Lee, and Mohamed, 2009). The palm oil industry's growth has led to an increase in Malaysia's potential as a significant player in the oleo-chemical and biodiesel industries. Accordingly, Figure 1 shows the production, export, and domestic consumption of the palm in Malaysia. Notably, the production, export, and consumption are showing an increasing trend by year².

Figure 1: the Production, Export, and Consumption of Biodiesel and the Feedstock Used in Producing the biodiesel in Malaysia from 2008 to 2020*.



Source: USDA Foreign Agricultural Service, 2021

Note: * represent the expected value. CPO represents crude palm oil.

Even though palm oil production and export volume are consistent over the years without any significant structural effect (refer to Figure 1), palm oil prices seem to be highly fluctuating from the year 2000 onward. This can be viewed in Figure 2. This fluctuation has seemed to be directed by the demand side of palm oil's commodity. Thus, some researchers such as Applanaidu et al. (2011), Dutta et al. (2021), and Szulczyk, Yap, and Ho (2021) argued that the additional demand created by biodiesel production could be one of the reasons for this instability of the palm oil price (Biofuel International, 2020). This statement is further supported by the data supplied by USDA Foreign Agricultural Services (2021), whereby the feedstock used for biodiesel production in Malaysia is increasing dramatically from 195,000 metric tonnes in 2008 to 1,147,000 metric tonnes in 2021.

Besides, Malaysia introduced National Biofuel Policy on March 21, 2006. National Biofuel Policy's objective is "to use an environmentally friendly and sustainable energy source to reduce dependency on fossil fuels and stabilize and boost palm oil prices" (USDA Foreign Agricultural Service, 2016). Under the National Biofuel Policy, biofuel production and supply mainly focus on transportation, industry, and exportation. Thus, based on the law of demand and supply, the increase in biodiesel usage is expected to boost its feedstock price. In this case, higher demand for biodiesel is expected to increase the palm oil price. The latest news from The Malaysian Reserve highlighted

² There is a slight drop in the plantation and production of palm oil in Malaysia for year 2020. The decrease rate is about 0.594 and 3.61 percent for the plantation and production rate, respectively. This drop is expected due to the Covid-19 pandemic impact on the palm oil industry.

that B20 (blended 20%) bio-diesel available throughout Malaysia by next June (Shah, 2021). Accordingly, Plantation Industries and Commodities Minister Datuk Dr. Mohd Khairuddin Aman Razali said the B20 biodiesel program would require about 1.06 million tons of palm oil to serve the local consumption bio-diesel also expected to reduce some 3.2 million tonnes of carbon dioxide in the greenhouse gas emission.

Figure 2: The Average Palm Oil Price in Malaysia from 1980 to 2021 (RM/Tonnes)



Source: Trading economics, 2021

This statement indicates that palm oil demand will increase in the coming future due to biodiesel production. Fundamentally, the production of biodiesel is determined by the demand for bio-diesel. Thus, the biodiesel demand factors could stabilize and boost palm oil price as the main aim of the National Biofuel Policy. What is the nature of the relationship between demand factors of bio-diesel on palm oil price? These are the interesting questions to be explored. Based on the review that has been done, the bio-diesel investigation from the demand side seems to be very limited in Malaysia. Besides, no clear evidence on the role of bio-diesel demand toward the palm oil price is presented in the previous study. Arguments indicate that the additional demand for bio-diesel for palm oil could stabilize its price, but there is no empirical evidence to prove the statement. Hence, the future research outcomes may provide some insights into sustainable energy design, which is one of our national agendas on Sustainable Development Goals. Thus, the preliminary objective of this study is to conceptualize the domestic bio-diesel demand model towards the price of palm oil in Malaysia.

LITERATURE REVIEW

Arshad and Hameed (2009) stated that palm oil development to fulfill the bio-diesel demands has made the 2008 crisis unique and complicated. This statement is supported by the study of Dodder, Kaplan, Elobeid, Tokgoz, Secchi, and Kurkalova (2015). Dodder et al. (2015) studied the impact of the energy price and the bio-diesel supply on the agricultural, energy, and the environment using the integrated modeling approach. The authors added that the bio-diesel demand increases crop usage in biofuels, especially ethanol and biodiesel, which are substitutes for gasoline and diesel.

However, the study of Applanaidu et al. (2011) identified that the increase in the bio-diesel demand would increase palm oil export, domestic price, and palm oil production in Malaysia. Furthermore, another similar study mainly focused on discussing the impact of biodiesel demand on Malaysia's palm oil price. However, this study does not provide an empirical discussion on the relationship. The authors of this study Abdullah, Abas, and Ayatollah (2007), explain the impact of bio-diesel on the palm oil industry based on the data. The authors indicate that biodiesel's increasing demand will increase Malaysia's palm oil prices in the coming years. This statement again

strengthened the argument that bio-diesel production and demand have an immediate effect in Malaysia. However, empirically, this statement is still unverified in Malaysia.

The discussion will be narrow down to the components of demand factors. This discussion will help in developing the conceptual model of the biodiesel demand. Table 1 shows the summary of past studies relevant to the energy and fuel demand model. Accordingly, some studies such as Cho, Lee, and Kim (2007), Flug and Hercowitz (1998), and Lanclos, Devadoss, and Guenhner (1997) used investment values as a determinant of demand. Cho, Lee, and Kim (2007) argued that information and communication technology (ICT) investment having an enormous impact on productivity. Furthermore, the authors added that the investment has a substitution effect and compensation effect on the energy demand. The study's finding indicates that the investments increase the demand for electricity in the service sector and decrease the demand in the manufacturing sector in South Korea.

Debates on the possible influences of higher demand for crops on changing land use and food production are due to the government policies to bring biodiesel into the energy mix. Accordingly, Peri and Baldi (2013) argued that the rapid increase in biodiesel production is due to the legislative framework. Those authors added that a series of policies implemented helps in the expansion of the bioenergy sectors. This study's findings indicate that the biofuel policies are strengthening the relationship between the diesel price and the agricultural crop price in the long run. Thus, Chen and Khanna (2012) supported this statement by adding that the government policies such as Renewable Fuel Standard (RFS), volumetric ethanol excise tax credit (VEETC), and tariffs that restrict the imports of sugarcane ethanol rushed the production of biofuel in the US.

The own price and the substitute price are known to be important determinants of the demand model. Accordingly, Kouris (1976) pioneer study indicates that price and income are the main determinants of energy demand. The author argued that when the fuel price increase, this will lead to more efficient used fuel being demanded. This is how the price factor influences demand. This statement is supported by the earliest study of Robinson (1973), who indicated that the price changes incorporated with the supply and the demand of all competing commodities. Tokgoz and Bhandary (2011) concluded that biofuel and traditional transportation fuel are the most critical factors that determine the consumers' demand.

Income is an excellent measurement to capture the purchasing power of consumers. In this case, most of the studies which capturing the demand used income as the primary determinant. For instance, Applanaidu et al. (2011) represent Malaysia's GDP to capture the income effect on the biodiesel export demand. The study indicates that income has a significant impact on the demand function. These two variables are positively related, and an increase in income will increase biodiesel export demand. This result is consistent with the earliest study of Algieri and Kanellopoulou (2008). Algieri and Kanellopoulou (2008) studied the determinant of demand for tourism export in four different countries.

Robinson (1973) argued that population tends to be the primary determinant of movement in the total demand. This is because; increasing the population rate can increase the consumption level, leading to the demand for the goods increase in the end. Hence, Robinson (1973) studied the determinant of demand for fish and, based on the finding, the world population has a significant positive relationship with the demand for fish in the world. However, most energy demands studies, such as Belhaj (2002) and Tokgoz and Bhandary (2011), used vehicles' population compared to the human population. Since fuel is mainly used in transportation, the vehicles' populations are more significant in capturing fuel demand than humans.

Finally, the demand function can be influenced by external shocks as well. Consequently, Goh (2005) argued that an external shock occurs; the general economy and industries will stroke the

strong effect. In this case, few authors used the crisis as a determinant of the demand model. For instance, Ashford, Hall, and Ashford (2012) studied the consumer demand crisis on the crisis in employment. The authors indicate that the economic crisis of 2008 had an impact on the consumer demand functions. The authors argued that an economic crisis would impact employment status and lead to income inequality and reduced consumer demand for goods.

Table 1: The Summary of Literature Reviews on the Demand Model

Author (year)	Demand Model	Determinants of Demand Model	Major Findings
Maaouane <i>et al.</i> , (2021)	<ul style="list-style-type: none"> Industrial energy demand model 	<ul style="list-style-type: none"> Population Price index Purchasing Power Parity GDP Household Final Consumption Expenditure 	<ul style="list-style-type: none"> Mixed results were found based on various sub-industries Mixed results found Mixed results found Mixed results found Mixed results found
Murshed (2021)	<ul style="list-style-type: none"> Energy and electricity demand model 	<ul style="list-style-type: none"> Per capita real GDP Real household final consumption expenditure Industrial value-added Imported energy Rural-to-urban migration 	<ul style="list-style-type: none"> Positive relationship found
Sharimakin (2021)	<ul style="list-style-type: none"> The industrial energy demand model 	<ul style="list-style-type: none"> Energy consumption Real outputs Real energy price 	<ul style="list-style-type: none"> Industrial energy demand is characterized by endogenous factors embedded in the asymmetric price effects.
Kerdan <i>et al.</i> (2020)	<ul style="list-style-type: none"> Forecast energy demand 	<ul style="list-style-type: none"> Investment (advance technologies) Land 	<ul style="list-style-type: none"> Agricultural and land-use models are set to play a significant role
Maeda, Tokimatsu, and Mori (2015)	<ul style="list-style-type: none"> Biofuel demand model for woody biofuel 	<ul style="list-style-type: none"> Income Price Production (cultivated land) 	<ul style="list-style-type: none"> Demand for all main crops is increasing, especially that of soybeans, the most significant increase in demand is occurring in China and South America.

Table 1: The Summary of Literature Reviews on the Demand Model (Continued)

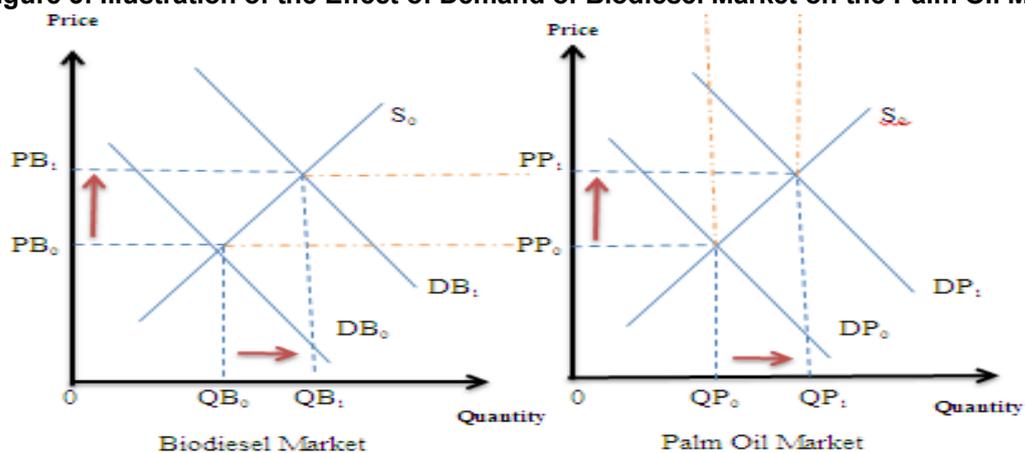
Author (year)	Demand Model	Determinants of Demand Model	Major Findings
Kochaphum, Gheewala, and Vinitnantharat (2013)	<ul style="list-style-type: none"> Biodiesel demand 	<ul style="list-style-type: none"> Commodity price Farmer income Commodity production Socio-economic impact 	<ul style="list-style-type: none"> Positive relationship found Positive relationship found Negative relationship found Negative relationship found
Tokgoz and Bhandary (2011)	<ul style="list-style-type: none"> Biofuel Demand model 	<ul style="list-style-type: none"> Population of vehicles Prices 	<ul style="list-style-type: none"> Positive relationship found Positive relationship found
Cho, Lee, and Kim (2007)	<ul style="list-style-type: none"> The industrial electricity demand model 	<ul style="list-style-type: none"> Investment in ICT 	<ul style="list-style-type: none"> The positive relationship found toward the servicing sector The negative relationship found towards the manufacturing sector
Goh (2005)	<ul style="list-style-type: none"> Contraction demand model 	<ul style="list-style-type: none"> Financial crisis 2008 	<ul style="list-style-type: none"> Negative relationship found
Belhaj (2002)	<ul style="list-style-type: none"> Vehicle and fuel demand model 	<ul style="list-style-type: none"> Population of vehicles 	<ul style="list-style-type: none"> Positive relationship found
Wohlgemuth (1997)	<ul style="list-style-type: none"> Transport energy demand model 	<ul style="list-style-type: none"> Income Price 	<ul style="list-style-type: none"> Positive relationship found Positive relationship found

CONCEPTUAL FRAMEWORK DEVELOPMENT

A draft of the conceptual framework has been developed to show the inclusive idea of this study. The conceptual framework is shown in Figure 4, which summarizes the projected significant directions between the demand factors of bio-diesel and the palm oil price. Biodiesel demand factors will be treated as the independent variable expected to impact the dependent variable, i.e., the palm oil price in Malaysia. This direct relationship can be explained by the "law of demand and supply," widely used in commodity demand studies (Zhang et al., 2009; Koizumi, 2015; Al-Maadid et al., 2016). The law of demand and supply is considered a fundamental principle in determining the production and price of a product based on the demand and the supply level in the real market, which means to say that the prices of a product are influenced by the demand for the product and the production level of the product in the market (Moore, 1919; Hendry and Morgan, 1929).

Thus, based on the law of demand, the increasing biodiesel production using palm oil will create additional demand on the palm oil industry (Applanaidu et al., 2011). Consequently, the additional demand will increase the demand pressure in the palm oil industry. Accordingly, this could directly influence the price of palm oil in Malaysia. Furthermore, this situation can be viewed graphically in Figure 3. Figure 3 shows how biodiesel and palm oil's supply and domestic demand affect Malaysia's final price. Based on the figure, the biofuel increase from DB₀ to DB₁ in Malaysia will increase the biodiesel price from PB₀ to PB₁. It will increase production and will increase the supply of biodiesel from QB₀ to QB₁. Accordingly, the biodiesel production increase will increase the demand for palm oil from DP₀ to DP₁. This is due to the usage of palm oil as a feedstock in biodiesel production. Thus, higher demand in the palm oil market will increase palm oil prices from PD₀ to PD₁.

Figure 3: Illustration of the Effect of Demand of Biodiesel Market on the Palm Oil Market

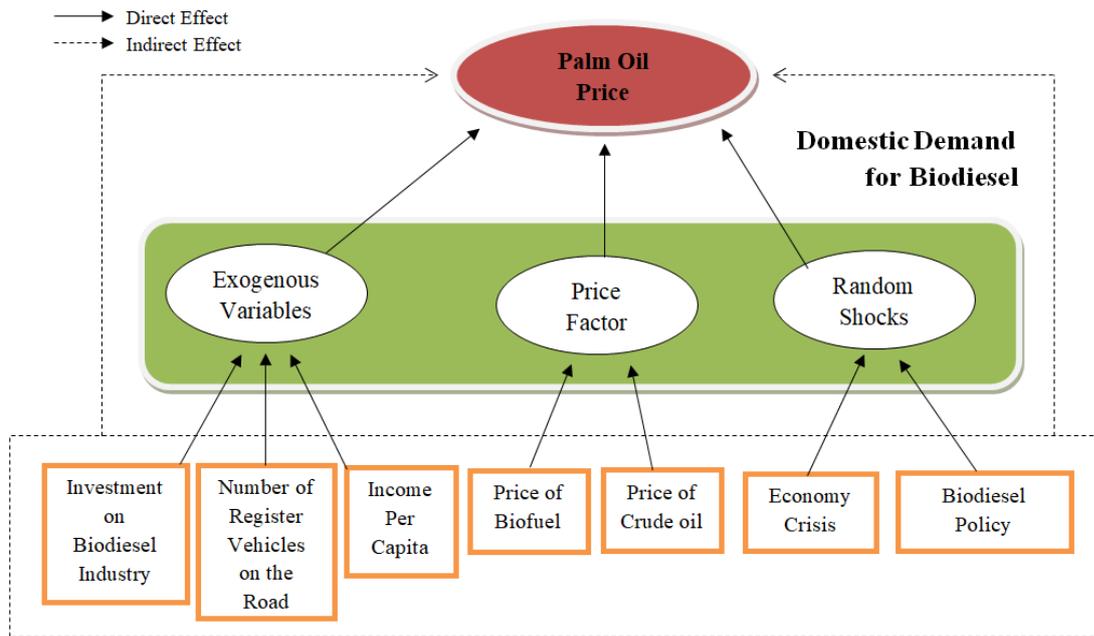


Source: Developed by the researcher

The objective of the demand analysis in this study is to identify the price factor's response, exogenous factors, and random shocks of biodiesel on Malaysia's palm oil price. Hence, the demand function is defined as exogenous factors, price factors, and random shocks, followed by Guler, Bilgic, and Gullu (2015). Accordingly, exogenous factors represent the number of registered diesel vehicles on the road, the biofuel industry's investment value, and people's income, respectively. These variables consider as the external factors that influence the domestic demand for biodiesel in Malaysia.

The first exogenous variable in the model is the number of registered diesel vehicles in Malaysia. Studies such as Robinson (1973) and Sherif and Shaairi (2013) capturing the demand factors used populations as one of the demand factors. Thus, this factor is very famous in the demand model's literature since population growth will increase the demand for the products and services. However, registered diesel vehicles on the road have been used to represent the population in this study. The number of vehicles is expected to reflect the actual biodiesel demand in Malaysia compared to the total human population since an increasing number of diesel vehicles on the road will increase biodiesel usage and its demand. This statement is supported by a study by Tokgoz and Bhandary (2011), whereby the authors indicate that the vehicle fleet determines the demand for biodiesel in the U.S. Besides, Belhaj (2002) specifies that the increase of vehicles will increase the petroleum usage in the country. Due to this reason, a positive relationship is expected between the registered number of diesel vehicles on the road and palm oil prices in Malaysia.

Figure 4: the Proposed conceptual Framework of the Study



Source: Developed by the research

Furthermore, opening up a new project or expanding the existing project's capacities is one way to increase biodiesel production capacity in Malaysia. This is because the infrastructure investment could overestimate the demand and cost (Proost and Loo, 2010; Kerdan et al., 2020). Besides, Csomos (2014) indicates that plan focusing on promoting renewable energy investment changes the current dependence on fossil fuels. This statement strongly justified that renewable energies' investment could increase its production and reduce crude oil usage. Accordingly, the biodiesel industry's investment will increase the number of plants producing biodiesel, increasing Malaysia's biodiesel productivity. Accordingly, a positive relationship is expected between investments in the biodiesel industry towards palm oil prices in Malaysia.

The third exogenous variable in the model is the income per capita. The income per capita is also crucial in determining the demand (Robinson, 1973; Uysal and Crompton, 1979; Sherif and Shaairi, 2013). This is because the income per capita is capturing wealth and the purchasing power of the buyer. Jones (1997) argued that low-income people are more price-sensitive compared to high-income people. This finding indicates that income plays an essential role in the consumer's purchasing behavior. So, increasing income could increase purchasing power. Thus, the increasing purchasing power is expected to increase the demand for biodiesel for transportation in Malaysia. This statement is further supported by the study of Khan (1995), which indicates that income is an essential determinant of Karachi's transportation and communication. Thus, a positive relationship is expected between incomes per capita to the palm oil price.

Moreover, referring to Figure 4, the price factors represent the own price of biodiesel in Malaysia and the crude oil price, respectively. The price factor is an essential indicator of the demand function (Robinson, 1973; Kouris, 1976; Uysal and Crompton, 1981; Uchoa, De Jesus, and Cardoso, 2021). The price of the goods and the substitute goods determines the buyer's decision to purchase the product. You and Hsieh (2007) highlighted that pricing is an obvious strategy to influence the demand. The authors added that demand with price dependence could be roughly categorized as additive demand and multiplicative demand. This study is a category under the additive demand of price dependence model function.

Furthermore, biodiesel is treated as a substitute for crude oil in Malaysia since biodiesel is a renewable energy source that replaces crude oil usage (Nazlioglu and Soytaş, 2011; Ji and Fan, 2012). The price of both fuels will determine the consumers' purchasing whereby, if the biodiesel is expensive, then the crude oil will be preferred by consumers and vice versa. This is proved by Tokgoz and Bhandary (2011), whereby the authors identified that the price of biodiesel relative to the crude oil (transportation fuel) is the most crucial factor of the consumer's determinant in choosing the fuel for their transportation in the U.S and Brazil. In addition, Chong et al. (2021) found that crop quality and crude oil price are the main factors for biodiesel production. However, biodiesel and crude oil prices are expected to impact the palm oil price positively. This is due to the price input in production and transportation. Due to this, a positive impact is expected from price factors to palm oil prices.

Additionally, random shocks are the unpredicted events that may impact the demand, such as the economic crisis and biodiesel policies. Furthermore, these external factors can influence the biodiesel demand as overall expected to impact the palm oil price in Malaysia. The biodiesel policy, such as the biodiesel industry's promotion, the blending mandate, and the tax reliefs, are expected to influence biodiesel's domestic demand in Malaysia. The biodiesel policy may create a good platform for the biodiesel industry to grow in Malaysia. This statement is supported by the study of Peri and Baldi (2013). Those authors argued that the rapid and steady increase in biodiesel production in the European Union (E.U.) is due to the legislative framework favoring expanding the bioenergy sector in E.U.

Besides, Peri and Baldi (2013) reveal that biodiesel policies can strengthen the link between the agricultural and energy markets. In addition, Gorter and Drabik (2015) and Chen and Khanna (2012) indicate that the biodiesel policies will increase the food grain commodity prices due to the demand factor. Furthermore, Markel, Sims, and English (2018) find that uncertainty in the biodiesel policy will discourage biodiesel investment. As a result, biodiesel policies, especially the mandate policy, can influence the demand for biodiesel. Thus, a positive relationship is expected between biodiesel policy and palm oil price.

Finally, the global and domestic economic crisis could be another significant factor in the domestic demand for biodiesel. The crisis is known to be the external factor that occurred unexpectedly, which is often related to price instability (Uri, 1983). The crisis will directly influence the goods' price level and affect consumers' demand and purchasing behaviors. Furthermore, Ashford, Hall, and Ashford (2012) argued that the crisis would impact political and social stability by influencing consumers' earning capacity and purchasing power. Thus, conceptually, the price is an essential determinant of the demand. There is strong support indicating that the crisis is indirectly expected to influence biodiesel demand in Malaysia. Accordingly, this statement is supported by the study of Goh (2005), which indicated that the Asian Financial crisis negatively impacts the demand for the public sector and the private sector in Singapore. In this case, the crisis is expected to influence the palm oil price as a price factor positively.

CONCLUSION

This study's findings could empirically show the exact role of biodiesel demand on Malaysia's palm oil price. Accordingly, this study's empirical evidence may provoke some contributions to the policymakers and the market players to understand the structure of the relationship between palm oil price and biodiesel demand. Hence, the palm oil and biodiesel industry's sustainable development will contribute to Malaysia through increased outputs, increased employment, and increased Gross Domestic Product (GDP). Even though this is a conceptual paper, it is motivated to help in developing an attractive future research area under palm oil and biodiesel.

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BAFE035:
**ENERGY TRANSITION IN DEVELOPED AND DEVELOPING
COUNTRIES: EVIDENCE FROM PARTIAL LEAST SQUARES (PLS)
PATH MODELLING**

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Abstract

Global temperatures are gradually rising, making it necessary to transform the current energy system from non-renewable to renewable energy sources. However, the obstacles of transforming energy systems are significant, thus, we need to get ready for the transition pathway. Using the framework of the Energy Transition, this study aims to investigate the transmission channels of system performance and transition readiness in realising the energy transition toward renewable energy. This study covers cross-sectional data of 115 countries obtained from the World Economic Forum. The Partial Least Squares Structural Equation Modelling (PLS-SEM) is used to analyse the data. The results show that system performance and readiness for transition are important for energy transition pathways. However, the stage of economic development also plays an important role in determining the energy transition path. Hence, apart from developing policies to improve energy sustainable and transforming the socioeconomic, policymakers should promote economic development in order to effectively uplifting the speed of transition toward renewable energy system.

Keywords: Energy transition, System performance, Transition readiness, PLS-SEM

BAFE044:
**IMPACT OF DEMOGRAPHIC FACTORS ON THE BEHAVIOURAL
INTENTION TO ADOPT CRYPTOCURRENCY AMONG MALAYSIA'S
MILLENNIALS: AN ECONOMETRIC APPROACH**

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Abstract

The global shift toward cashless society is continuing, with various techniques ranging from credit cards and payment applications to cryptocurrencies and central bank digital currencies. Cryptocurrency can be an alternative to traditional currency obtained from financial institutions and it is a decentralized currency that is not backed by any government. It operates on a content-sharing platform that uses block-chain and peer-to-peer (P2P) technology. The objective of the paper is to investigate how are the demographic factors of consumers (gender, race, age, education, and income) impact on the intention to adopt cryptocurrency among millennials in Malaysia. Using the Unified Theory of Acceptance and Use of Technology (UTAUT) Model, a total of 304 respondents were being collected. Gujarati's binomial logit qualitative response regression econometric model and Porter's method were used to analyse the data. Based on the results, with regards to young Malaysians' intention to embrace cryptocurrency, education is the most crucial variable, followed by income, age, and gender; however, race had no influence on intention. Cryptocurrency is not legal tender in Malaysia and the Centre Bank does not regulate the usage of and operation of cryptocurrency in the country. The general public is not prohibited from using cryptocurrency, but those who wish to use and adopt cryptocurrency should be wary of the risks involved. Furthermore, more study on behavioural intention may be performed base on the different states in Malaysia, which would offer a better understanding of technology adoption in rural and urban regions. Finally, the research will add to the current body of knowledge, particularly in terms of the demographic characteristics that influence the adoption of cryptocurrency.

Keywords: Cryptocurrency, Millennials, Intention to adopt, Binomial Logit Model, Malaysia

INTRODUCTION

Cryptocurrency is a form of digital and decentralized currency that is not issued or backed by any government or central bank. This digital or virtual currency is secured by cryptography, which makes it nearly impossible to counterfeit or double-spend (Frankenfield, 2020). It is stored and transacted via designated software, mobile or computer applications, or digital wallets, wherein transactions take place on secure, dedicated networks. As an unregulated digital currency available only electronically, it operates on a content-sharing platform that uses blockchain and peer-to-peer (P2P) technology (Raymaekers, 2014). Blockchain is a distributed, decentralized, public ledger which has "blocks" made up of digital pieces of information. The blockchain technology is the record-keeping technology behind the Bitcoin network. Some of the most well-known cryptocurrencies are Bitcoin, Ethereum, Ripple, Cardano, Tether, Litecoin, Stellar, Dogecoin, Solana, Polygon, Binance Coin, USD Coin, Polkadot, Uniswap, Tron, and Monero, among many others.

Figure 1: Digital New World



Source: The Economist Intelligence Unit (2021)

Furthermore, some central banks across the globe are developing their own digital currency in order to combat the competition from cryptocurrencies in their economies and financial systems. Figure 1 shows that dark blue countries like Ecuador, China, Senegal, and Tunisia had issued its digital currency. Those countries highlighted in yellow colour have announced plans to issue currency while those in light blue colours are exploring digital currency in their country.

Bitcoin was the first cryptocurrency to successfully record transactions on a secure, decentralized, blockchain-based network. In fact, cryptocurrencies like Bitcoin have been established for many years, yet many consumers still have heightened anxiety towards these new financial innovations. This is possibly because cryptocurrencies are often labelled as technology with decentralized control (i.e., not controlled by the central bank or other related authorities); as such, the supply and value of cryptocurrency are determined by its users. However, they also possess complex protocols built into their governing codes to prevent the issue of oversupplying the currencies, which may eventually lead to inflation (Martucci, 2016). Cryptocurrency can indeed be used as a substitute to traditional currency obtained from financial institutions. It can also be a medium of exchange by translating it into other currencies specific regions. Moreover, possessing cryptocurrency helps payment procedures regardless of location, such that transactions can occur by transferring or receiving the currency to or from anywhere in the globe (Martucci, 2016). The low transaction costs of cryptocurrency can also be used to send installments rapidly over the internet, thus making micropayments easier and more accessible (Grinberg, 2011). Another interesting fact is that cryptocurrencies are transparent by nature, as all transactions are recorded in the blockchain. Thus, if a company or individual has publicly used a Bitcoin address, anyone can see how much Bitcoin they own (Bunjaku et al., 2018).

The Malaysian government has started to recognize the influence of cryptocurrency and has granted conditional approval from the Securities Commission Malaysia (SCM) for certain cryptocurrency exchanges under stipulated conditions. On June 4th, 2019, the SCM announced that it had registered three recognized market operators, namely Luno Malaysia Sdn Bhd, SINEGY Technologies (M) Sdn Bhd, and Tokenize Technology (M) Sdn Bhd, to establish and operate cryptocurrency exchanges in Malaysia (Fong, 2019) (see Figure 2).

Figure 2: Three Cryptocurrency Recognized Market Operators in Malaysia



Source: Fong (2019), <https://fintechnews.my/20806/blockchain/cryptocurrency-exchange-malaysia-approval/>

Over the past few years, individual investors of cryptocurrency have been increasing gradually. The historical price of Bitcoin as per the CoinDesk Bitcoin price index is shown in Figure 3. According to Coindesk, the price of Bitcoin achieved a record-breaking high closing of \$19,783 on December 17th, 2017. After reaching nearly \$20,000, it fell to just around \$3,000 in the cryptocurrency market (CoinDesk,

2020). Although trade figures for individual investors were lower after the crash in December 2017, the overall transactions of Bitcoin have remained active due to the influx of the younger generation who continue showing interest in cryptocurrency (Reiff, 2019). In addition, several “stable coins” such as tether, Gemini dollar, and USD Coin have emerged in recent years to mitigate this volatility through a sustained peg to traditional instruments such as the US Dollar or gold (Chohan, 2019). Resultantly, at the beginning of 2019, the cryptocurrency price trend regained traction and started rising to \$11,000. Recently, the cryptocurrency (Bitcoin) price increased from \$9,353 (June 2020) to \$10,933 (September 2020), as can be seen in Figure 3.

Figure 3: CoinDesk Bitcoin Price Index from 20/06/2020 to 20/9/2020



Source: CoinDesk (2020), <https://www.coindesk.com/price/Bitcoin>

Figure 4: Bitcoin Key Metrics on 20/9/2020

24 HOUR LOW	24 HOUR HIGH	NET CHANGE	24 HOUR OPEN
\$10,864.59	\$11,180.40	\$188.90	\$10,874.76
ALL TIME HIGH	TOTAL SUPPLY	RETURNS (24H)	RETURNS (YTD)
\$19,665.39	18.49M	▲ 0.98%	▲ 53.89%
VOLATILITY (30D)	TRANSACTION COUNT (24H)	AVERAGE TRANSACTION FEE (24H)	VALUE TRANSACTED (24H)
0.44	326,660	\$2.35	\$2.93B

Source: CoinDesk (2020), <https://www.coindesk.com/price/Bitcoin>

The key metrics of cryptocurrency (Bitcoin) as of September 20th, 2020 are displayed in Figure 4. The 24-hour low price was \$10,864.59 while the high price was \$11,180.40. Total supply for Bitcoin was 18.49 million and volatility for 30 days was 0.44%. The transaction count recorded over the last 24 hours was 326,660, with an average transaction cost of \$2.35 and transaction value of \$2.93 billion.

According to crypto market capitalization aggregators, as of September 2020, there were more than 5,000 cryptocurrencies in existence in over 20,000 different markets. Bitcoin is the oldest and most well-known digital asset among these, with everything else typically referred to as “altcoin.” The latter term refers to any of the thousands of prevalent cryptocurrencies that aim to compete alongside Bitcoin and each other for ultimate domination. Nonetheless, Satoshi’s Bitcoin has been in the lead for over 11 years now despite 5,098 alternative cryptocurrencies (altcoins) existing next to the creator’s invention.

In the Malaysian context, it can be observed that Malaysians’ exposure to cryptocurrency has been increasing gradually as the economy shifts towards the adoption of financial technologies (Fintech) and the 4th Industrial Revolution (Industry 4.0). Even so, Malaysia has not been clear on the status of cryptocurrency. Bank Negara Malaysia (BNM) does not explicitly prohibit Malaysians from using cryptocurrency, leaving users to take full responsibility if they adopt it. However, Bitcoin and other digital currencies are not recognized as legal tender in the country and individuals or companies

involved in cryptocurrency trading are not protected by the Malaysian law, though cryptocurrency exchanges are required to register their users for the authorities to track money laundering.

Banks have more advantages than technology firms in developing financial services due to the former's proper risk management, bigger customer databases, and more sophisticated financial instruments. Furthermore, technology firms have to navigate a stronghold of financial regulations, which slow down their financial services development. Additionally, banks can generate trust among consumers while Fintech companies may need to solve the problems of consumer trust and adoption.

Knowledge Gap

The cryptocurrencies are very transparent in nature as all the transactions are recorded in the block-chain, thus if the company or individual has publicly used the Bitcoin address, then anyone can see how much Bitcoin is owned (Bunjaku, Trajkovska & Kacarski, 2017). Although it is transparent, precise transaction information such as sender and receiver remain anonymous due to high security. Bunjaku et al (2017) also mentioned that using of cryptocurrencies advantages and disadvantages as well. Advantages are: 1. No inflation – example: the maximum number of coins is strictly limited by 21 million Bitcoins. However, there is no possibility for development of inflation in the system, 2. Peer-to-peer cryptocurrency network – in such networks there is no master server, which is responsible for all operations. Each client stores a record of all committed transactions and the number of Bitcoins in each wallet. Transactions are made by hundreds of distributed servers. Neither banks or taxes, nor governments can control the exchange of money between, 3. Unlimited possibilities of transaction – each of the wallet holders can pay to anyone, anywhere and any amount. The transaction can not be controlled or prevented, anywhere in the world, 4. No boundaries. Payments made in this system are impossible to cancel. The coins cannot be faked, copied or spent twice. These capabilities guarantee the integrity of the entire system, 5. Low Bitcoin operation cost and so on... According to Ivaschenko (2016) the disadvantages are as follows: 1. Strong volatility – almost all of the ups and downs of the Bitcoin value depend directly on the declared statements of the governments of different countries. This volatility creates the problem in the short term and 2. Large risks of investing in cryptocurrency that should be considered in the medium and long term.

The big questions are which consumers' demographic factors are effecting/important to the intention to adopt cryptocurrency among millennials in Malaysia, what amount of demand will they have, the digital payments are trusted by consumers and what barriers may exist to basic monetary functions becoming predominantly electronic or digital? Based on these questions of use and demand from a consumer perspective, the focus of this study is only to investigate how are the effects of demographic factors of consumers on the intention to adopt cryptocurrency among millennials in Malaysia. According to Kamaruzaman and Zainol (2014), the Malaysian government believes that Millennials will soon dominate Malaysia's consumption demands and will be the leadership of the nation approaching the 2020 vision. In the Malaysian context, it can be observed that the exposure of Malaysian millennials towards cryptocurrency has been increasing gradually as the economy shifts towards Fintech and 4th Industrial Revolution. In contrast, the security concerns of cryptocurrency lead the millennials of Malaysia to question the credibility and delay their acceptance towards it. The usage of cryptocurrencies has grown across the world but still leaves notable research gaps in the literature. For instance, past studies by Farell (2015) and Sovbetov (2018) indicated that most research in this research area has focused on the price volatility of cryptocurrencies rather than the impact of consumers' demographic factors on the consumers' behavioural intention.

Kostika & Laopodis (2019) investigated the short- and long-run dynamic linkages between selected cryptocurrencies, several major world currencies and major equity indices. They examined the cryptocurrencies were Bitcoin, Dash, Ethereum, Monero, Stellar and XRP. Data were collected on major exchange rates with respect to the US dollar, namely, the Euro, British pound, Japanese yen and Chinese Yuan. The study applied vector autoregressive (VAR) model and dynamic conditional correlation generalized autoregressive conditional heteroskedasticity (DCC-GARCH) model. Their findings were despite sharing some common characteristics, the cryptocurrencies did not reveal any short- and long-term stochastic trends with exchange rates and/or equity returns. The dynamics of each cryptocurrency with the Chinese Yuan appeared to be more unstable than that with the other exchange rates. Moreover, each cryptocurrency showed to follow its own trend in the global financial market and was independent of the exchange rates or the global stock markets, consequently making them suitable

for inclusion in global investment portfolios. The study provides the knowledge about the short- and long-run dynamic linkages between selected cryptocurrencies and the several major world currencies.

To address this issue, the objective of the paper is to investigate how are the effects of demographic factors of consumers (gender, race, age, education, and income) on the behaviour intention to adopt cryptocurrency among millennials in Malaysia using the Unified Theory of Acceptance and Use of Technology (UTAUT) Model. A total of 304 respondents were being collected for the data analysis process. Sampling technique was tested by (Hair *et al.*, 2017) procedure and this study has adopted the non-probability sampling technique i.e. snowball and purposive sampling. The data analysis performed with the binomial logit qualitative response regression econometric model of (Gujarati & Porter, 2009) procedure.

LITERATURE REVIEW

There are a few models that can be used to study the adoption of technology and innovation. Each model has its own explicit features and strengths in explaining a phenomenon. The models that suit our study were the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology Model (UTAUT). In addition, the Theory of Reasoned Action (TRA) and the Theory of Planned Behavior (TPB) were derived from the TAM. Cognitive and affective determinants were present in the TAM, as both are determinants of behavioral intention and actual usage (Cataluña *et al.*, 2015). Moreover, it is noteworthy that many studies have found that the TAM has the ability to explain a minimum of 40% of the variance in usage intention and behavior towards a technology (Venkatesh & Davis, 2000). Ultimately, this study used the UTAUT 2 model, as shown in Figure 5.

Figure 5: Unified Theory of Acceptance and Use of Technology (UTAUT 2 Model)

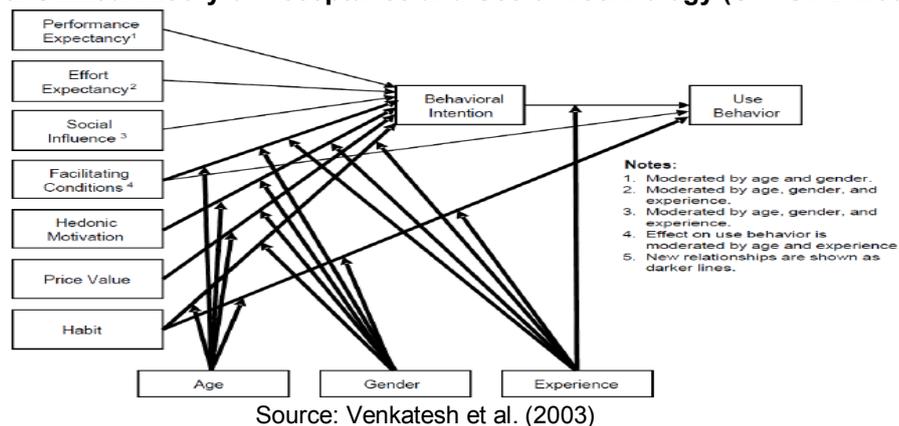


Figure 5 illustrates the UTAUT 2 Model is the Unified Theory of Acceptance and Use of Technology that is used for explanation of user perception and acceptance behavior (Venkatesh *et al.*, 2003) and Thong and Xu (2012). Performance expectancy, effort expectancy, social influence, and facilitating conditions are the four core independent variables that have a significant effect on the dependent variable, behavioral intention. The model also includes three demographic moderating variables, i.e., age, gender, and experience. Although the UTAUT 2 model has its own limitations, it is still considered among the most useful and important models because it unites eight major theories and has been validated with real world data (Im *et al.*, 2010). Based on this theory, it will be conducted this study will only apply to find out that there will be a significant relationship the five demographic moderating variables and dependent variable, behavioural intention of the cryptocurrency among millennials in Malaysia.

The main purpose of developing cryptocurrency is to ensure a more convenient and stable transaction process without depending on any financial institution. Accordingly, common cryptocurrencies in the market hold the main idea of decentralization, whereby the currency is not controlled by any central authority or financial institution, thereby eliminating the 'middle man' in the transaction process (Ertz & Boily, 2019). Unsurprisingly, Kim (2016) stated that cryptocurrency is now the latest trend in virtual currencies. The cryptocurrencies that grew after Bitcoin number in the thousands, the largest of them being Ethereum, Dash, Monero, Ripple, and Litecoin (Hileman & Rauchs, 2017).

Many empirical studies on cryptocurrency have addressed the price dynamics of the underlying instruments against other asset prices. For example, Akyildirim et al. (2020) developed a high-frequency analysis to investigate the period surrounding the establishment of two new futures contracts based on the performance of Bitcoin. The analysis showed significant pricing effects from both fraud and regulatory unease within the industry. They further confirmed that Bitcoin futures dominate price discovery relative to spot markets. Based on their results, cryptocurrency derivatives markets are robust across multiple metrics and frequencies.

Another area of study on cryptocurrency has centered on consumers' acceptance of digital currencies. Social factors such as age, gender, and educational background have been largely incorporated in testing the acceptance of cryptocurrency. Gender and age differences in technology adoption are the least anecdotally apparent to most individuals. Venkatesh and Morris (2000) studied gender as a moderator in the TAM, finding that subjective norm has no effect on men. For women, the effect appeared to be significant in the initial stages of adoption only. The researchers surmised that men are more instrumentally focused while women more process and socially motivated. Furthermore, Goswami and Dutta (2016) found that in various contexts, gender differences are more pronounced for initial adoption rather than for mechanisms of sustained usage. Besides that, research has suggested that age is an important demographic variable for the acceptance of technology (Chung et al., 2010; Wang et al., 2009). However, there are also studies that have failed to replicate this effect.

Smith and Kumar (2018) discussed that Cryptocurrencies an introduction to not so funny moneys in the Journal of Economic Surveys. They introduced the blockchain technology of cryptocurrencies, the distributed ledger technology of crypto-currencies and the mechanics of Bitcoin. The original cryptocurrency illustrated the fundamental elements of decentralized cryptocurrencies. They argued that crypto-currencies were unlikely to supplant traditional fiat currencies and anticipated an enduring role for financial intermediaries in facilitating credit. They aimed to increase public understanding of these technologies, highlight some of the risks involved in using cryptocurrencies, and discuss some of the potential implications of these technologies for consumers, financial systems, monetary policy and financial regulation. Crypto-currencies had no physical existence, but were best thought of as electronic accounting systems that kept track of people's transactions and hence remaining purchasing power. Therefore, cryptocurrencies were typically decentralised, with no central authority responsible for maintaining the ledger and no central authority responsible for maintaining the code used to implement the ledger system, unlike the ledgers maintained by commercial banks for example. As crypto-currencies were denominated in their own unit of account, they were like foreign currencies relative to traditional fiat currencies, such as US dollars and British pounds.

Rollock and Gillborn (2011) explained that the critical race theory (CRT) is a radical lens through which racial inequality in society can be deconstructed and challenged. The CRT would be of interest to those seeking an introductory overview of race and to researchers examining the issues around race, racial identity, and racism. The CRT is a body of scholarship steeped in radical activism that seeks to explore and challenge the prevalence of racial inequality in society. It was applied in this study to understand the race factor with regard to the usage of cryptocurrency in Malaysia. Malaysia has only three races: Bumiputera (Malay & other Indigenous peoples), Chinese, and Indian. This study explored the ways in which racial inequality is maintained through the operations, structures, and assumptions of cryptocurrency usage that appear normal and unremarkable.

Cheung, Roca & Su (2015) explained the phenomenon of cryptocurrency and discussed an application of the Phillips–Shi–Yu (2013) methodology on Mt. Gox Bitcoin prices. They said cryptocurrency was to be a currency that overcame the problems that beset existing currencies. The success of Bitcoin had in fact spawned the introduction of other digital currencies such as litecoin, namecoin, quackcoin, peercoin, anoncoin, zero coin, which operated on the same concept as Bitcoin, however, with minor modifications. Therefore, Bitcoin had truly indicated the coming of the age of digital or cryptocurrency. They mentioned that Bitcoin was illustrated by bubbles ready to burst any time, example of Bitcoin's biggest exchange on Mt. Gox Bitcoin prices. Cheung et al (2015) investigated also the existence of bubbles (example explosive behaviours) in the Bitcoin market based on econometric methodology developed by Phillips, Shi and Yu (2013a) on Mt. Gox Bitcoin prices. The estimation period was from 2010 to 2014. Result revealed that three huge bubbles of the period from 2011 to 2013 was the biggest fallen of the Mt. Gox exchange lasting from 66 days to 106 days, with the last one and also the biggest one occurring during the period November 2013 to February 2014. Furthermore, its Mt. Gox price rise had been accompanied by huge volatilities by

investors. Bitcoin was a commodity that had been experiencing bubbles which could therefore burst anytime. The collapse of the Mt Gox Exchange had been taken as evidence of the bursting of the bubble. This article shared the technique was designed to detect stochastic explosive behaviour of a given time series since such explosive feature was commonly shared by all bubbles. The bursting of these bubbles also seemed to coincide with certain major events that occurred in the Bitcoin market.

According to Ndubisi (2005), the level of education, computer experience, age, gender, and years in business of respondents impact the perceived ease of use of consumers. On the other hand, perceived usefulness depends on users' level of innovativeness. Kaya et al. (2011) found educational level to be a significant predictor of nurses' attitude towards a new technology. Similarly, Kipturgo et al. (2014) found that nurses' educational level has positive associations with their attitude towards information system implementation and their compatibility with acquired technology. Other than that, Huryk's (2010) comprehensive review of the literature found that computer experience is the most influential factor behind consumers' positive attitude towards a new technology.

Currency which had only a digital representation, had received a great deal of attention in mainstream media and some attention from economists and lawyers by (Selgin 2013 and Grinberg 2011). A particular currency – Bitcoin – had received most of this attention, although there were alternatives in existence such as Litecoin and proposed currencies such as Ripple. Gans and Halaburda (2013) and Dwyer (2015) explained that a digital currency must prevent users from spending their balances more than once, which was easier said than done with purely digital currencies. Current digital currencies such as Bitcoin used peer- to- peer networks and open- source software to stop double spending and create finality of transactions. This paper provides how the use of these technologies and limitation of the quantity produced can create an equilibrium in which a digital currency had a positive value. They mentioned the rise of 24/7 trading on computerized markets in Bitcoin in which there were no brokers or other agents, a remarkable innovation in financial markets. Therefore, exchanges of foreign currency may be the obvious way in which used of digital currencies can become widespread and that Bitcoin was likely to limit governments' revenue from inflation.

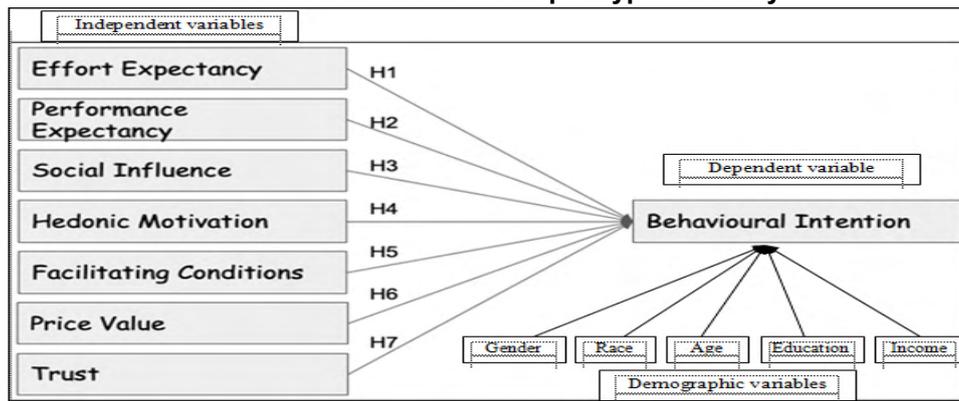
Finally, income plays an important role in the acceptance and usage of a new technology (i.e., cryptocurrency). A consumer's income will impact the quantity he/she demands of a good or service. The relationship between income and demand is a positive one, as when income increases, so does the quantity of goods and services demanded (Shao & Siponen, 2011). Yet, Akhlaq and Ahmed (2013) posited that demand is not entirely dependent on income, but rather on motivational factors such as perceived ease of use, intrinsic motivation, trust, and intention, granting a richer understanding of an individual's underlying beliefs and subsequent intention to accept new technology.

RESEARCH METHODOLOGY

Conceptual Framework

This research aimed to examine Malaysian Millennials' behavioral intention to adopt cryptocurrency by deriving the relationships between the chosen seven independent variables, five demographic variables and the dependent variable in the conceptual framework. In the main model, the seven independent variables were effort expectancy, performance expectancy, social influence, hedonic motivation, facilitating conditions, price value, and trust; the five demographic variables included gender, race, age, education, and income while the dependent variable was the behavioral intention of millennial consumers in Malaysia. Specifically, the conceptual framework used in this paper incorporated only the demographic variables in relation to Millennials' behavioral intention to adopt cryptocurrency, as shown in Figure 6.

Figure 6: Conceptual Framework of Demographic Variables and Behavioral Intention to Adopt Cryptocurrency



Source: Own Development

Hypothesis Development

Therefore, both independent and moderating variables will be conducted the following hypotheses. The moderating variables (**Hypothesis 8 to 12**) will be only tested and fulfilled the research objectives of this study:

H1o: Effort expectancy has no significant relationship with Millennials' behavioral intention to adopt cryptocurrency in Malaysia.

H1A: Effort expectancy has a significant relationship with Millennials' behavioral intention to adopt cryptocurrency in Malaysia.

H2o: Performance expectancy has no significant relationship with Millennials' behavioral intention to adopt cryptocurrency in Malaysia.

H2A: Performance expectancy has a significant relationship with Millennials' behavioral intention to adopt cryptocurrency in Malaysia.

H3o: Social influence has no significant relationship with Millennials' behavioral intention to adopt cryptocurrency in Malaysia.

H3A: Social influence has a significant relationship with Millennials' behavioral intention to adopt cryptocurrency in Malaysia.

H4o: Hedonic motivation has no significant relationship with Millennials' behavioral intention to adopt cryptocurrency in Malaysia.

H4A: Hedonic motivation has a significant relationship with Millennials' behavioral intention to adopt cryptocurrency in Malaysia.

H5o: Facilitating condition has no significant relationship with Millennials' behavioral intention to adopt cryptocurrency in Malaysia.

H5A: Facilitating conditions has a significant relationship with Millennials' behavioral intention to adopt cryptocurrency in Malaysia.

H6o: Price value has no significant relationship with Millennials' behavioral intention to adopt cryptocurrency in Malaysia.

H6A: Price value has a significant relationship with Millennials' behavioral intention to adopt cryptocurrency in Malaysia.

H7o: Trust has no significant relationship with Millennials' behavioral intention to adopt cryptocurrency in Malaysia.

H7A: Trust has a significant relationship with Millennials' behavioral intention to adopt cryptocurrency in Malaysia.

H8o: **Gender** does not significant effect with Millennials' behavioral intention to adopt cryptocurrency in Malaysia.

H8A: Gender has a significant effect with Millennials' behavioral intention to adopt cryptocurrency in Malaysia.

H9o: **Race** does not significant effect with Millennials' behavioral intention to adopt cryptocurrency in Malaysia.

H9A: Race has a significant effect with Millennials' behavioral intention to adopt cryptocurrency in Malaysia.

H10o: **Age** does not significant effect with Millennials' behavioral intention to adopt cryptocurrency in Malaysia.

H10A: Age has a significant effect with Millennials' behavioral intention to adopt cryptocurrency in Malaysia.

H11o: **Education** does not significant effect with Millennials' behavioral intention to adopt cryptocurrency in Malaysia.

H11A: Education has a significant effect with Millennials' behavioral intention to adopt cryptocurrency in Malaysia.

H12o: **Income** does not significant effect with Millennials' behavioral intention to adopt cryptocurrency in Malaysia.

H12A: Income has a significant effect with Millennials' behavioral intention to adopt cryptocurrency in Malaysia.

Binomial Logit Qualitative Response Regression Model

This research is an econometric analysis using the Binomial Logit Qualitative Response Regression Model as per Gujarati and Porter (2009). The demographic factors (categorical variables) and the dependent variable (binary variable $Y = 0$ or 1) were used. Y for probability P is simply the odds ratio $(P_i/1-P_i)$. This analysis describes the method used to transform **binomial measures** into likelihood and **probability measures** in logistic regression. It is not a cross-sectional analysis but is based on cross-sectional data. Even if assumptions are met, some researchers prefer logistic regression because it is similar to multiple regression. It has straightforward statistical tests, similar approaches to metric (dependent variable, binomial variable $Y = 0$ or 1) and non-metric variables (X_1, X_2, X_3, X_4 & X_5 demographic variables) and nonlinear effects, and a wide range of diagnostics.

The logit model is a binomial regression model, wherein the dependent variable (Y) is a binary or dichotomous variable associated with a vector of random variables to a binomial random variable (Goel, 2018). The logit function is the reciprocal function of the sigmoid logistic function (Durlauf & Blume, 2010). The logit model can add many regressors (independent variables) from underlying theory, as developed by the McFadden R^2 . The dependent variable L , called the Logit, is the log of the odds ratio, which shows the average probability value. The linear function of the regressors, where L_i should be in the range of 0 to 1, was written as in Equation (1):

$$L_i = \ln \left(\frac{P_i}{1-P_i} \right) = Z_i = \beta_0 + \beta_1 X_i + \mu_i \quad (1)$$

where the logit model assumes that L_i is the log of the odds ratio linearly related to X_i (independent variable) (Gujarati & Porter, 2009). Such models are perhaps best known in the medical and health fields where the odds ratio can be applied to studies on smoking, cardiovascular ailments, and a host of other "risk" events (Hilbe, 2017). Aside from the medical and health field, logistic models are also commonly used in research in social sciences, economics, and physical sciences. The logit model is also called the logistic distribution function (Gujarati & Porter, 2009), where the dependent variable is a probability (P) that ranges from 0 to 1 while Logit (L) goes from $-\infty$ to $+\infty$. The logit model used by this research to compute the "average probability value for behavioral intention to adopt cryptocurrency" is presented in Equation (2):

$$\text{Logit}(p) = \ln \left(\frac{P_i}{1-P_i} \right) = B_i = \beta_0 + \beta_1 \text{Gender}_i + \beta_2 \text{Race}_i + \beta_3 \text{Age}_i + \beta_4 \text{Education}_i + \beta_5 \text{Income}_i + \mu_i \quad (2)$$

where:

$\frac{P_i}{1-P_i}$ refers to the odds ratio

$\ln \left(\frac{P_i}{1-P_i} \right)$ refers to the log of odds ratio, or "logit".

- BI_i = 1 = Behavioral Intention to adopt cryptocurrency, 0 = Otherwise
 $Gender_i$ = 1 = Male, 0 = Female
 $Race_i$ = 1 = Malay, 2 = Chinese, 3 = Indian
 Age_i = 1 = 20-24, 2 = 25-29, 3 = 30-34, 4 = 35-39, 5 = > 40 years old
 $Education_i$ = 1 = SPM/O Levels, 2 = STPM/A Levels, 3 = Diploma & Bachelor, 4 = Postgraduate
 $Income_i$ = 1 = Less than MYR 2,000, 2 = MYR 2,000 – MYR 5,000, 3 = MYR 5,000-MYR 10,000, 4 = More than MYR 10,000
 β_0 = Intercept for the model
 β_1 to β_5 = The coefficients that explain the strength of the independent variables
 μ_i = The error term of the model
 i = Cross-sectional data based on 304 consumers

We will calculate the **actual probability value** of behavioral intention to adopt cryptocurrency in Equation (3):

$$\text{Actual Probability \% (Pi \%)} = \ln \left(\frac{Pi}{1 - Pi} \times 100 \right) \quad (3)$$

where: Pi = the various coefficients/slope values of the Logit Model Equation and \ln = natural logarithm.

Sampling and Data Collection

The target population of a study refers to the population being observed. In this case, the target population was Malaysian Millennials (born 1981-1996) and also other age groups (see in Table 1) in the Klang Valley who were aged 20 years old and above and they were aware of cryptocurrencies. Following a pilot study of the survey instrument with 30 respondents, primary data was collected from a total of 304 respondents, excluding those with missing data. The data collection method involved distributing questionnaires online through Google forms. Non-probability sampling techniques (snowball and purposive sampling) were used in this study to draw the sample using the researchers' judgment (Hair *et al.*, 2017). The data analysis tool used was the EViews version 12 computer program.

DATA ANALYSIS

Frequency and Descriptive Analysis

Table 1 show the demographic profile of the individuals who responded to the questionnaire. A total of 174 males (57.2%) and 130 females (42.8%) participated in the study. Furthermore, 144 Chinese, 83 Malays, and 77 Indians responded to the questionnaire, with percentages of 47.4, 27.3, and 25.3, respectively. Table 1 also shows that the largest proportion of respondents were from the 20 to 24 age group (61.5%), 25 to 29 age group (17.8%), 30 to 34 age group (8.6%), 35 to 39 age group (6.6%), followed by the above 40 age group (5.9%). The largest group was those with Diploma & Bachelor (80.6%), SPM/O Levels (12.5%), and Postgraduate (5.3%), followed by the STPM/A Levels (1.6%).

Table 1: Frequency Analysis of Consumers' Demographic Profile

Gender	Frequency	Percent
Male	174	57.2
Female	130	42.8
Total	304	100.0
Race	Frequency	Percent
Indian	77	25.3
Malay	83	27.3
Chinese	144	47.4
Total	304	100.0
Age	Frequency	Percent
20-24	186	61.1

25-29	54	17.8
30-34	26	8.6
35-39	20	6.6
> 40	18	5.9
Total	304	100.0
Education	Frequency	Percent
SPM/O Levels	38	12.5
STPM/A Levels	5	1.6
Diploma & Bachelor	245	80.6
Postgraduate	16	5.3
Total	304	100.0
Income	Frequency	Percent
Less than RM2,000	215	70.7
Between RM2,000 and RM5,000	79	26.0
Between RM5,000 and RM10,000	5	1.6
More than RM10,000	5	1.6
Total	304	100.0

Source: Own Data Analysis

The two groups with the least frequency were those with Postgraduate and STPM/A-Level qualifications. A majority of the respondents were earning a monthly income of less than RM2,000, possibly because the questionnaire was predominantly circulated among university students, who fall in the low-income group.

Table 2: Descriptive Analysis of Consumers' Demographic Profile

Descriptive	BI	GENDER	RACE	AGE	EDUCATION	INCOME
Mean	0.3191	0.5724	1.7796	2.1283	4.7862	1.3421
Median	0.0000	1.0000	2.0000	2.0000	5.0000	1.0000
Maximum	1.0000	1.0000	3.0000	4.0000	6.0000	4.0000
Minimum	0.0000	0.0000	1.0000	1.0000	3.0000	1.0000
Std.dev.	0.4669	0.4956	0.7267	0.7267	0.7246	0.5982
Total	304	304	304	304	304	304

Source: Own Data Analysis

The descriptive statistics of gender, race, age, education, income, and behavioral intention are presented in Table 2. The mean of behavioral intention for the 304 respondents was 0.3191 with a standard deviation of 0.4669. The mean of gender was 0.5724 with a standard deviation of 0.4956. The mean of race was 1.7796 with a standard deviation of 0.7267. The mean of age was 2.1283 with a standard deviation of 0.7267. The mean of education was 4.7862 with a standard deviation of 0.7246. Finally, the mean of income was 1.3421 with a standard deviation of 0.5982.

Correlation Analysis

Table 3: Correlation Analysis of Consumers' Demographic Profile

Variables	BI	GENDER	RACE	AGE	EDUCATION	INCOME
BI	1.0000	0.0782	0.0718	0.6474	0.3486	0.8132
GENDER	0.0782	1.0000	0.0133	0.0488	0.2647	0.1277
RACE	0.0718	0.0133	1.0000	0.1354	0.2171	0.0062
AGE	0.6474	0.0488	0.1354	1.0000	0.3343	0.5061
EDUCATION	0.3486	0.2647	0.2171	0.3343	1.0000	0.2150
INCOME	0.8132	0.1277	0.0062	0.5061	0.2150	1.0000

Source: Own Data Analysis

The correlation among the variables is shown in Table 3. The strength of the independent variables' correlations with behavioral intention was rearranged as INCOME > AGE > EDU > GENDER > RACE, in order from the strongest to the weakest. Gender and race had an almost negligible relationship with behavioral intention ($r = 0.08$ and 0.07 , respectively). Education had a low correlation (r

= 0.35) while age had a moderate correlation ($r = 0.65$). Lastly, income had a high correlation with intention ($r = 0.81$).

Binomial (Binary) Logit Qualitative Response Regression Model

$$BI_i = -6.5705 + 0.1302GENDER_i + 0.0686RACE_i + 0.3425AGE_i + 0.8898EDU_i + 0.8234INCOME_i + 0.6853e_i \quad (4)$$

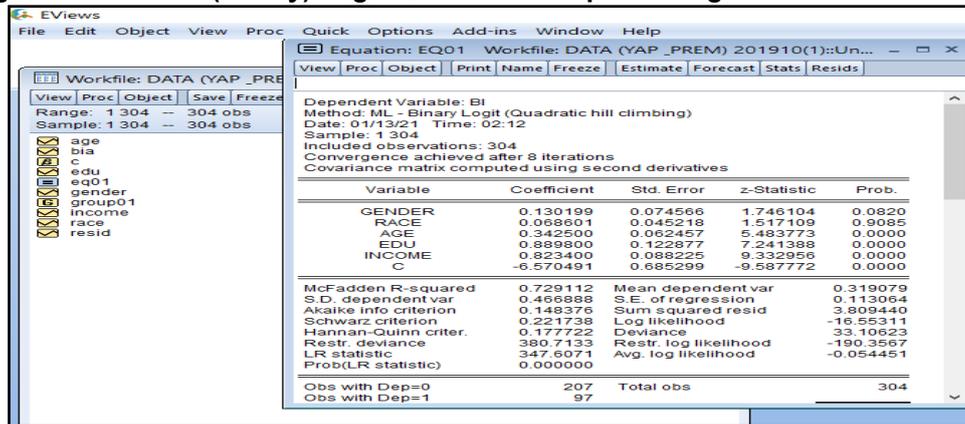
[1.7461*]
[1.5171^{ns}]
[5.4838***]
[7.2414***]
[9.3330***]

McFadden $R^2 = 0.7291$; $-2LL = -16.55311$; Average LL = -0.05445

Note: ns = not significant at any α level, * Statistically significant at $\alpha = 0.10$, ** Statistically significant at $\alpha = 0.05$, *** Statistically significant at $\alpha = 0.01$.

Based on the Binomial (Binary) Logit Quantitative Response Regression Model in Figure 7 and Equation (4), the explanatory variables accounted for about 72.91% of the variation in behavioral intention to adopt cryptocurrency. The estimations revealed that gender, age, education, and income were important explanatory variables with statistical significance at the $\alpha = 0.10$ and 0.01 levels. Specifically, education was the most important variable of the model, followed by income level. Moreover, when the $-2LL$ value and average LL value are low, the McFadden R^2 value is high (LL = Log-likelihood). Therefore, the model had good fit (Hair *et al.*, 2017).

Figure 7: Binomial (Binary) Logit Qualitative Response Regression Model Analysis



Source: Own Development

The slope value of $GENDER_i = 0.1302$ means that for a change in gender (male or female), the average probability of behavioral intention to adopt cryptocurrency (BI_i) increases by 0.1302 units or about 13.02 percent. Therefore, the average probability value of BI_i for gender was 13.02 percent with statistical significance at the $\alpha = 0.10$ level.

The slope value of $AGE_i = 0.3425$ means that for a year's change in age, the average probability of behavioral intention to adopt cryptocurrency (BI_i) increases by 0.3425 units or about 34.25 percent. Therefore, the average probability value of BI_i for age was 34.25 percent with statistical significance at the $\alpha = 0.01$ level.

The slope value of $EDU_i = 0.8898$ means that for a level change in education, the average probability of behavioral intention to adopt cryptocurrency (BI_i) increases by 0.8898 units or about 88.98 percent. Therefore, the average probability value of BI_i for education is 88.98 percent with statistical significance at the $\alpha = 0.01$ level.

The slope value of $INCOME_i = 0.8234$ means that if the consumer's income changes by RM1000, the average probability of behavioral intention to adopt cryptocurrency (BI_i) increases by 0.8234 units or about 82.34 percent. Therefore, the average probability value of BI_i for income is 82.34 percent with statistical significance at the $\alpha = 0.01$ level.

Using Equation (3), the actual probability values of behavioral intention to adopt cryptocurrency were calculated as below:

$$\text{Actual Probability \% (Pi \%)} = \ln \left(\frac{\text{Pi}}{1 - \text{Pi}} \times 100 \right) \quad (3)$$

where: **Pi** = the various coefficients/slope values of the Logit Model Equation and **ln** = natural logarithm.

For GENDER,

$$\text{Actual Probability \% (Pi \%)} = \ln \left(\frac{0.1302}{1 - 0.1302} \times 100 \right) = 27.06\%$$

For AGE,

$$\text{Actual Probability \% (Pi \%)} = \ln \left(\frac{0.3425}{1 - 0.3425} \times 100 \right) = 39.53\%$$

For EDUCATION,

$$\text{Actual Probability \% (Pi \%)} = \ln \left(\frac{0.8898}{1 - 0.8898} \times 100 \right) = 66.94\%$$

For INCOME,

$$\text{Actual Probability \% (Pi \%)} = \ln \left(\frac{0.8234}{1 - 0.8234} \times 100 \right) = 61.45\%$$

In summary, a change in gender (male or female) increases the actual probability of behavioral intention to adopt cryptocurrency (BI_i) by 27.06 percent compared to the average probability of 13.02 percent. Next, a year's change in age increases the actual probability of behavioral intention to adopt cryptocurrency (BI_i) by 39.53 percent compared to the average probability of 34.25 percent. For education, a level change increases the actual probability of behavioral intention to adopt cryptocurrency (BI_i) by 66.94 percent compared to the average probability of 88.98 percent. Finally, if consumers' income changes by RM1000, the actual probability of behavioral intention to adopt cryptocurrency (BI_i) increases by 61.45 percent compared to the average probability of 82.34 percent.

Hypothesis Testing

Table 4: Hypothesis Testing of Consumers' Demographic Profile

Hypotheses	Significant	Conclusion
H8A: Gender has a significant effect with Millennials' behavioral intention to adopt cryptocurrency in Malaysia.	$P = 0.0808 < 0.10$	Supported
H9A: Race has a significant effect with Millennials' behavioral intention to adopt cryptocurrency in Malaysia.	$P = 0.1292 > 0.05$	Rejected
H10A: Age has a significant effect with Millennials' behavioral intention to adopt cryptocurrency in Malaysia.	$P = 0.00 < 0.01$	Supported
H11A: Education has a significant effect with Millennials' behavioral intention to adopt cryptocurrency in Malaysia.	$P = 0.00 < 0.01$	Supported
H12A: Income has a significant effect with Millennials' behavioral intention to adopt cryptocurrency in Malaysia.	$P = 0.00 < 0.01$	Supported

Source: Own Data Analysis

Based on the Table 4, H8A, H10A, H11A & H12A have a significant effect and H9A has not a significant effect in the model. Therefore, based on the results, education is the most important variable, followed by income, age, and gender, with regards to young Malaysians' behavioral intention to adopt cryptocurrency; race, however, showed no effect on intention. The major contribution of this research is that it offers evidence on the significant relationship between demographic variables (gender, age, education and income) except race and behavioral intention to adopt cryptocurrency among Malaysian millennials, with the support of the binomial logit qualitative response regression model, frequency and descriptive analysis, correlation analysis, and hypothesis testing outcomes.

Residual Diagnosis

Table 5 shows the residual diagnosis of the heteroscedasticity test, the serial correlation (LM) test, and the multicollinearity test (Studenmund, 2017). The results show that the alternative hypotheses H_A were rejected and H_0 were accepted. Therefore, the model residuals for behavioral intention to adopt cryptocurrency had no heteroscedasticity, serial correlation, or multicollinearity in the residual diagnosis tests.

Table 5: Summary of Residual Diagnosis

Summary of Residual Diagnosis			
Diagnostic Tests	Results	Hypothesis	Decisions
Heteroscedasticity Test (ARCH)	F-statistic: 1.9544 Prob. F(1,301): 0.1632	H_0 : Error Terms are not heteroscedastic H_A : Error Terms are heteroscedastic	P-Value > 0.05 Do not reject H_0.
Serial Correlation Test (LM)	F-statistic: 2.7136 Prob. F(2,297): 0.1006	H_0 : Error Terms have no serial correlation. H_A : Error Terms have no serial correlation.	P-Value > 0.05 Do not reject H_0.
Multicollinearity Test (VIF) Variance Inflation Factor $VIF = \frac{1}{1 - R^2}$	 $\frac{1}{1 - 0.729060}$	H_0 : Error Terms have no multicollinearity. H_A : Error Terms have no multicollinearity	$1 < VIF < 5$ Do not reject H_0. VIF = 3.7

Source: Own Data Analysis

CONCLUSION AND DISCUSSION

The outcomes demonstrate that the millennials' gender, age, education, and income play an important role in their intention to adopt cryptocurrency, while their race does not. **Education** revealed the strongest influence, followed by income, age, and gender and these results are consistent with the findings of Boroumandfar, Momenzadeh, Tavakkol, Kelishadi, & Rad, (2010). Based on this study's findings, the **income** variable is highly correlated with behavioral intention to adopt cryptocurrency. Previous studies (Jin et al., 2019, 2020) have found that the higher the income group, the higher the willingness to adopt the finance technology of mobile wallet usage. While the higher the **age** group, the lower the willingness to adopt the technology. Our findings on income and age are consistent with these earlier studies, including a local study that analyzed the income factor in relation to customers' behavioral intention (Hashim, Haque, & Hasim, 2015).

Indeed, income level is known to have a strong influence on consumer decision making (Shin, 2009). Rogers (2003) stated that earlier adopters of technological innovations typically have higher incomes, while lower-income users do not perceive the internet as useful to them (Porter & Donthu, 2006). Smith (2013) stated that income level influences internet assessment, text messaging usage, and app downloads in the United States. Income level is among the most significant factors of online shopping as well (Naseri & Elliott, 2011). When the monthly income of a consumer is higher, his/her internet banking usage is also higher (Nayanajith & Damunupola, 2019). Mengistu, Simane, Eshete, & Workneh (2016) examined the factors influencing households' decisions on bio-gas technology adoption in Africa using logistic regression and discriminant analysis. In line with our findings, their results showed that income level has a significant effect on the adoption of technology. Moreover, Chung et al. (2010) corroborated that **age** has direct and moderating effects on behavioral intention, adoption, and the acceptance of technology, consistent with this study's finding. Next, research by Zhang et al. (2014) on **gender** differences in m-health adoption revealed that gender has a significant relationship with behavioral intention to adopt new technology.

From this, efforts to advance the exposure of Malaysians to financial technologies could be made by the government. This can be done by introducing a local cryptocurrency, which was previously suggested by the Malaysian government as the Harapan Coin. A local cryptocurrency backed by the government would enhance the currency's credibility and encourage more Malaysians to start adopting it. This study provides sufficient evidence to conclude that Millennial consumers' education level is the most important variable in their cryptocurrency adoption intention, followed by income level, age, and gender. Lastly, future research on behavioral intention can be conducted in the different states of Malaysia to develop a better view of technology acceptance across rural and urban areas. Furthermore, the study will contribute to the existing literature, especially on the demographic factors influencing the adoption of cryptocurrency.

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BAFE062: DETERMINANTS OF HAPPINESS IN MALAYSIA

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Abstract

The primary purpose of this paper is to analyse the determinants of happiness in Malaysia and evaluate which of the determinants play a more significant role in affecting Malaysian happiness. Other than that, the findings of regression analysis from this research would also enable policymakers to formulate appropriate policies to enhance the well-being of Malaysians. This study is conducted by using the multiple regression model with dummy variables due to the nominal nature of some of the variables. The data is adopted from Wave 7th of World Value Survey with 1312 Malaysian respondents. Happiness is treated as the dependent variable, while the health status, satisfaction of the financial situation, nationality pride, income level, freedom of choice and control, confidence in government, gender, age, marital status, education level, employment status, and religiosity are treated as the explanatory variables. Based on the findings, the demographic variables (gender, age, income level, and marital status) are statistically insignificant in influencing overall happiness among Malaysians. However, the findings show that health status is the most important variable in increasing happiness among Malaysian, followed by nationality pride, confidence in government, satisfaction on household financial situation, and lastly, freedom of choice and control. Among the negative variables, unemployment played the most impactful factor in decreasing Malaysian happiness, followed by educational level. Unemployment causes financial difficulties and contributes to negative emotions such as stress, anxiety, and loss of self-esteem. Furthermore, religiosity also has a negative but showed a relatively weaker impact on happiness.

Keywords: Happiness, Determinants, Malaysia

INTRODUCTION

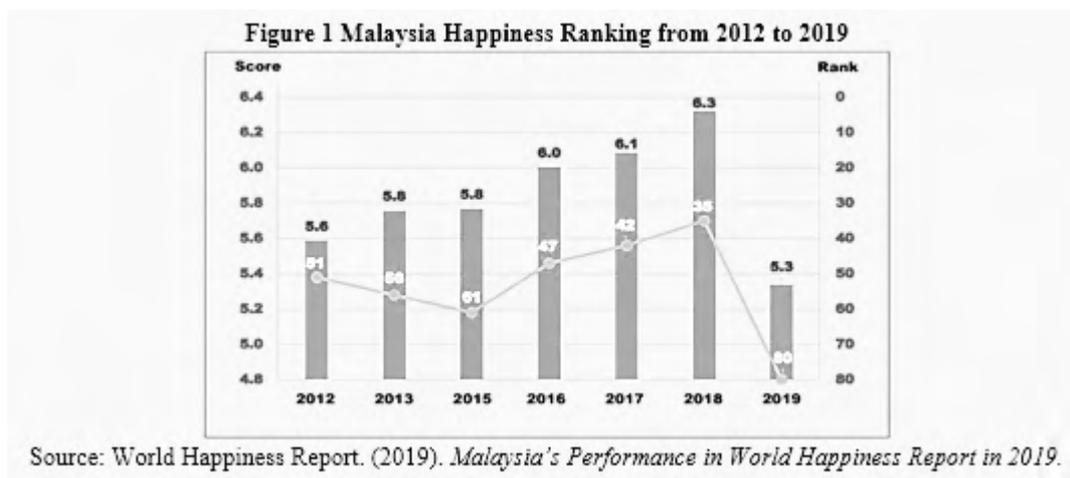
For years, the aim of economic studies has been known as the allocation of limited resources to satisfy unlimited needs (Colander, 2010). The efficient, least-cost allocation of scarce resources and optimal economic growth were the primary concerns in traditional economics (Har, Tan & Lim, 2008). A nation's wealth was determined mainly by materialistic values and monetary factors, such as aggregate output and aggregate income. However, economists started to consider happiness as part of economic development throughout the years because of the standard economic performance measures such as gross domestic product (GDP) and gross national product (GNP) are incapable of measuring society welfare. Hence, researches on happiness are becoming more popular among economists. Although the search for happiness is as old as human history, the discussion of its definition, determinants, and measurements has yet to come to an end (Aydin, 2012).

According to the Oxford dictionary, "happiness" is a noun defined as a state of positive emotion of being satisfied at something good or right. Logically, when one's need is met, one's satisfaction is obtained. Consequently, the goal of economics is indirectly improving the quality of life by attaining satisfaction. The Council of Social Work Education (CSWE) refers to economic well-being as the ability to make desirable economic choices and a sense of satisfaction and personal fulfilment. According to Veenhoven (2017), the difference between happiness and life satisfaction can be explained as the former being "what one feels at the time being" while the latter being "the degree to which one expected to achieve what one wants from life." The terms such as satisfaction, subjective well-being, and happiness tend to be used interchangeably in many studies (Johns & Ormerod, 2008). However, this study will be focusing on happiness.

One of the main challenges that most researchers faced is how to measure happiness. Many are still arguing about the accuracy of the measurement of happiness since it is subjective and it depends on one's state of emotion and one's distinct perspective on happiness. Even though so, many happiness measurements are available for academic research, such as the World Happiness Index, Green and Happiness Index, Your Better Life Index, etc. In the case of overall happiness, the most common measure is through self-reports, typically involving single and direct questions that require individuals to evaluate their level of happiness based on a pre-given scale (Veenhoven, 2017). In this study, the happiness level will be adopted from the World Value Survey (WVS), where the respondents rated their overall happiness on a scale.

In the review of the world's approach to improve happiness, world organizations such as United Nations (UN) have been working on global development goals for decades. For instance, the Sustainable Development Goals (SDGs) consist of 17 goals aimed at balancing economic growth, social inclusion, and environmental protection (UN, n.d.). In relation to this thesis, the third goal of SDGs, "Good Health and Well-being," specifically aimed to improve well-being and healthy life for all ages. It reflects the importance of improving and enhancing social well-being to ensure the sustainability of world development.

In this study, Malaysia will be the targeted population to study the determinants of happiness. Malaysia is a developing country well-known for its diversity of culture among its multiracial society, consisting of the three major races, the Malays, Chinese and Indonesian. The variety in race indicates diversity in religion as well. Malaysia practices freedom in religion with Islam as the main religion of Malaysia while other religions like Buddhist and Christian can be practice in peace. In the matter of healthcare system, the Malaysian government managed to provide low cost and overall satisfactory public healthcare services with universities and non-governmental organizations as the leading services provider. Besides, private medical and traditional medicine practitioners are available to match individual preferences (World Health Organization [WHO], n.d.). As for the national education system, the national school and national type schools are available from primary to tertiary levels (Ministry of Education Malaysia [MOE], 2019). The World Bank Group (2020) suggested that Malaysia should further enhance human capital formation, specifically in education, health, nutrition, and social welfare protection. In 2020, the labour participation rate was 68.9 %, while the unemployment rate is 3.9% (Department of Statistics Malaysia [DOSM], 2020). Furthermore, in 2019, the number of marriages had decreased by 1.2%, while the divorce rate had increased by 12% (DOSM, 2020). Lastly, Malaysia's happiness scores have improved since 2012, from 5.6 to 6.3 in 2018 (World Happiness Report [WHR], 2020). Figure 1 presents the Malaysian happiness ranking from WHR since the year 2012.



As presented above in Figure 1, the World Happiness Report (WHR) findings from 2012 to 2018 in Malaysia had shown improvements in happiness levels throughout the years. However, compared to previous years, Malaysia had experienced an enormous drop in the happiness ranking from 35th in 2018 to 80th in 2019. Such a shocking result is one of the main reasons that spikes this thesis's interest in investigating the determinants of happiness among Malaysians. In this study, we adopt the latest survey result of WVS Wave 7th to find out the potential determinants of happiness and whether Malaysian's perspective on happiness is in line with the theories of the previous study.

The components of happiness cover many research fields such as economics, social science, psychology, and political science, where each domain has its complexity. This thesis focuses on the health status, income level, satisfaction on household financial situation, confidence in government, freedom of choice and control, nationality pride, education level, marital status, employment status, age, gender, and religiosity. The relationships between these factors and happiness reflect many aspects of people's living styles. The main purpose of this paper is to analyse the determinants of happiness in Malaysia and evaluate which of the determinants play a more significant role in affecting Malaysian happiness. Other than that, the findings of regression analysis from this research would also enable policymakers to formulate appropriate policies to enhance the well-being of Malaysians.

The aim of happiness research is not to replace the existing monetary measures of welfare, and it solely intends to complement the limitations of the current standard measurements (Graham, 2005). According to most of the happiness research is used to study the effects of behaviour on subjective well-being by investigating inflation, unemployment, and income (Frey and Stutzer, 2001), other happiness studies can be stretched further to help economists gain a better insight into the open issues at the individual level, such as consumption, investment, political behaviour, gender inequality, the indicators of quality of life, and growth analysis. Many policymakers are starting to take measures to enhance individual-level happiness. Hence, this study can fill the gap of happiness research in Malaysia. Other than that, the policymakers can make use of the findings of regression analysis from this research to identify the significant indicators of happiness among Malaysians to formulate appropriate policies.

LITERATURE REVIEW

Happiness

Happiness economics is the study of well-being, quality of life, life satisfaction, and related concepts, typically combining economics with other fields such as psychology and sociology (Graham, 2005). Humans were the architect and creators of their own life. Individuals tend to allocate excessive time to earn money and overpass nonmonetary domains such as health and family life, causing unhappiness (Yiap & Geetha, 2017). According to Hsieh and Hsing (2002), economic growth often brought mixed outcomes in social developments, such as improved education, political freedom, and better healthcare but more income inequality, economic crimes, and divorces. Hence, people are not necessarily better off with economic growth. Blachflower et al. (2010) reported that happy countries are often rich, educated, democratic, trusting, and have low unemployment. However, Das et al. (2020) reviewed the perspective of subjective well-being. They reported that the standards might differ across individuals regarding life experience, comparisons, cultural influences, and personal orientation.

The overall happiness as "how one likes the life one lives" then further elaborated the components of happiness with the hedonic level of affect and the contentment (Veenhoven, 2017). The hedonic level of affect refers to the balance of pleasant experiences and unpleasant experiences in terms of feelings, emotions, and moods. The contentment reflects how well the individual perceives their expectation and aspiration being met. Veenhoven (2006) divided the happiness theory into three different ways: Set-point theory, Comparison theory, and Affective theory. Set-point theory indicates stable attitudes towards the degree in happiness while the Comparison theory judges happiness by comparing current life with the standards of life. Lastly, the Affective theory interprets happiness from current affective experience and reflects the individuals' mood state. Veenhoven (2006) highlighted that the three theories are not mutually exclusive and solely contribute to the different aspects of how people evaluate happiness.

In the previous studies, many had adopted the World Value Survey data for similar research regarding the indicators of happiness while obtaining significant findings (Boo, Yen & Lim, 2016; Lim, Shaw, Liao & Duan, 2020, Sarracino, 2013). In this research, happiness is treated as the dependent variable, while the potential explanatory variables are health status, satisfaction on the household financial situation, gender, age, marital status, employment status, education level, income level, religiosity, confidence in government, freedom of choice and control, and nationality pride. The specific relationships and significance of each variable from past studies were discussed in the following sections.

Health Status

The absence of illness and disease are generally the common characteristic of a healthy life. Naturally, most of us will assume that a healthier person would be generally happier than those suffering from sickness. Hence, health status is also one of the factors that contribute to happiness, although it is quite difficult to measure, it encloses a wide variety of dimensions. In fact, many studies had agreed on the positive associations between health and happiness. According to Pedersen and Schmid (2011), the impact of self-accessed health is strong in many countries and can be expected to improve along with satisfaction. Mahadea (2012) reported that health has a significant relationship with happiness based on the findings in Sabah, Malaysia, and urges policymakers to impose policies that ensure healthcare availability. Boo, Yen, and Lim (2016) also identified a positive and significant relationship between happiness and health status, using Wave 6th of World Value Survey data in Malaysia.

Income Level

In happiness researches, income level is one of the most popular factors to be included in the model of happiness. The classic theory of the Easterlin paradox (1974) suggested that there is a positive relationship between income and happiness at a given time. However, in the long run, after reaching a certain level of happiness, an increase in a country's income does not necessarily lead to a corresponding increase in human reported happiness. Boo, Yen, and Lim (2016) partially supported the easterly paradox theory where income and happiness have positive associations only in the short term, based on their findings in the case of Malaysia. Mahadea (2012) reported a positive relationship between income level and happiness but only accounts for small contributions to happiness. Das et al. (2020) debated that higher income does not necessarily lead to higher subjective well-being but can effectively reduce negative emotions, such as worry. Other than that, the effects of monetary variables are arguable in terms of effective period. When one's needs are met, the influence of income level on happiness tends to reduce over time (Das et al., 2020).

Satisfaction on Financial Situation

According to OECD (2011), income and wealth are mandatory determinants of one's well-being in meeting basic needs such as foods and shelters to maintain or improve whatever is considered important in one's life. In most cases, higher income and wealth indicate better quality of life, thus greater happiness. The financial situation refers to the monetary assets that one owns. The characteristic of a decent financial situation normally includes a stable and diverse source of income, along with sufficient savings for emergencies. Generally, higher satisfaction on household financial situation indicates higher satisfaction on needs and wants such as food and shelters. Many previous studies reported the financial situation's satisfaction to have a strong and positive relationship with happiness. Boo et al. (2016) and, Yip and Geetha (2017) agreed that the financial situation significantly contributes to happiness among Malaysians. Hashim and Zaharim (2020) also reported that household income significantly influences adolescents' happiness, in the case of Malaysia.

Employment Status

Employment status is the status of a person in the labor force, which is often recognised as one of the determinants of happiness, not only in generating income and wealth but also in achieving ambitions and personal fulfilment (OECD, 2011). However, not everyone who does not have a job is unemployed—only those who are actively seeking employment could not be referred to as unemployed. The stay-at-home parent, students, and those unable to work are not included in the labor force. According to Boo, Yen, and Lim (2016), the unemployment rate seems to be one of the main factors that cause a huge drop in happiness in Malaysia. Their findings show that the employed or economically inactive tend to have a higher level of happiness as compared to the unemployed. Hence, employment status has positive and statistically significant impacts on happiness. However, the happiness of the employees can be affected by employers. In most cases, employees tend to be happier and healthier when workplace safety and benefits are decent and satisfactory (Mahadea, 2012). Unemployment causes financial difficulties, decreases subjective well-being, and contributes to negative emotions such as stress, anxiety, unhealthy lifestyles, and loss of self-esteem (Das et al., 2020). However, Kalyuzhnova and Kambhampati (2008) reported that unemployment might be less

sensitive in affecting unhappiness in countries with high unemployment rates like Kazakhstan due to low standards and expectations on employment status.

Education Level

Moreover, education indicates gaining pieces of knowledge needed for a happier life, such as greater opportunities for employment, a more desirable financial situation, and a healthier lifestyle (OECD, 2011). Mahadea (2012) claimed that education could significantly affect the quality of life as individuals gain skills and bits of knowledge from education leads to employment opportunities and, eventually, a better financial situation. People with higher education are generally more productive and earn a higher income than those with less education. In other words, the more educated the people are, the higher their self-reported happiness level (Blanchflower & Oswald, 2010). However, Salinas-Jimenez et al. (2014) reported that people tend to suffer a psychological cost when education mismatch with job aspirations. According to Boo, Yen, and Lim (2017), their findings indicate that those with secondary education or below are happier but not necessarily more satisfied with life than those with tertiary education.

Age

In many research studies, age is often included in the happiness equation (Blanchflower & Oswald, 2008; Frey & Stutzer, 2001). Researchers collected respondents and conducted linear regression to determine the influence of age on happiness. However, the findings are quite inconsistent. For instance, younger people often report relatively lower life satisfaction indicating lower well-being and happiness. Furthermore, in the elderly stage, subjective well-being can be affected by physical health, retirement, social connection (Das et al., 2020). Younger people tend to be less conservative and are more likely to contact debt, consequently affecting their happiness (Mahadea, 2012). Not only that, aging could be at a different stage of life; people might respond differently in terms of well-being and satisfaction. Frey and Stutzer (2001) also highlighted the possibility of people at various ages reacting differently towards self-rated well-being surveys. In fact, the middle age group tends to have the lowest level of happiness compared with other age groups reportedly. Blanchflower and Oswald (2008) supported the theory by showing that the U-shape relationship with the middle age group (30-50 years old) is the least happy age group among Americans and Europeans. The reason could be that individuals faced higher stress and anxiety in middle age, struggling to learn and adapt to their strengths and weaknesses. However, in Malaysia, age is insignificantly influencing happiness (Hashim & Zaharim, 2020; Boo, Yen & Lim, 2016).

Gender

Gender refers to one's biological sex, which is either male or female. Plagnol and Easterlin (2008) claimed that the happiness level of different genders tends to shift around over time as their findings show that women are more likely to be happier in the early adult stages while the happiness level of men rises in the later adult life. Females are more likely to fulfil the material goods and family life satisfaction while men are more likely in later life. Boo, Yen and Lim (2016) also stated that females are reportedly happier compared to males. Mookerjee and Beron (2005) claimed that women's participation in politics has a positive impact on happiness level. However, Hashim and Zaharim (2020) reported that gender is found to be insignificant in determining adolescent's happiness in Malaysia.

Marital Status

Marital status is commonly measured in, namely, being married, divorced, separated, widowed, and single. Mixed results were often shown when studying the relationship between marital status and happiness. Boo, Yen, and Lim (2016) reported marital status has a positive but statistically insignificant influence on happiness. Individuals who are singles are reportedly less happy than married, divorced, separated, or widowed. Powdthavee (2007) found similar trends in South Africa that married couples tend to live happier lives than those who never married. Furthermore, based on the findings of Mahadea (2012), the married couples are reportedly the happiest among all groups, followed by single people, divorced couples, and lastly widowed people. Married couples can achieve a higher level of happiness through companionship, financial and emotional security.

Confidence in Government

Other than that, the measure of trust in government in terms of policy, performance, and perceptions of corruption can contribute to happiness as well (WHR, 2019). The confidence in government is normally driven by the government's value and competence. Generally, governments with high integrity, openness, fairness, and greater accountability in delivering public services such as healthcare and education are more likely to gain public trust (OECD, 2019). According to Ott (2011), the good quality of government enhances happiness and decreases happiness inequality. Other than that, the size of the government has a positive influence on happiness only if the government's quality is good. Large size but low-quality government decreases overall happiness while increase inequality happiness.

Freedom of Choice and Control

The good quality of governance plays an important role in determining the better quality of life as well as the higher freedom of choice that allows people to have more control over their lives (OECD, 2011). In general, freedom often refers to one's freedom to choose and one's freedom to control. In theory, having more freedom indicates that people have more opportunities to choose what they desire, naturally leading to happiness. Freedom of choice and control is one of the strategies being used by politicians, given that most people believe that freedom can improve the quality of life. Rahman and Veenhoven (2018) suggested that there could be a limit for freedom, indicating too much freedom could lead to unhappiness. Based on their findings, freedom and happiness are positively correlated, and there were no signs of a decrease in happiness even in countries with the highest degree of freedom. However, the overall effects of freedom on happiness are stronger in developing nations than in wealthy nations (Rahman & Veenhoven, 2018). According to Verme (2009), although studies show that freedom and happiness have a positive relationship. Sarracino (2013) also claimed that freedom of choice and control are significant correlates of subjective well-being, especially in high-income countries. However, the valuation of freedom would be affected by one's perspective on the locus of control. People who rely more on internal factors such as efforts and skills are more likely to appreciate freedom than those who believe in external factors such as fate and destiny (Verme, 2009).

Religiosity

Religious people tend to avoid harmful activities such as alcohol consumption, hence lesser health risks (Mahadea, 2012). Consequently, religious people are said to be healthier as compared to those who are not religious. According to Popova (2014), religiosity positively impacts happiness during challenging times like economic reforms. Aghili and Kumar (2008) supported that a higher religious attitude positively influences happiness among Iranian and Indian professional employees. On the other hand, Mookerjee and Beron (2005) claimed that the impacts of religion on happiness are significant but not necessarily positive. Happiness level decreases in countries with a higher level of diversity in religion, while greater homogeneity in beliefs indicates a higher happiness level (Mookerjee & Beron, 2005). Tekke and Ozer (2019) suggested that religiosity could be included as one factor that manipulates one's perspective on happiness, given that superstitious beliefs result in fear of happiness.

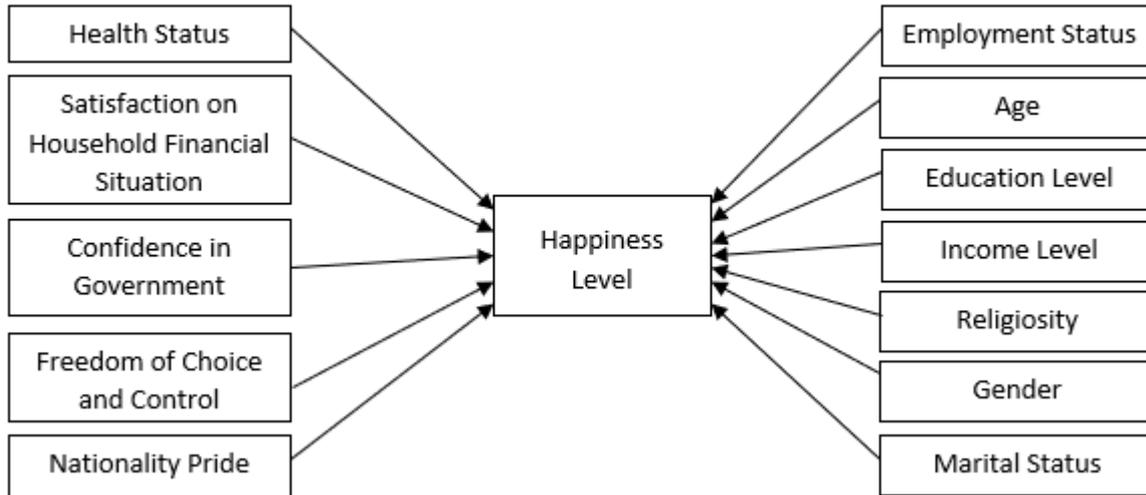
Nationality Pride

Smith and Jarkko (1998) defined nationality pride as the positive feelings towards their national identity in a world divided by nations. It is mainly driven by the sense of pride and esteems based on their national identity. The greater nationality pride often indicates higher patriotism, the public's love towards their country, and nationalism, the national devotion that one's country is better than the others (Smith & Jarkko, 1998). When individuals have a stronger bond to the culture and surroundings, national satisfaction strongly predicts life satisfaction (Morrison, Tay & Diener, 2011). In the increasing popularity of happiness research, nationality pride is rarely considered the variable affecting one's happiness (Ha & Jang, 2015). Reeskens and Wright (2011) reported that nationality pride is positively associated with subjective well-being in Europe, proving that effective attachment to a social identity would positively affect overall subjective well-being. In the case of South Korea, Ha and Jang (2015) claimed a positive relationship between nationality pride and happiness, consistent with Morrison et al. (2011).

CONCEPTUAL FRAMEWORK

As mentioned earlier, one of the objectives of this paper is to identify the relationships between Malaysian happiness levels and the explanatory variables. Figure 2 presents the proposed conceptual framework of this study, consisting of the potential significant indicators of happiness among Malaysians.

Figure 2: Proposed Conceptual Framework



RESEARCH METHODOLOGY

This study adopted the data from World Value Survey (WVS) Wave 7th. The relevant questions were selected for this research, namely the state of happiness, state of health, satisfaction on financial situation, confidence in government, freedom of choice and control, nationality pride, income level, gender, age, marital status, employment status, and education level. Malaysia's survey results from Wave 7th have a total sample size of 1312 respondents, covering all 13 states and federal territories (Wilayah Persekutuan). Further details regarding the selection of questions are stated in Appendice 1.

This study involved the Likert scale data, namely the happiness, health status, satisfaction on household financial situation, confidence in government, freedom of choice and control, and nationality pride. Other than that, nominal data such as employment status, educational level, marital status, gender, age, income level, and religiosity are also involved. In short, the happiness model (Model 1) is conducted by using the multiple regression model with dummy variables due to the nominal nature of some of the variables. The inclusion of dummy variables in regression models indicates the construction of artificial variables that takes on values of 1 or 0, where one usually represents the presence of said attributes while 0 illustrates the absence of said attributes (Gujarati & Porter, 2008).

$$Happiness = \alpha + \beta_1 X_1 + \dots + \beta_5 X_5 + \beta_6 D_1 + \dots + \beta_{16} D_{11} + \mu \quad (Model 1)$$

Furthermore, the residual diagnosis tests were also conducted in this study. The normality assumption assumes that the residuals are not correlated and independently distributed. The Jarque-Bera (JB) normality test is performed to determine whether the residuals are normally distributed in a bell shape. When the JB value is equal to zero, the residuals are normally distributed. The model fulfils the 7th classical assumption when the residuals are normally distributed (Gujarati & Porter, 2008). Based on the normality test, the Jarque-Bera (JB) value calculation did not equal zero, which indicates that the residuals of this model are not normally distributed. However, the model has a large sample size of 1312 respondents. According to the central limit theorem (CLT), when the sample size is greater than 30, the sampling distribution can be considered normal, and the fairness of the model is not affected (Gujarati & Porter 2008).

The heteroscedasticity test showed that the residuals have constant variance. The presence of heteroscedasticity will lead to inaccurate or biased results. Consequently, the conclusion and inferences of the research will be misleading as well (Gujarati & Porter, 2008). The Breusch-Pagan test is used to detect the presence of heteroscedasticity in this research. When the p-value of the Breusch-Pagan test is larger than 0.05, it means that the residuals have equal variance, also known as homoscedasticity (Gujarati & Porter, 2008). According to the Breusch-Pagan test, the p-value is larger than the significance level of 0.05. The variance of the error term is constant in this model, indicating homoscedasticity.

On top of that, multicollinearity occurs when two or more variables are too highly correlated with each other. One of the classic symptoms of multicollinearity is the high value of R^2 but only a few significant regressors. However, multicollinearity is not necessarily harmful, especially when the R^2 value is high and the regression coefficients are individually significant (Gujarati & Porter, 2008). In order to detect multicollinearity, the variance inflation factors (VIF) were calculated to see how much multicollinearity exists in the equation (Gujarati & Porter, 2008). According to the rule of thumb, if the VIF value is below 10, it indicates insufficient evidence to claim the presence of collinearity among the regressors. Hence, do not reject H_0 due to the absence of multicollinearity problem (Gujarati & Porter, 2008). All the VIF values are less than ten, indicating that there is no statistical evidence to prove a linear relationship among the independent variables. There are no severe multicollinearity problems among the variables in the model.

As noted in Table 1, variables like happiness, health status, satisfaction on financial situation of household, confidence in government, freedom of choice and control, and nationality pride were rated on a scale. In short, the mean values indicate that, on average, the respondents are quite happy, in good health, have good confidence in government, and quite proud as a Malaysian. Table 2 shows the respondents' demographic profile in this study regarding age, gender, employment status, education level, income level, religiosity, and marital status. The percentage (%) denotes the proportion ratio of each category out of 1312 respondents.

Table 1: Descriptive Analysis

Variables	Mean	Standard Deviation
Happiness	3.03	0.604
Health status	3.81	0.772
Satisfaction on financial situation of household	6.25	1.985
Confidence in government	2.48	0.867
Freedom of choice and control	7.18	1.802
Nationality pride	3.04	0.874

Table 2: Demographic Profile

Variables	Categories	Percentage (%)
Age	Young Age (15 - 29 years old)	31.9
	Middle Age (30 - 49 years old)	41.4
	Old Age (50 years old and above)	26.7
Gender	Male	50
	Female	50
Employment status	Employed	96.5
	Unemployed	3.5
Education level	Lower Education level	52.2
	Middle Education level	18.7
	High Education level	29.1
Income level	Lower Income level	32.4
	Middle Income level	57.2
	High Income level	10.4
Religiosity	Not Religious	20.9
	Religious	79.1
Marital status	Married	63.4
	Single	32.9
	Divorced, Separated, Widowed	3.7

As shown in Table 3, the R^2 value of 0.303 indicates that the explanatory variables can explain 30.3% of happiness among Malaysians on average. In qualitative studies, especially when they involve self-rated scale data and binary-coded data where the difference is hard to explain, a R^2 value between 0.2 and 0.4 is very common. In fact, many previous studies on happiness, such as Yiap and Geetha (2017) and Lu (2014), had achieved similar R^2 value as well.

Health status is one of the most impactful indicators of happiness with a coefficient of 0.219, showing a strong positive relationship and highly significant at 5%. Furthermore, the coefficient value of health status is larger than the other variables, indicating health status is critical and influential in determining happiness among Malaysians. Other than that, the satisfaction on household financial situation, confidence in government, freedom of choice and control, and nationality pride, with coefficients of 0.046, 0.093, 0.037, 0.094 respectively had shown highly significant positive influences on happiness among Malaysian.

Furthermore, unemployed group is less happy than the employed group with a negative coefficient of 0.348 and highly significant at 5%. Employment status and happiness have a statistically significant relationship. Furthermore, the larger value of the coefficient indicates a significant difference in happiness levels between the employed and unemployed. Additionally, the statistics show that the middle age group is less happy than the younger age group, with a negative coefficient of 0.004. In contrast, the old age group is happier than the young age group, with a positive coefficient of 0.03. However, the p-value shows that both age group is statistically insignificant in causing a difference in happiness level in the case of Malaysia. Then, middle and high education level groups are significantly less happy than the low education level group, with negative coefficients of 0.071 and 0.093. Also, the statistics show that the difference between the middle education level and the lower level is weaker at the significance level of 10%, while the higher education level with a significance level at 5%.

The results also showed that the middle-income group has a negative coefficient of 0.049, indicating less happiness than the lower-income group. Conversely, the high-income group is happier than the lower-income group, with a positive coefficient of 0.006. However, both income level is reported to be statistically insignificant to affect the happiness among Malaysian. On top of that, the religious group is also less happy than the not religious group, with a negative coefficient of 0.066. However, the p-value is statistically significant at 10%, indicating that religion's negative impact on happiness level is much weaker than other independent variables. Then, the female group is reported to be less happy than the male group, with a negative coefficient of 0.021. However, the difference in happiness level between the two genders is statistically insignificant in Malaysia. Lastly, the statistics show that both the single group and divorced, separated, or widowed group are less happy than the married group, with a negative coefficient of 0.015 and 0.035, respectively. However, the results show that marital status is statistically insignificant in affecting the happiness level among Malaysians.

Table 3: Regression of happiness on selected variables

Independent Variables	Regression	
Constant	Coefficient	1.265*
	s.e	0.102
	t	12.405
Health status	Coefficient	0.219*
	s.e	0.020
	t	10.693
Satisfaction on household financial situation	Coefficient	0.046*
	s.e	0.008
	t	5.499
Confidence in government	Coefficient	0.093*
	s.e	0.018
	t	5.134
Freedom of choice and control	Coefficient	0.037*
	s.e	0.009
	t	4.049

Nationality pride	Coefficient	0.094*
	s.e	0.018
	t	5.322
Unemployed	Coefficient	-0.348*
	s.e	0.079
	t	-4.421
Middle Age	Coefficient	-0.004
	s.e	0.038
	t	-0.110
Old Age	Coefficient	0.030
	s.e	0.045
	t	0.671
Middle Education Level	Coefficient	-0.071**
	s.e	0.039
	t	-1.813
High Education Level	Coefficient	-0.093*
	s.e	0.034
	t	-2.742
Middle Income level	Coefficient	-0.049
	s.e	0.033
	t	-1.478
High Income Level	Coefficient	0.006
	s.e	0.053
	t	0.104
Religious	Coefficient	-0.066**
	s.e	0.037
	t	-1.800
Female	Coefficient	-0.021
	s.e	0.028
	t	-0.746
Single	Coefficient	-0.015
	s.e	0.037
	t	-0.406
Divorced, separated, or widowed	Coefficient	-0.035
	s.e	0.760
	t	-0.454

Dependent Variable: Happiness

$R^2 = 0.303$

N= 1312

* denotes the p-value significant at 5%

** denotes the p-value significant at 10%

CONCLUSION AND DISCUSSION

The findings show that happiness and health are positively related, this shows that healthier life is a happier life in Malaysia. In line with previous studies claiming that healthier people would generally be happier than those suffering from sickness (Pedersen & Schmidt, 2011; Boo et al., 2016). In fact, health status is ranked as the second most important factor that can affect happiness among Malaysians. Other than that, there is a positive relationship between satisfaction on household financial situation and happiness, also consistent with the past works of literature, where satisfaction in the household financial situation is one of the important factors that determine one's happiness (Boo et al., 2016; Yiap & Geetha, 2017). Furthermore, happiness increases with that confidence in government because government plays an important role in affecting people's happiness in delivering public services and implementing effective policies with high integrity, openness, and fairness (Ott, 2011). On top of that, freedom of choice and control positively affect happiness, indicating that people would naturally be happier with higher freedom in choosing what they desire and control in life (Rahman & Veenhoven, 2018; Verme, 2009). One of the significant findings in Malaysia is that Malaysian nationality pride has a positive impact on happiness. People with greater nationality pride are generally happier due to a higher sense of pride in national identity and higher patriotism, contributing to overall happiness (Ha & Jang, 2015; Reesken & Wright, 2011; Morrison et al., 2011).

On the contrary, unemployment is negatively correlates with happiness, proving that other than financial difficulties, unemployment also contributes to negative emotions such as stress, anxiety, and low self-esteem (Boo et al., 2016; Das et al., 2020). Based on the statistics, the difference in happiness level between the employed and unemployed is highly significant. In fact, it is the most important factor that determines happiness among Malaysians. Not only in Malaysia, but unemployment is also a global issue faced by many other countries as well. One of the contributors to unemployment is the technological advancement that creates a highly competitive labour market (Annie & Hamali, 2006).

People who are in middle age and older age are statistically insignificant in determining happiness among Malaysian, which is in line with previous study in Malaysia (Boo et al., 2016) but in contrast with the studies of Frey and Stutzer (2001); Blackflower and Oswald (2010), where age were claimed to be an important factor that affect one's happiness. In fact, mixed results were often obtained in terms of the relationship between age factors and happiness due to the difference in perspective and life experiences through the life cycle.

As for the education level, the study found that that people with middle and higher education are less happy than people with lower education in the case of this study. However, the statistical results were in line with the previous studies where those with secondary education or below are happier but not necessarily more satisfied with life in Malaysia (Boo et al., 2016). Additionally, those who have higher-level education might live a more stressful life due to academic stress. In fact, Manap, Hamid, and Ghani (2019) raised concerns regarding the high level of depression, anxiety, and stress among undergraduate students in Malaysia. One of the reasons to explain the situation is the rapidly changing demand for skillsets due to infrastructure development.

Interestingly, the relationship between income level and happiness is statistically insignificant based on the findings, which contrasts with many previous studies. However, we cannot conclude that Malaysians do not care about money in determining happiness because the research findings also show that the satisfaction on financial situation of household is highly significant and has positive associations with happiness level.

Among the insignificant variables, gender is reported to be statistically insignificant. Different genders might have different perspectives on happiness at different stages. Similarly, marital status is also statistically insignificant in affecting Malaysian's happiness level, indicating that the impact of traditional social norms about marriages like "life without marriage is incomplete" might have been decreasing over the years (Chen, 2012). In fact, the Malaysian divorce rate had increased 12% in 2019 (DOSM, 2020).

Besides that, religiosity is also found to have a weaker impact with happiness, which is in contrast with Popova (2014), Aghili and Kumar (2008), who claimed that religious people reported a higher level of happiness. Malaysia is a multicultural country with diverse religions such as Muslims, Buddhists, Hindus, and others. In many superstitious beliefs, happiness is only temporary or comes with negative consequences. The measuring scale of the fear of happiness can be described in statements like "I believe the more cheerful I am, the more I should expect bad things to occur in life" and "Excessive joy has some bad consequences" (Joshi, 2013).

As a result, the Malaysian government should pay extra attention to public healthcare and employment opportunities, given their high significance as indicators of happiness. Besides that, the government should further enhance human capital formation, especially in terms of education, health, nutrition, and social welfare protection. For instance, the pandemic of COVID-19 had exposed the flaws of the current healthcare system in many countries, including Malaysia, with issues such as insufficient treatment capacities and clinical facilities. Thus, authorities around the world have to urgently implement remedial measures such as reallocating resources and applying digital solutions for a better healthcare delivery.

Although globalisation and infrastructure developments are remarkably benefiting the current generation, in terms of improving efficiency and productivity, the competition in labour workforce is also increasing. Hence, the Malaysian government should constantly improvise the current education system to ensure that students are well-prepared to meet the market requirement, as well as reduce the gap between educational skill-set and the rapidly changing skill requirements in the labour market.

Additional to that, policymakers can also provide employment subsidies in order to encourage employers to hire long-term workers and enhance job security among Malaysians.

In terms of people's happiness welfare, policymakers can make use of happiness research findings to develop some welfare policies. For instance, Bhutan was the first country that imposed the Gross National Happiness (GNH), which was used to ensure the well-being and social welfares of the Bhutanese population. It emphasises the balanced progresses of economic growth and ecological sustainability and recognise the people's social needs for both current and future generations (Sithey, Thow & Li, 2015). On top of that, the United Arab Emirates government (2016) had established the Minister of State Happiness to harmonize government plans, programs, and policies to achieve a happier society. Such approaches can increase the public's confidence in government as well as the nationality pride, which would increase along with happiness based on the research findings.

Lastly, Malaysia should also actively participate in the Sustainable Development Goals (SDGs). The SDGs is a global approach to enhance societal well-being where it focuses on many aspects to ensure the sustainability of global resources and improve the quality of life (UN, n.d.). In fact, health and well-being, job security, quality education, gender equality, poverty, and zero hunger are included in the main concerns of SDGs.

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APPENDICES

Appendice 1: Variables of Happiness Model

Dependent Variable	Explanatory notes
Happiness Wave 7 th WVS, question 46. Taking all things together, would you say you are... Point 1 as “very happy”, to point 4 as “not at all happy”	Reverse coding was required to transform point 1 as “not at all happy” to point 4 as “very happy”.
Explanatory Variables	Explanatory notes
Health status Wave 7 th WVS, question 47. All in all, how would you describe your state of health these days? Point 1 as “very good”, to point 5 as “very poor”.	Reverse coding was required to transform point 1 as “very poor” to point 5 as “very good”.
Satisfaction on household financial situation Wave 7 th WVS, question 50. How satisfied are you with the financial situation of your household?	Point 1 as “completely dissatisfied”, to point 10 as “completely satisfied”.
Confidence in government Wave 7 th WVS, question 71. How much confidence you have in the government? Point 1 as “a great deal of confidence” to point 4 as “none at all”.	Reverse coding was required to transform point 1 as “none at all” to point 4 as “a great deal of confidence”.
Freedom of choice and control Wave 7 th WVS, question 48. How much freedom of choice and control you feel you have over the way your life turns out?	Point 1 as "no choice at all" to point 10 as "a great deal of choice"
Nationality pride Wave 7 th WVS, question 254. How proud are you to be Malaysian? Point 1 as “very proud” to point 4 as “not at all proud”	Reverse coding was required to transform point 1 as “not at all proud” to point 4 as “very proud”.
Employment status Wave 7 th WVS, question 279.	Employed*, Unemployed Group unemployed: 1 if unemployed, 0 of otherwise
Age Wave 7 th WVS, question 262.	Young Age *, Middle Age, Old Age Group middle age: 1 if middle age, 0 if otherwise Group old age: 1 if old age, 0 if otherwise
Education level Wave 7 th WVS, question 275.	Low Education Level *, Middle Education Level, High Education Level Group middle education level: 1 if middle education level, 0 if otherwise Group high education level: 1 if high education level, 0 if otherwise
Income level Wave 7 th WVS, question 288.	Low Income Level *, Middle Income Level, High Income Level Group middle income level: 1 if middle income level, 0 if otherwise Group high income level: 1 if high income level, 0 if otherwise

Religiosity Wave 7 th WVS, question 173.	Not religious*, Religious Group religious: 1 if religious, 0 if otherwise
Gender Wave 7 th WVS, question 260.	Male*, Female Group female: 1 if female, 0 if otherwise
Marital status Wave 7 th WVS, question 273.	Married*, Single, Divorced, separated, or widowed. Group single: 1 if single, 0 if otherwise Group divorced, separated, or widowed: 1 if divorced, separated, or widowed, 0 if otherwise.

BAFE079:
**REVISIT THE POVERTY MEASUREMENT IN MALAYSIA FROM A
MULTIDIMENSIONAL PERSPECTIVE IN THE POST COVID-19**

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Abstract

Poverty is a multi-dimensional phenomenon that has existed for so long. In addition to discussion of poverty issues, aspects of poverty measurement are important. Unidimensional measurement using poverty line income (PLI) is a popular measurement. However, this measurement has the readiness in measuring poverty. Hence, there is a proposal for the use of multi-dimensional poverty measurements namely the multi-dimensional poverty index (MPI) in measuring poverty that takes into account non-money elements. This paper will discuss the concept of unidimensional and multidimensional poverty measurement and subsequently discuss these two measurements in the context of Malaysia during this COVID-19 pandemic. Besides, this paper aims to contribute to the public debate on COVID-19 policy responses by quantifying the potential impact on global multidimensional poverty as measured by the global Multidimensional Poverty Index (MPI) developed by Alkire and Santos (2014), which captures concurrent or overlapping deprivation at the household level. There are few policies recommended in this study where it is suggested that members of community and industry experts are going to be involved in the poverty reduction programme and it is aligned with Maslow's requirement. This study also recommended that the key person selection policy must be transparent and audited annually in accordance with the objectives and evaluations set forth. Overall, this research is able to plan and orient policy solutions from a multidimensional approach, integrating health, social and economic priorities. Poverty reduction involves a variety of techniques, all of which are focused at improving not only income, but also non-monetary factors such as education, health, and living standards.

Keywords: Poverty, Poverty Line Income (PLI); Multidimensional Poverty Index (MPI), COVID-19

BAFE083:
**CATTLE FARMING – SPURRING THE UPLIFT OF ECONOMY AND
JOB CREATION**

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Abstract

Cattle farming is considered as one of the oldest profession that mankind has adopted. It is to be pointed out that after going through the literature review it was observed that not enough credible research has been carried out for Asian countries because of the different weather condition of Asia, especially Pakistan. SMEDA Pakistan have prepared several reports on cattle farming to uplift the economy and employment generation. Pakistan being an agricultural state, Covid-19 has forced people to go back to rural areas and follow old business practices which includes cattle farming. Being jobless and returning back it is imperative that people going back to the village can start cattle farming and earn a good living, and not only this but also helping the economy and also generating ample employment opportunities. It is to be deduced through the interviews conducted that cattle farming greatly helps in uplifting the overall financials of the farmers thereby effecting the economy as well as when income levels raise the quality of life also gets better and eventually effecting the overall economy as well as all the by-products of cattle farming are used as well in shape of bio-gas and natural fertilizer for crops.

Key Words: Cattle Farming, Economic Uplift, Employment generation, Covid-19

INTRODUCTION

Cattle farming goes back to 8000-7500 BC, it is considered as one of the oldest profession that mankind has adopted. (Collinson, 2000). Humans currently depend a lot on cattle in form of breeding and raising them. Raising and breeding a cattle comes with a lot of encouragements in shape of meat, dung, hides and most importantly milk, besides this cattle can be used as means of transportation as well, few areas have used cattle in sports as well where cattle are involved in races. There exists a serious connection between humans and cattle but even though cattle serving humans well for a good period it is of diminishing importance and as humans evolved at a rapid pace in recent years they are more swaying away from cattle farming as well (Wilks, 2019). It is to be pointed out that after going through the literature review it was observed that credible research has been done on the topic which is more leaned towards the European countries and the USA (Collins, 2000). The researches that has been carried out cannot be taken in account for Asian countries because of the different weather condition of Asia, not just weather but also the social, economic and the general working conditions. Similarly the research that has been carried out in Pakistan has not addressed the spurring effect of cattle farming in uplifting the economy and employment generations in the pandemic era. Dairy Development Board working under the Pakistani Government (SMEDA, 2013) and the live stock ministry of Pakistan (Khan, Dr. Abdul Ghaffar, 2006 et al) SMEDA (Small and medium enterprises development Association) have prepared several reports which are feasible in producing meat and dairy products. The studies conducted are relevant up to some extent but their actions to uplift the economy and employment generation needs to taken into account. Considering Pakistan being an agricultural state, during Covid-19 and lock down most of the people went back to their home town who are still following the rural practices which includes cattle farming. Many people became jobless because of Covid-19, it is found imperative that people going back to the village can

start cattle farming and earn a good living, and not only this but also helping the economy and also generating ample employment opportunities.

LITERATURE REVIEW

Pakistan is a country in south Asia and considered to be densely populated country with a population of approximately 210 Million till 2020 and it is to be noted that this population comes with an annual growth rate of about 2.5% annually (Bureau of statics Govt. of Pakistan , 2020).

Pakistan is a country which is fortunate enough to be blessed with many resources, that is water and ample land to harvest food for humans and animals as well. In spite of the fact that per capita income is around \$1190/- (Bureau of statics Govt. of Pakistan , 2020) which is not in par with many other countries specially the developed nations and other agricultural countries as well. The agricultural sector of Pakistan contributes around 22% in GDP, out of this 22%; 09% is the crop share whereas livestock contributes to around 12% while forestry and fishing contributes the remaining. The Agriculture sector growth rate remained more than 3 % (Bureau of statics Govt. of Pakistan , 2020).

Every household requires dairy and meat products almost every day specially dairy products like milk, cream etc. that are used daily at least twice a day in tea and in other forms, like butter, cream, cheese etc. Dairy and meat products requirement is every increasing all over the world (FAO, 2021), with Pakistan, a country with Muslim majority the demand for meat eating population is increasing. Requirement of dairy products and meat especially beef is ever increasing in Pakistan, due to being a Muslim country with ever increasing meat eating population of above 182 million. There is 5.6% unemployment in Pakistan if we take the urban areas (Bureau of statics Govt. of Pakistan , 2020). Whereas the situation in the rural areas it is found to be further worsening.

Farming is a profession that existed even in the era from to 8500 to 7500B.C and it is considered as one of the major profession that people used to follow back in those days. (Gammage, 2005) (E.encyclopedia). Farming can be taken as a sector that fulfills major human needs, that includes food, clothing and also many of the raw materials, like leather goods which includes, leather garments, bags, shoes etc., due to this it can provide ample job opportunities and good income for the survival of several families because several families are interlinked with one single profession. For this reason people have tried their best to improve and advance in this sector because of its lucrative offerings. In Pakistan, if it is looked provincial wise, Punjab contributes to almost 35% to the labor force, out which 90% is employed (Bureau of statics Govt. of Pakistan , 2020). Out of which only a mere 5% of the total is employed at farming. It can be assumed that this sector is still virgin and yet to be explored. Poverty and low provision of facilities for major part of population is the main cause for such a low outcome.

If Pakistan statistics are considered, inflation rate is in double digits almost up to 12% in 2020 (Bureau of statics Govt. of Pakistan , 2020). Besides this inflation rate the currency keeps on nose diving downwards which is very troublesome for many. Considering the agricultural sector main commodities that are utilized are the fertilizers and diesel which is very high because most of the tube wells used for irrigation run on diesel and mere 10% of all are using electricity, besides this the transportation is usually done by trucks on diesel as well. Both of these fertilizers and diesel fuel are the main items which contributes to the highest portion of imports (Bureau of statics Govt. of Pakistan , 2020). Similarly inputs on farms are getting costlier with every day passing, but that's not the case with the main crops outputs which are cotton, sugarcane, rice and most important wheat, but the farm products are not increased with the same proportion. The major chunk of farmers in Pakistan are basically small scale farmers as almost 75% of the total farmers posses less than 7 acre size of farms (Bureau of statics Govt. of Pakistan , 2020) with more than 15% farmers are not the owners of the land rather they pay rent to the land owners (Bureau of statics Govt. of Pakistan , 2020). Farming sector despite being the primary sector for Pakistan GNP, the growth rate remained hardly 6% as compared to other sectors (Bureau of statics Govt. of Pakistan , 2020).

It is evident from the aforementioned stats that the small farms contributes a good chunk in the Pakistani economy. It is crucial to both the economy as well as the farmers community. In many developed nations researchers have studies methods for improvement of the overall farming sector which includes crops arming and animal farming as well. (Collins M.P. 2000). In most of the developing nations, most of the small farmers overlooks the agricultural sector (Collins, 2000).

Research on farming rised in the early 70s, which shoewwed that several efforts were made for the improvements in the farming (Collins, 2000). Devloped Countries like USA, people took farming as an entrepreneurial opportunity. This entrepreneurial opportunity brought a revolution in the industiral sector as well. (Burrows, 2003). It is to be noted that techonological advancements is the main cause of economy boost for the developed nations (González-Sánchez, Information and Communication Technologies' and entrepreneurial activity: drivers of economic growth in Europe, 2013). A potential competitive strength lies in the agricultural sector especially the cattle farming for the developing countries, if the countries are able to utlize local resources to make their livestock sector into any entrepreneurial opportunity , it can give them financial benefits, financial security, employment generation and also support to other sectors as well.

World wide ample efforts are being made to boost the farming sector by adding entrepreneurial culture in it. It is widely accepted that entrepreneurship plays a key role in uplifiting the overall economy (Donato Iacobucci, 2012). A research based in Albania has recommended that entrepreneurial advancement in the agricultural sector can be fruitful to the overall economy of the country (Kruja, 2020). Comparing organic and traditional farming efficiency towards the technological application is similar but it is to be noted that the productivity of organic farming considering the dairy sector is 15% less compared to the inorganic farming (Carlos D Mayen, 2010).

Considering the developing nations several research is being done to promote the agricultural and livestock based entrepreneurial activities. The agro monoculture was supported by the Entrepreneurial Strategic alliances of Malaysian Small and Medium Enterprises (SMEs) for their logistic and supply chain collaborations to promote growth and profit (Ahmed, 2014/1). As per a study conducted in Iran, farmers with an entrepreneurial mindset performed better as compared to those who are not. (Kabiri, 2012).In Iran agriculture university students were found to be motivated to carry out entrepreneurial activities.

Considering Pakistan being an agricultural economy has not been able to exploit the large livestock population and also the agricultural sector (GOP (2020); Ministry of Food, Agriculture & Livestock (Livestock Wing), 2020) in order to become a major player in the international meat trade. The foremost reason is the lack of resources and finances and not to mention the entrepreneurial activities in the sector as well a business studies. Cattle farming has always been considered as an inferior sector as compared to the industrial sector because of which less allocation of resources were made in this sector. Similarly with lesser resources no defined standards, quality checks, corporate cattle farming, absence of modern slaughterhouses, processing plants and low priority was given by the policy makers to the farming section.

Individual researchers and also few of the government institutions that are related to the livestock and the agricultural sector have been trying to promote the sector, as several financial benefits are attached with this sector because of which buffalo is called the black gold (Bilal, 2006). Bilal, M. Q., Suleman, M. & Raziq, A. (2006) have similarly viewed in their article "Buffalo: Black gold of Pakistan" that buffalo meet almost all the protein that is required by humans by providing milk and beef. It is found out that buffalo milk is also richer in protein and fats compared to that of other animals. Buffaloes in Pakistan provides around 70% of the total milk where as cattle with 25% and the remaining is provided by other animals which includes goat sheep and camels. (Bilal, 2006). Regardless of the low level cattle farming, the value of milk is far more than that of the combined value of wheat and cotton crop in Pakistan (Bilal, 2006).

Livestock plays a very important role in daily lives, as livestock animals converts fodder, crops residual, agricultural by products and some wastes into milk and meat (Bilal, 2006) otherwise this waste will be an additive in polluting the environment because it is cumbersome to get rid of the waste, even if it is burnt, it will harm the atmosphere as well and thereby effecting the overall environment. Besides this animal Moreover animal dung is the best natural fertilizer for crops and in few areas, it is used as a fuel for cooking as well. As previously reviewed that Pakistan imports fertilizers, so this animal dung can actually help reduce the cost of fertilizers as well. Cattle providing milk in the rural areas is generally seen as a good profession in monetary terms, as it is a good source of income and it is survival for many families (Bilal, 2006).

The Pakistani livestock sector has a major contribution of 60% of the total agriculture , and around 15% to the total AGDP(Agricultural Gross domestic Product). Considering the Pakistani

livestock sector, milk is a very important commodity as it is used almost in every household specially in Pakistan. Considering Pakistan's population with an yearly growth rate of 2.7%, almost half of the overall population is somehow involved in the agricultural sector. As a result of the increase in demand for food and clothing as well animal husbandry is fast becoming an important sector of the agriculture both in terms of income growth and qualitative change as well. In 1999-2000 it added almost 9% to overall GDP. Furthermore the livestock sector helps people to earn for a living, if we see the number, this sectors employs about 32 million people, of which most of them are from the rural areas, but with the rise in population, there will be a rise in demand as well (Rehman et al., 2017)

For livestock promotion the Government of Pakistan has introduces several feasibility studies for the promotion of livestock growth, for meat production, feed lot cattle fattening farm up to 250 animals, and dairy farms from 50 to 250 animals, the Government also provided a feasibility study for goat farming as well, these are available on the website of Ministry of livestock and dairy development these feasibility studies have been prepared by Small and Medium Enterprise Development Authority (SMEDA) and are available on www.smeda.org.pk. (Small and Medium Enterprise Development Authority(SMEDA), 2018).

The food industry is an always growing industry whose demand is directly proportional to increase in population. This industry is still following the decades old structure now which needs some transformation through entrepreneurial activities. Considering the middle east, the total market for the region is around US\$ 15 billion, where as the international market for Halal food is somewhere estimated to be reaching a figure touching almost US\$ 200 billion which is expected to grown to US\$ 600 billion in coming years (Rehman et al., 2017). These are the factors which compels the idea of corporate cattle farming , but there exists several pre requisites and factors that supports and are considered essential.

After having a look at the reviewed literature it becomes evident that the corporate cattle farming is not being addressed clearly specially for Pakistan which is an agricultural and a developing nation, not enough research has been carried until now on how to promote cattle farming in the area, similarly the prospects, advantages, disadvantages even threats that the farmers can face are not addressed. Similarly the impact of cattle farming on economic uplift and employment generation is not addressed as well even when around 30 to 40% of the population is linked with the rural areas.

RESEARCH METHODOLOGY

The research will be followed using qualitative methodology. The researcher is aware of the local environment with an agricultural background. Qualitative study prospective will be adhered to provide solution for problems that are local and by using the resources that are available locally. Data was collected by selecting farms in the vicinity, interviews conducted of the local farmers which were 5 in total in order to find out the effects of cattle farming on the farmers lives as well as how they are contributing towards betterment of the society. The data was first collected, arranged, analyzed, and interpreted according to the study requirement and context. The data was then compared with similar secondary data as well. The research is expected to be publicly available on platforms in order to get accepted by the community and the government support as well.

Research Questions(RQs): Following are the research questions:

Q1. To Identify the level of income for small farmers how cattle farming can decrease this low income problem?

Due to the low income because of Covid-19, farmers are unable to invest more on crops due to which their income is very low and they are not able to live a good life. Cattle farming can help in increasing the income for farmers in order to live a good life.

Q2. How cattle farming is better than traditional farming tin terms of financial benefits and employment generation?

The crops farming and with a lesser number of cattle failed to provide enough financial benefits due to small scale and lack of resources, where as cattle farming if done on better scale it is more beneficial.

Q3. How cattle farming helps in biogas and how it can be utilized to increase income for farmers.?

Biogas is relatively a new technology from cattle farming, on which diesel engines can be operated.

Q4. For which end user products cattle farming can become a base for economic uplift at national and international level?

Cattle farming initially provides milk, leather, meat etc.with further refinement this milk is converted into cheese, butter, cream etc. similarly leather is converted into bags, shoes etc.

Q5. How cattle farming and crops farming are supportive for each other?

Cattle farming plays a supportive role as far as traditional crop farming is concerned, since natural fertilizer is from cattle dung, it can be very useful in financial savings, which in return can help the farmer to invest more in crop farms as the farmer is saving from using expensive imported fertilizers.

Data Analysis

To conclude the aim of the research, five interviews were conducted of different participants from the cattle farming sector. All of these participants started their cattle farming business after covid-19 and two of them were already in the business before Covid-19. All recorded interviews were transcribed for analysis. An analysis was carried out based on the interviews. For analysis a coding system was used according to the questions asked with the indicators listed down for marking of score from 1-3.

Below is the table

Indicators.	1 Disagree	2 Agree	3 strongly agree
Income level	0	1	4
Enhanced financial benefits	0	0	5
Usage of biogas	0	2	3
Cattle farming by products for economic uplift	0	1	4
Cattle farming and crops farming support.	0	1	4

RESEARCH FINDINGS AND CONCLUSION

This section involves the findings of the study and discuss in details of importance of cattle farming as per the indicators with the conclusion furnished in the end.

Income level.

Due to low annual income from crops and very less opportunities in the rural areas, often people move to big cities for work and to earn a living. Unfortunately people who were working in urban areas or big cities were forced to move back because of Covid-19 forcing them to stay home. With the already low income and pressure of no work, people started doing what their forefathers used to do, that is cattle farming. Cattle farming helped them to stand up again and earn a good and better living at par with the urban lifestyle. Out of 5 interviews that were conducted 4 were of the view that their income level is actually higher than what they used to earn in cities. Because of the reason they don't need to pay the hefty rentals and expensive groceries rather they can grow their own on their land and enjoy income as well as food.

Enhanced financial benefits and job creation

The traditional farming of crops with very less number of cattle was not able to provide ample finances due to small scale, lack of resources and wastage of products as well. However if cattle farming is taken as a business with more expertise and extra resources, cattle farming can increase the overall financial benefits. The interview conducted, it was revealed that the interviewees were far more satisfied in terms of financial benefits as compared to what they were before they took cattle farming as a business. It can be deduced that cattle farming can help enhance financial benefits because it almost every by products from cattle are sold and at a much better price compared to what crops sell. Almost all of the interviewees strongly agreed to the enhanced financial benefits of having cattle farming as a full fledge business. Not only this but people who are jobless in rural areas are offered jobs as cattle farming does not require some sort of education to be successful if a good leader is there.

Usage of biogas

As diesel prices are getting higher every day, the already poor farmers gets into trouble for running their machines on diesel fuel. It was deduced that if one uses biogas for fuel and to run machines it can actually be a savior, as it will help not only financial wise but also the by products will be utilized in a way to reduce the cost of the products. Out of 5 interviews , 2 agreed to the enhanced benefits of using biogas where as 3 were already using biogas and were happy to keep on using it in the future as well. Diesel is being imported to Pakistan, using self produced biogas helps in cost cutting and therefore contributes to lesser import of diesel as requirement becomes less as compared to if farmers don't use biogas.

Cattle farming by products.

Cattle farming not only provides cattle, but also provides several products along with by products. Cattle as an initial product provides milk , leather, wool, meat as well. Further refinement most of the products can be transformed into many other products, like from milk butter, ghee, cream etc can be taken out. Few of the interviewees were of the view that meat is also being used in other animal food, it is to be noted that meats by products like cutting wastes are used in other animal feeds. Similarly many other by products are made from cattle. even cattle dungs are used as a fuel and as a natural fertilizer for crops. As Pakistan also imports fertilizers as well, so it is very beneficial that cattle dungs is used as a fertilizer which can actually help lessen the imports. 1 out of 5 interviewees was of the view that foreign imported fertilizers should be used.

Cattle farming and crop farming support

Corporate cattle farming supports the traditional crop farming, because cattle farming is financially better, and because of cattle farming's by products, like biogas, cattle dung are taken as natural fertilizers that can actually support the farmers, and therefore by saving money in return of the not buying imported expensive fertilizers, the farmers can invest more in cattle and crop cultivation. Similarly feed crops from the agricultural field can provide low cost and quality fodder for the cattle. owning a cattle can be used as a transportation of crops as well which can help reduce the transportation cost and hence middleman commission are not there.

Conclusion and implication

The required elements for cattle farming are available in abundance in Pakistan as Pakistan is an agricultural country. Cattle farm products are also used in the agriculture sector as biogas, fertilizers, etc as well as the leather goods manufacturing. It is deduced that similar to the construction business, cattle farming also generates enough income through food and leather goods that can be sufficient for a big family. Similarly it also helps in generating employment at various levels.

Talking about the rural areas of Pakistan mainly wheat and cotton are the major source of income for farmers, it is evident from the statistical data that in the past few years and with the ever increasing inflation, high prices of fertilizers, fuel and electricity and other costs incurred in crops farming have increase the overall cost of the crop productions but it is to be noted that the price of the crop is not increased in the same proportionate which has resulted in further downfall of income specially after Covid-19. It is much better for farmers that cattle farming is adopted as it can provide

much more with the same price that is incurred on crops. Similarly because of Covid-19 many people lost their jobs and returned back to their village. To bear the cost of living cattle farming is such a business that can not only help them but rather help the whole community as it helps to generate employment as well as come with financial gains as well. Presently the farmers who were interviewed were in the early stages of starting a large scale cattle farming. Currently they are with between 5-10 cattle which is not very beneficial for them, but at least it is better than being jobless.

According to various studies it was found out that if cattle farming done as a proper business can actually help in get monetary benefits and with employment generation for many as cattle farming is not only linked with meat production, but it along with cattle fattening comes with several by products as well, like dairy products that includes milk, cheese and butter whose income is well clear to everyone. But not only this but a by product from cattle is its dung which is of much lesser value but it is treated as a wonderful fertilizer and not only this but utilization of this dung can be installed and to operate a biogas plant which is very good in terms of financial benefits as it is a lot cheaper, and in return farmers can run tube wells, and many other things on biogas saving a lot of financial resources.

Similarly cattle provide beef, leather milk as few of the initial products, these products are bases for many other finished products, for instance Leather good which includes garments, leather sports goods including football, volleyball, baseball etc. not only this but car upholstery, seat covers etc requires leather. Many other leather products are in our daily lives as well, like leather goods are there in shape of leather sofas, leather shoes, leather belts, etc. these are all furnished upon availability of raw cattle leather. Similarly Milk is a pre-requisite for many products like cheese, yoghurt, butter which is used in almost every type of bakery item. Almost every human take tea, which is made with milk. Similarly warm clothes are manufactured by using wool as a basic material.

With these all above usability of cattle, it can be taken that any scale of cattle farming be it small or large can be very helpful in uplifting the economy and job creation as well, as cattle farming just like any other industry comes with several by products, it is to be noted that a normal human being uses any product that is from a cattle everyday,

Future Recommendations.

Further researches can be carried out on how to increase the numbers and successfully transform a traditional cattle farming business into a complete biogas cattle farm. Researches can be done on making the by products more easily accessible as it requires time and commitment for these by products to be delivered to masses. Further more usually these farms are in far flung areas compared to urban areas. Further researches can be conducted for the delivery of the products from farms to masses, because the products produced by cattle milk can easily be expired within few hours if not treated rightly.

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BAFE085:
**MINIMIZING WAGE INEQUALITY IN THE ERA OF INTANGIBLE
ECONOMY: IS THERE A ROLE FOR MINIMUM WAGE AND TRADE
UNION?**

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Abstract

Wage inequality is the unequal distribution of wage pay in between skilled and unskilled workers. In view of the rise of intangible capital in this digitalisation era, it is suspected that wage inequality will further be widened under this background. Meanwhile in this study, the major focus will be on identifying the key factors of wage inequality and potential mechanisms to minimize this issue in 15 European Union (EU) countries from year 2008 to 2015. This study considers the use of disaggregated data on sectoral level. Studying sectoral level data can provide a way for national level policies to become more specific. This research uses the Generalized Method of Moments (GMM) dynamic panel data estimator. This method is used as it is able to capture the lag effects and to ensure the efficiency of the study. The result shows that relative demand of skilled and unskilled workers, merchandise trade as a percentage of GDP, real minimum wage, ratio of intangible assets to tangible assets and interaction term of share of intangible and union density are statistically significant in affecting wage inequality. One of the important implications from the findings is that trade union could exist as a remedy to minimize wage inequality in this era of intangible economy.

Keywords: Wage Inequality, Digitalisation, Intangible Economy

INTRODUCTION

When people talk about business capital, what first comes into their mind is tangible capitals which are solid in nature, for example: buildings, equipment and machinery. Intangible capitals (software, market research or business processes) are distinctive elements being high-yielding and long-lasting, but they are asset without physical form. Intangibles are being valued and accounted for differently by people. Intangibles empowers firms that appreciate them to expand and compete in a different dimension. However, the development of accounting standard, economic policies and investment behaviours nowadays happen in the context of tangible capital. With a vision to raise focus on the rise of intangible capital in this tangible-oriented world, this study aims to investigate the negative economic effect behind it and remedies to counter the issue.

Investment affects people from all walks of life and acts as a principal to many economic principles. This is because investment that fortifies capital, which, along with labour have been driving the economy as they account for the two quantifiable inputs to production. Gross Domestic Product (GDP) is calculated by adding up net exports, consumption, government spending and investment. Investment component of GDP is often the first to react against newly launched economic policy, making it to plummet drastically when a recession happens and hikes upon recovery. As a consequence, statisticians have been working diligently to track the amount invested by businesses throughout the years. In the past, when national statistical offices posts statistics about investment, they are all referring to tangible assets. However, such measure neglected the fact that investment on tangible asset alone does not run the economy. For instance, everyone knows that an airport possesses terminals, trucks and tarmac, but there are also important possessions that are not perceptible by touch like technical expertise, complicated software, agreement with airlines and

retailers. Although they do not have physical appearance, they do have enduring value and require money and time to develop. From the perspective of economists, they are named intangibles. Fortunately, European Commission endowed industry level productivity and growth research project named EU KLEMS has revealed capital input data on its database that can be used to proxy for investment in intangible assets in this study. Digitalization cannot happen without investment in intangible assets. Investment in intangibles thereby leads to increased demand for high-skill workers to deal with digital technologies. The comparative significance of intangible assets has been surging in most economies as a consequence of digitalization. What is intangible capital or intangible assets? More precisely, intangibles encompass funding concerning computing information (such as databases and software), business facilities (ranging from copyrights, trademarks, designs to scientific and non-scientific R&D), as well as economic competitiveness (involving advertising, brand equity, networks connectivity, firm-specific human capital, and organizational know-how to improve efficiency). These elements can also be summarized as “intellectual capital”, “intellectual assets” or “knowledge assets”. Intangible assets can empower companies with efficiency gains from advanced technologies and constitute a vital part in a company’s value creation. However, it is undeniable that a fast-growing economy often leaves low-wage workers behind. It is time to look at the side effect of this intangible-intensive economy.

Inequality has again struck the world and raised the name of itself in 2010s as one of the most talked about economic issues. A severe phenomenon has been brewing in the past few decades, that is the rich (in terms of wealth and earnings) gets richer, and the poor poorer (Alvaredo, Atkinson, Piketty & Saez, 2013). Other than that, various dimensions of inequality have gained spotlight equally: inequality between gender, between different races and between geographical location. The reason behind the resonating name of inequality might due to its multifaceted nature. Throughout the history, numerous explanations towards escalating inequality have been suggested, from advancing technologies to globalization to neoliberal politics. However as perceived in previous section, the elevation of intangibles has caused a long-term shift progressing in developed economies’ essence. Could this be the latest contributing factor to distinct dimensions of inequality wide-spreading in today’s societies? Not resembling the idea of poverty which refers to the state of the poor, economic inequality, widely signifies distinction spotted in diverse standards of financial well-being among individuals, populations or countries (McKay, 2002). The predicaments of economic inequality frequently happen in three aspects which are income, wage and wealth. Throughout the years, the tale of inequality has been worsening in many countries, including economy leader like United Kingdom. Concerning inequality, this study will solely attend to wage inequality. The reason behind is wages contributes the largest portion to the constitution of total income, and the soar of wage inequality in the recent decades has markedly affected the trend of overall income inequality (Acemoglu, 1997; Galbraith & Kum, 2003; Williamson, 1982). Moreover, wages are the most proper factor to show that workers’ skill levels can straightforwardly affect technological advancement and industrial development (Aghion & Howitt, 1998; Galor & Tsiddon, 1997).

Investment in intangible assets is obviously the immediate fuel that catalyzes the forward movement of industrial transformation. However, in this new era of rising intangible economy, country administrators not only have to work hard to hinder the vanish of the low-middle class, but also have to face major challenges like sustainable economic growth and rising inequality led by the new intangible era (Pressman, 2016). Prior to the era of digitalization, large economies like the EU countries have always been using trade unions and minimum wages policy as effective tools to restrain wage inequality from widening. Will this time be different? Meanwhile in this study, the major focus will be on identifying the key factors of wage inequality and potential mechanisms to minimize this issue in 15 EU countries from year 2008 to 2015. This study hopes to achieve the following specific objectives: (1) to identify the driving factors and mechanisms that explain wage inequality; (2) to investigate the implications of investment in intangible assets towards wage inequality; (3) to examine the effectiveness of wage-setting factors (trade union density and minimum wage policy) as to minimize wage inequality in the context of intangible economy. According to the study of Alvaredo, Chancel, Piketty, Saez and Zucman (2018), the inequality issue has risen in majority of European countries for over 3 decades since 1980. Throughout the years, umpteen empirical works no matter single country study or cross- country analysis have been helpful in throwing light on inequality happening in diverse countries with very different settings. However, none of them is able to elucidate the inequality trends among Europe economies which are considerably alike. Furthermore, there are spaces to improve policy recommendations as the specific mechanism about how the variables tested significant influence inequality are not known yet. This study aims to unveil the mechanism behind

that affects inequality by paying attention to the principal determinants of the wage's distribution. Besides, this study hopes to contribute to Malaysia's policymakers by providing insight into the inequality issue suffering by stronger economies so that our country can envisage the issue and frame suitable policies to counter it.

LITERATURE REVIEW

The Comeback of Wage Inequality

The word 'inequality' started to catch attentions of public in recent decade as more and more economists argue that a rise in inequality was a root cause behind the subprime mortgage crisis. Most of works in the literature stand a point those poor and middle-income households with static wages got into debt to finance their unrealistic consumptions (Borrs & Knauth, 2021; Goda, 2013). Wage inequality issue has proliferated in many countries, and it is noticed that growing skill premium is the fundamental element that contribute to the soaring wage inequality, indicating that wage pay gap between skilled workers with higher level of education attainment and unskilled workers with lesser education has kept on widening (Chaudhuri, Ghosh & Banerjee, 2018; Magalhães & Hellström, 2013). The issue is not concluded in spite of there are various theoretical explanations and empirical evidence bring established. Some insist that the inequality can be explained by supply and demand factors, although others advocate that the unhealthy wage structure was affected by wage-setting institutions. Nickell and Bell (1995) documented that the wage inequality across various countries can be deciphered by differential in skill levels. Countries with more scattered skill structure will have more widespread wage structures at the same time (Bossler & Schank, 2020; Leuven, Oosterbeek & Van Ophem, 2004). Supply and demand factors, SBTC, and globalization are among some of the factors offer by the literature for explaining the increasing trend in wage inequality over the past decades according to neoclassical theory (Acemoglu & Autor, 2011b; Goldin & Katz, 2008; Katz & Murphy, 1992; Ngo, 2021). Besides, in contrast to institutional factors, market forces are more significant to explain cross-national differences in wage inequality and compensation to skill (Gottschalk & Joyce, 1998; Gupta, 2020). The logic behind is that higher returns to skill has led to higher wage inequality (Heckman, Lochner & Taber, 1998). High skill premium has stimulated motivation to invest in human capital to form skills, at the end leads to greater supply of highly skilled labour (Welch, 1999).

Skill-Biased Technological Change (SBTC): the 1990s Consensus

One of the most prominent explanation offers by the literature in justifying the increasing wage inequality is the theory of SBTC (Guo & Wang, 2020; Kristal & Cohen, 2017; Song, Xie, Wang & Zhou, 2021). A general opinion featured in the literature is that efficiency of skilled workers has been outgrowing that of unskilled workers for several decades as technological advancement has been "skill-biased" (Brall & Schmid, 2020; Castelló-Climent & Doménech, 2021). Attentions on this "skill-bias" have been booming as it reputedly spearheads the widening wage inequality. In fact, the belief of technological advancement benefits skilled labour was not well known before the twentieth century. In the nineteenth century, skilled artisans in lieu scared that invention of spinning threshing and weaving machines would threaten the need for their skills (Acemoglu, 2002; Zhang & Yang, 2020). As a matter of fact, the fear came true, artisan shops were all substituted by assembly lines. Therefore, technological change was skill-replacing prior to twentieth century instead of skill-biased. Anyhow, the invention of electric motors in the early of twentieth century had given rise to capital-skill or technology-skill complementarities (Goldin & Katz, 1998; Okazaki, 2020). That was why abundant of researches on technology-skill complementarities emerged since the 1960s. In economic theory, 1960s was given the name decade of "human capital revolution" as it kickstarted escalating researches regarding investment in education induced by the phenomenon of technology-skill complementarities (Goldin & Katz, 2020; Katz, 1999; Teixeira, 2020). Some famous examples are Nelson and Phelps (1966) who emphasizes that "educated people make good innovators, so that education speeds the process of technological diffusion", Schultz (1975) who advocates that education elevates capability to face economic disequilibrium and Griliches (1969) who probed that skilled workers are more complementary with technology and capital compared to unskilled workers. A pioneering supply and demand framework claiming wage inequality as an outcome of "race between technological development and access to education" was then introduced by Tinbergen (1975).

Skill premium in the United States had risen drastically since the 1980s. There was a more than 25% rise from 1979 to 1995 in college graduates' wages in comparison with high-school graduates' wages in the United States (Acemoglu, 2002). This had stimulated plenty of researches trying to relate the change in wage structure to SBTC, focusing on integrating microcomputers' evolution as the main explanation (Dandalt, 2021; Levy & Murnane, 1992; Milindi & Inglesi-Lotz, 2021; Riaubaité, 2020). Evidently, Katz (1999) pointed out that right after a few years microcomputers being invented in the early 1980s, wage inequality started to soar. A vital observation by Krueger (1993) is that skilled employees with more education have more chances to utilise computers at their job, proposing that technology is complementary with human capital. Another important contribution was made by Berman, Bound and Griliches (1994), who found that investments in computers and research and development purpose was sturdily associated with demand for skilled workers after investigating the employment composition in United States manufacturing sector from 1979 to 1987. Expectedly, majority inequality researches came to a "1990s consensus" of SBTC hypothesis that introduction of innovative technology led to increased demand for skilled labour, thereby causing wage inequality to grow.

However, there also exist numerous challenges to the "1990s consensus" (Lemieux, 2008). Firstly, SBTC cannot fit in the explanation for forking patterns of inequality growth across developed countries. During the 1980s, some developed countries like Britain, Canada and United States encountered steep rise in inequality. In contrast, inequality remained remarkably stable in France and Japan which are also developed economies (Piketty & Saez, 2006). Second, SBTC does not incorporate institutional factors which is exceptionally vital for those at the lower end of wage distribution in explaining wage inequality.

PROPOSED THEORETICAL FRAMEWORK

Figure 1: Research Framework

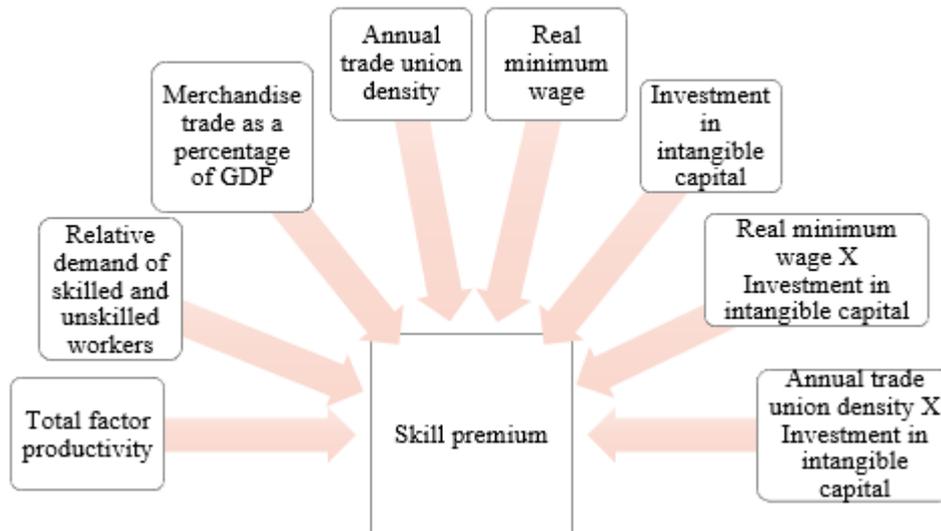


Figure 1 exhibits the research framework that will be of use in achieving the specific objectives of this study. This framework measures the effect of six independent variables on wage inequality represented by skill premium. The six independent variables are total factor productivity, relative demand of skilled and unskilled workers, merchandise trade as a percentage of GDP, annual trade union density, real minimum wage and investment in intangible capital. Besides, real minimum wage and annual trade union density also act as moderator variables that alter the effect that investment in intangible capital has on skill premium, on the basis of the moderator's value.

RESEARCH METHODOLOGY

Research Strategy

This study uses panel data on industry level in 15 selected EU countries and study with a cross-sectional and cross-country approach in practice. Owing to inconsistency of data availability

across different countries and industries, this research could only accommodate 15 EU countries (United Kingdom, Czech Republic, Spain, France, Luxembourg, Netherlands, Slovenia, Slovak Republic, Germany, Austria, Denmark, Finland, Italy, Latvia, Sweden). Hence, the countries election is substantially subject to the availability of data. In particular, this study pays special attention to the role of minimum wage and trade union in moderating the relationship between wage inequality and intangible assets. This study takes on widely accepted framework to act as a base to theoretical framework after checking out studies on SBTC. After taking literature reviews, research gap and theories into consideration, an empirical model is then formulated. Basing off of the model, hypotheses are deduced to meet the specific objectives. To proxy for variables testing, most related data are selected. Dataset is then constructed subject to data availability.

The methodology employed in this study can be illustrated as follows. The first step in this process is to compute and document the skill premium across sectors over a time span between 2008 and 2015 is computed and documented, along with country- and sector-specific data on ratio of intangible assets to tangible assets, total factor productivity, relative demand of skilled and unskilled workers, real minimum wage, annual trade union density and merchandise trade as a % of GDP. The determinants of wage inequality are empirically inferred from dynamic panel data model estimated using generalized method of moments (GMM) approach. The economic importance of each factor is then evaluated by quantifying their contribution to the gap of wage inequality. Finally, robustness of the results is checked against different model specifications, construction of the skill premium, independent variable, moderating variable and control variables.

This study considers the use of disaggregated data on sectoral level. Studying sectoral level data can assist policies at national level to be more targeted by looking into more details. It is noticed that policies catering at national level are often too generic to be effective in combating particular issues to specific sectors. Using sectoral level dataset that offers a wealth sector-specific information, the analyses adopt a panel specification, taking advantages of the heterogeneity as well as dynamic nature of the data. Panel data actually has few noticeable edges compared to the other econometric complements. The nature of panel data can contain more instructive data, enable one to oversee heterogeneity across the sample, control for time- and state- invariant variables and ease exploring the dynamics of adjustment (Baltagi, 2005; Daeton, 1995).

Modelling Skill Premium: The Theoretical Framework

Ascertaining aggregate total factor productivity (TFP) has been the conventional approach to gauge technological change at macro level. Solow (1957) pioneered this approach with a stand that by applying a production function, technological advancement could be estimated “residually”:

$$Y = AK^\alpha L^\beta \quad (1)$$

Advancement in technology (A) can be obtained by inputting magnitudes of aggregate output (Y), aggregate capital (K), and aggregate labour (L) acquired from credible sources, not forgetting estimates of α and β (shares of output of capital input and labour input), equivalent to:

$$\Delta(TFP) = \Delta(Y) - \alpha\Delta(K) - \beta\Delta(L) \quad (2)$$

This notion of technological change has been broadly applied throughout the period since its establishment. Solow explained TFP grows when there is an upsurge in output but inputs' marginal rates of transformations should remain constant. To put it another way, shift in TFP is a good proxy for factor-neutral technological shift. Since 1980s, United Kingdom had suffered drastic surge in both skill premium and relative supply of skilled workers. The fact was that factor-neutral technological shift did not consider factors like relative prices. In order to apprehend the historical events, concept of factor-biased technological shift was then popularised. According to Violante (2008), the existing model can be improved by allowing labour input to be a constant elasticity of substitution function of skilled and unskilled workers (L_s and L_u), with factor-specific productivities (A_s and A_u):

$$L = [(A_s l_s)^\sigma + (A_u l_u)^\sigma]^{\frac{1}{\sigma}}, \sigma \leq 1 \quad (3)$$

Thus, the marginal rate of transformation between the skilled and unskilled labour inputs and skill premium in a competitive market can be specified as:

$$\ln(MRT_{s,u}) = \sigma \ln\left(\frac{A_s}{A_u}\right) + (1 - \sigma) \ln\left(\frac{L_u}{L_s}\right) \quad (4)$$

Equation (4) can show the extent of skill premium grows if the factor-specific productivity of skilled labour (A_s) rises in comparison with the factor-specific productivity of unskilled labour (A_u). In addition, it will also show extent of skill premium falls if the supply of skilled labour (L_s) drops in comparison with the supply of unskilled labour (L_u). This equation was first applied by Katz and Murphy (1992) to estimate SBTC residually. It is discovered that changes in skill premium could be clarified by tendency in hiring skilled labours blended with fluctuations in skilled labours' supply. This equation was also applied as a foundation to the calculations in the work of Goldin and Katz (2007). Nevertheless, since this approach was established on residually measured unobservables, it is disputed to leave many doubts about the precise details of SBTC (Hornstein, Krusell & Violante, 2005).

No matter how, equation (4) has been extensively applied as a cornerstone in modelling skill premium. Due to its prominence in the field, models constructed on the grounds of it are called the "canonical model". Nonetheless, there are researches who made different attempts to estimate the association between education, technology and wage inequality. A unique attribute of the written works on labour market inequalities and technological advancement is that there exist diverse theoretical frameworks demonstrating viewpoints in a broad variety. The reality that it is inevitable to derive from competitive models at the time exploring labour market has been the principal cause for the diversity (Hornstein et al., 2005). One major downside of this diversity is that it is hard to establish structurally based quantitative comparisons between distinct mechanisms due to absence of an amalgamated framework.

Empirical Strategy

The empirical analysis of this study links the wage inequality to its key determinants based upon a relatively standard model specification as in equation (4) to equation (5) as follow:

$$INEQ = f(TFP, DEMAND) \quad (5)$$

where INEQ is the skill premium; TFP denotes total factor productivity; DEMAND denotes relative demand for skilled and unskilled workers. The skill premium of skilled versus unskilled labour specification by Tinbergen (1975) is captured in the standard model. This model is ratified to be practical in studying development of inequality and its relationship with human capital accumulation over time as the framework had been validated by others including Card and Lemieux (2001), Goldin and Katz (2007) and Katz and Murphy (1992). According to those authors, it is feasible to elucidate the exploration of human capital, labour markets and inequality. The method is to assume two factors of production, correlating to both high and low skill levels of workers.

Wage inequality happens as there is pay differential between skilled and unskilled labour, which subsequently being driven by interaction between the relative demand of skilled to unskilled labour (which acts as a proxy for alters in the human capital constitution of the labour force), and the correlated relative supply. Referring to the well-known supply and demand equilibrium framework, a rise in the relative supply of skilled workers should lead to a drop in skilled workers' earnings, whereas a rise in the relative demand for skilled workers will widen the skill premium. Hence, skill premium is regarded as the best proxy for wage inequality (Goldin & Katz, 2008).

The framework laid out by Tinbergen (1975) is to clarify the effect of labour demand and supply factors towards returns to education and earnings' distribution trend. It hypothesizes that an upsurge in relative supply of skilled workers will prompt a tightening in the earnings' gap between skilled and unskilled labour. As a result, wage inequality will fall. Nevertheless, an increase in relative demand for skilled worker will cause an opposite impact to wage inequality. Tinbergen's (1975) study is frequently cited as "the race between education and technology". This is for the reason that he hypothesized that relative demand for skilled workers will be benefited by long-term technological

advancement, widening the earnings' gap and inequality, however, educational upgrading can exert a counterbalancing power to reduce the skill premium.

To explore the effect of investment in intangible assets on wage inequality by taking into account the role of minimum wage and trade union, the equation (5) will be augmented as

$$INEQ = f \left(\begin{matrix} TFP, DEMAND, TRADE, UNION, MINWAGE, INTANGIBLE, \\ MINWAGE \times INTANGIBLE, UNION \times INTANGIBLE \end{matrix} \right) \quad (6)$$

where INEQ denotes skill premium; TRADE denotes merchandise trade as a percentage of GDP; UNION denotes annual trade union density; MINWAGE denotes real minimum wage; and INTANGIBLE denotes ratio of intangible assets to tangible assets.

As can be seen in equation (6), political and institutional factors can also play a role in determining wage inequality. Minimum wage is a frequent feature in literature discussing on wage inequality. In the study of Autor, Katz and Kearney (2008), real value of minimum wage was involved as one of the independent variables in their regressions. DiNardo et al. (1996) and Lemieux (2006) utilised minimum wage as a proxy to study the possible impact of labour market institutions on the skill premium. Minimum wage policy is well applied in developed economies although most employees in those countries don't really affected this policy, yet the policy is a safety net to less educated and unskilled employees. Minimum wage policy at work should relate negatively with skill premium as it raises the wage pay of labour at the bottom of skill hierarchy (Gindling & Terrell, 2005).

The renewed interest on wage inequality issue in the 2010s is also due to a doubt that if inequality trends can be deliberated by globalization and technological advancement (Acemoglu & Autor, 2011a; Helpman, 2016), or if it is labour market institutions such as collective bargaining, and minimum wages that can feature a significant role (Card & DiNardo, 2002; Fortin & Lemieux, 1997; Salverda & Checchi, 2015). The relationship between unions and wage inequality continuously allure research interest as the role of institutional forces in combating wage inequality in the new intangible era is still ambiguous. Some researchers noticed that the decrease in union density in certain nations is followed by emerging inequality. Some researches reveal that various density of unionization result in discrepancy of wage inequality level cross-country (DiNardo & Lemieux, 1997; Lemieux, 1993). Variability in the speed of de-unionization is connected to distinct inequality growth (Card, Lemieux & Riddell, 2004; Gosling & Lemieux, 2004). These signs have induced the argument of experts that labour law reform is a vital part of policy in response to rising wage inequality (Stiglitz, 2015).

Other than institutional factors, international trade is an important element that exert great impact on alteration in relative demand for skilled workers. Throughout the history, there have been plentiful of researches talking about distributional effects of trade liberalizations. Those literature as a whole claim that trade liberalization exerts significant yet comparatively little impact on skill premium. It could widen wage gap, thus increasing wage inequality, but the effect usually constitutes only little part of the aggregated rise in skill premium (Goldberg & Pavcnik, 2007). No matter how, wage inequality can rise after trade liberalization despite the fact that the country has comparative advantage with regard to unskilled labour. Atolia (2007) established a dynamic Heckscher-Ohlin model which indicates that blooming inequality happens in the short run due to trade liberalization as there are unbalanced rate of adaptation between the import and export sectors. Attributing to the capital-skill complementarity in manufacturing, the unbalance created capital accumulation that raises the relative wages of skilled labour. Other than straightforward impacts of trade openness, trade is a vital factor in the development of capital goods complementary to benefit skilled workers, which generally recognized as skill-biased technological change (Acemoglu, 2002). This is also related to the proof regarding the association between wage gaps and imports as well as exports of machinery and equipment (Acosta & Gasparini, 2007).

People are increasingly worry about the future of their career and wage pay as computer-aided technologies and robots are gradually taking over works formerly operated with human labour. Therefore, this study intends to study the impact of the progressing investment in intangible assets on wage inequality. The invention of innovative automation induced by large investments in intangible assets has great possibility to drastically worsen the wage inequality in between skilled and unskilled classes. According to Acemoglu and Restrepo (2017), manufacturing labour has been directly influenced by growths in robotics technologies since 1990 due to critical decline in manufacturing

employment. According to Wajcman (2017), the key dissimilarity between robotics innovation since 2010s and past industrial revolutions is the application of robots, enabling the assembly and utilisation of plenty robots to carry out various missions at relatively low costs.

Anyhow, most of the researchers come to a similar view that development in robotics will lead to a drastic increment in unemployment in large number of industries because one day the not-so-efficient assistant robot will grow into an independent machine with the continuing investment in intangible assets. Some researches remain reserved to the underlying impacts of the ongoing advances, while some forecast a large increment in unemployment in developed economies by 2030s (Frey & Osborne, 2017; Manyika, Chui, Bughin, Dobbs, Bisson & Marrs, 2013). With the increased use of automated robots, less wage pay will be accessible for people who rely on physical works as source of income. One of the feasible solutions to hinder the climb of poverty accompanied by the advancement of automation is through implementation of welfare program and effective policy that can protect the well-being of the bottom classes. Thus, investigating the effectiveness of wage-setting factors in minimizing wage inequality is one of the objectives of this study.

To estimate the equation (6), this study considers dynamic panel regression approach to examine whether the rise of intangible capital in a wage-setting institution environment can contribute to widening wage gap using a sample of developed economies. This leads to extended framework as the following econometric specification:

$$\begin{aligned} \ln INEQ_{ijt} = & \beta_0 + \beta_1 \ln INEQ_{ijt-1} + \beta_2 \ln TFP_{ijt} + \beta_3 \ln DEMAND_{ijt} + \\ & \beta_4 \ln TRADE_{it} + \beta_5 \ln UNION_{it} + \beta_6 \ln MINWAGE_{it} + \\ & \beta_7 \ln INTANGIBLE_{ijt} + \beta_8 \ln MINWAGE_{it} \ln INTANGIBLE_{ijt} + \\ & u_{ijt} \end{aligned} \quad (7)$$

$$\begin{aligned} \ln INEQ_{ijt} = & \beta_0 + \beta_1 \ln INEQ_{ijt-1} + \beta_2 \ln TFP_{ijt} + \beta_3 \ln DEMAND_{ijt} + \\ & \beta_4 \ln TRADE_{it} + \beta_5 \ln UNION_{it} + \beta_6 \ln MINWAGE_{it} + \\ & \beta_7 \ln INTANGIBLE_{ijt} + \beta_9 \ln UNION_{it} \ln INTANGIBLE_{ijt} + u_{ijt} \end{aligned} \quad (8)$$

where INEQ is the skill premium as a proxy for wage inequality; TFP denotes total factor productivity; DEMAND denotes relative demand of skilled and unskilled workers that serves as a proxy to human capital; TRADE denotes merchandise trade as a percentage of GDP to represent trade openness (globalization); UNION denotes annual trade union density; MINWAGE denotes real minimum wage proxies for the wage setting institution; INTANGIBLE denotes ratio of intangible assets to tangible assets representing the rise of investment in intangible capital, i refers to 15 EU countries; j is the j^{th} industries (agriculture, forestry and fishing; mining and quarrying; total manufacturing; construction; wholesale and retail trade, repair of motor vehicles and motorcycles; transportation and storage; accommodation and food service activities; information and communication; financial and insurance activities; real estate activities; public administration and defence, compulsory social security; education; health and social work) and $t = 2008, 2009, \dots, 2015$. \ln denotes logarithm transformation of the data.

To identify the driving factors and mechanisms that explain wage inequality as laid out in the specific objective 1, it can be hypothesized that $\beta_2 > 0$ or $\beta_2 < 0$, suggesting that TFP is general and non-biased, it will benefit both skilled and unskilled, whether which has more benefit will depend on the value. Apart from that, the fact that skill premium increases when relative demand of skilled and unskilled workers increases serves the conjecture of $\beta_3 > 0$. Relative demand of skilled and unskilled workers has had a positive impact on skill premium of the industries for the countries under consideration.

Besides, it is speculated that $\beta_4 > 0$ whereby skill premium increases when merchandise trade as a percentage of GDP increases. Merchandise trade as a percentage of GDP has had a positive impact on skill premium of the industries for the countries under consideration. Aside from that, it is formulated that $\beta_5 < 0$ by which skill premium decreases when annual trade union density increases. Annual trade union density has had a negative impact on skill premium of the industries for the countries under consideration.

Furthermore, it is anticipated that $\beta_6 < 0$ in which skill premium decreases when real minimum wage increases. Real minimum wage has had a negative impact on skill premium of the industries for the countries under consideration. Other than that, it is theorized that $\beta_7 > 0$ through which skill premium increases when ratio of intangible assets to tangible assets increases. Ratio of intangible assets to tangible assets has had a positive impact on skill premium of the industries for the countries under consideration. In addition, it is expected that $\beta_8 > 0$ or $\beta_8 < 0$. It is believed that the interaction term can either benefit or worsen wage inequality, whether which side it goes will depend on the weightage of the individual value in the interaction term.

To examine the total impact of investment in intangible capital on wage inequality as stated in specific objective 2, it is formulated that $\frac{\partial INEQ}{\partial INTANGIBLE} = \beta_7 + \beta_8 MINWAGE$. To compute the marginal effect of changes in wage inequality due to changes in investment in intangible capital, the partial derivative (keeping MINWAGE constant) is employed. It is believed that INTANGIBLE have two channels which are direct impact through INTANGIBLE itself and indirect impact through the interaction term. It is hypothesized that $\beta_7 > 0$ whereby skill premium increases when ratio of intangible assets to tangible assets increases. Meanwhile, when the ratio of intangible assets to tangible assets increases, increasing real minimum wage will increase the skill premium, therefore $\beta_8 > 0$. However, it is also hypothesized that $\beta_8 < 0$ in a scenario of decreasing ratio of intangible assets to tangible assets, increasing real minimum wage will decrease the skill premium. Assuming that β_7 and β_8 are significant, whether minimum wage level can minimize the wage inequality in the face of intangible economy depends on the optimization of minimum wage level.

Another equation formulated to look into the total impact of investment in intangible capital on wage inequality is $\frac{\partial INEQ}{\partial INTANGIBLE} = \beta_7 + \beta_9 UNION$. To compute the marginal effect of changes in wage inequality due to changes in investment in intangible capital, the partial derivative (keeping UNION constant) is employed. It is believed that INTANGIBLE have two channels which are direct impact through INTANGIBLE itself and indirect impact through the interaction term. It is hypothesized that $\beta_7 > 0$ by which skill premium increases when ratio of intangible assets to tangible assets increases. Moreover, when the ratio of intangible assets to tangible assets increases, increasing annual trade union density will decrease the skill premium, hence $\beta_9 < 0$. Assume that β_7 and β_9 are significant, in view of the advancements in intangible assets investment, existence of trade union is of utmost importance to gain bargaining power in order to protect welfare of employees.

In order to tackle specific objective 3, $\frac{\partial INEQ}{\partial MINWAGE} = \beta_6 + \beta_8 INTANGIBLE$ is formulated to explore the total impact of minimum wage level on wage inequality. To investigate the role of minimum wages (MINWAGE) on influencing the wage inequality (INEQ), this study will further compute the marginal effect by taking the partial derivative (keeping INEQ constant). So, the MINWAGE condition on INTANGIBLE will depend on which is larger, it can be either amplified or offsetting. It is speculated that $\beta_6 < 0$ as skill premium decreases as real minimum wage increases in the labour-intensive era. On the other hand, when the real minimum wage level is high, skill premium will increase if the ratio of intangible assets to tangible assets is increasing, therefore $\beta_8 > 0$. Nevertheless, it is also expected that $\beta_8 < 0$ in a condition of low ratio of intangible assets to tangible asset raising real minimum wage level will decrease skill premium. In the old ages, increase in real minimum wage level is meant to tighten the wage gap. However, in the face of intangible economy, a minimum wage of above-inflation level can become a stimulus for employers to substitute workers with robots which can be at lower costs.

Apart from that, another equation formulated to examine the total impact of trade union density on wage inequality is $\frac{\partial INEQ}{\partial UNION} = \beta_5 + \beta_9 INTANGIBLE$. To investigate the role of annual trade union density (UNION) on influencing the wage inequality (INEQ), this study will further compute the marginal effect by taking the partial derivative (keeping INTANGIBLE constant). It is expected that $\beta_5 < 0$ whereby skill premium decreases when annual trade union density increases. In addition, When the annual trade union density is high, skill premium will decrease no matter how much the ratio of intangible assets to tangible assets is, hence $\beta_9 < 0$. Union density or union membership rate depicts the number of workers registered as trade union members as a percentage of the entire sum

total of workers in a particular country. With the collective bargaining power, trade unions can negotiate with employers regarding wage increment, better welfare and others. The bargaining power of trade unions is directly reflected with the rates of union density in the country, higher union density basically means higher level of bargaining power.

To investigate the role of minimum wages (MINWAGE) and trade union density (UNION) on influencing the wage inequality (INEQ), this study will further compute the marginal effect by taking the partial derivative (keeping INTANGIBLE constant)

$$\frac{\partial INEQ}{\partial MINWAGE} = \beta_6 + \beta_8 INTANGIBLE \quad (8)$$

$$\frac{\partial INEQ}{\partial UNION} = \beta_5 + \beta_9 INTANGIBLE \quad (9)$$

In a similar fashion, to compute the marginal effect of changes in wage inequality due to changes in investment in intangible capital (INTANGIBLE), the partial derivative (keeping MINWAGE and UNION constant) can be employed:

$$\frac{\partial INEQ}{\partial INTANGIBLE} = \beta_7 + \beta_8 MINWAGE \quad (10)$$

$$\frac{\partial INEQ}{\partial INTANGIBLE} = \beta_7 + \beta_9 UNION \quad (11)$$

This study contributes to the society by clarifying the association between human capital, technology and wage inequality through two critical approach. First and foremost, it applies a huge database to study wage inequality by involving the latest data for human capital and TFP. Second, it factors in country heterogeneity, endogeneity to common factors and cross-country dependence in assessing the impacts of human capital and TFP on inequality. TFP is the natural logarithm of a measure of total factor productivity proposed by Solow (1957). The large dataset constituted of 15 countries across 8 years (since 2008) enabled meaningful explorations on the wage inequality issue in terms of cross-country dependence, panel heterogeneity and time-series feature like stationarity and causality, which did not present in earlier papers. Studying the heterogeneity of results is extremely vital as the impacts of varying wage inequality factors may be different towards various countries.

Model Estimation

To obtain unbiased and efficient estimates for the beta in equation (7), dynamic GMM panel estimator is employed. GMM was first established by Arellano and Bond (1991) and later improved by Blundell and Bond (1998). Hence, there exist two types of GMM dynamic panel estimators, which are “difference GMM” and “system GMM”. The first is also named as Arellano and Bond (1991) estimator which reforms all the explanatory variables by differencing, thus given the name “difference GMM”. Contrastingly, system GMM is an augmented estimator version discovered by Arellano and Bover (1995) and completely refined by Blundell and Bond (1998). Nevertheless, both “difference GMM” and “system GMM” estimators have a similarity that is they are meant to cater for “small-T, large-N” panels analysis, and incorporate with some assumptions on the process of generating data.

As a whole, GMM estimator offers exceptional advantages in handling autocorrelation, heteroscedasticity, and heterogeneity (Doytch & Uctum, 2011). GMM is able to solve endogeneity problem and provides a straightforward way to test the specification of the proposed model. Since the relationship between wage inequality and the driving forces are dynamic in nature, the dynamic panel data model allows us to capture the cross-industry characteristics and enables us to better understand the dynamics of adjustment. Looking at past studies, one-step results were more often be reported rather than two-step as two-step estimation usually generates downward biased standard errors. Nevertheless, two-step estimation appeared to be more competent as Windmeijer (2005) did finite-sample correction and generated a precise output. Windmeijer (2005) noticed that two-step GMM estimation shoed better performance by contributing lower standard errors and bias in contrast to one-step estimation.

First-difference GMM estimator solves endogeneity problem through two steps. First, individual effects are abolished by differentiating equation (7) with respect to time:

$$\begin{aligned} \Delta \ln INEQ_{ijt} = & \beta_1 \Delta \ln INEQ_{ijt-1} + \beta_2 \Delta \ln TFP_{ijt} + \beta_3 \Delta \ln DEMAND_{ijt} \\ & + \beta_4 \Delta \ln TRADE_{it} + \beta_5 \Delta \ln UNION_{it} + \beta_6 \Delta \ln MINWAGE_{it} \\ & + \beta_7 \Delta \ln INTANGIBLE_{ijt} + \beta_8 \Delta \ln MINWAGE_{it} \Delta \ln INTANGIBLE_{ijt} \\ & + \beta_9 \Delta \ln UNION_{it} \Delta \ln INTANGIBLE_{ijt} + \Delta u_{ijt} \end{aligned} \quad (12)$$

where INEQ is the skill premium as a proxy for wage inequality; TFP denotes total factor productivity; DEMAND denotes relative demand of skilled and unskilled workers that serves as a proxy to human capital; TRADE denotes merchandise trade as a percentage of GDP to represent trade openness (globalization); UNION denotes annual trade union density; MINWAGE denotes real minimum wage proxies for the wage setting institution; INTANGIBLE denotes ratio of intangible assets to tangible assets representing the rise of investment in intangible capital, *i* refers to 15 EU countries; *j* is the *j*th industries and *t* = 2008, 2009, ... 2015. \ln denotes logarithm transformation of the data.

Any possible bias that could originate from time-invariant unobserved heterogeneity are removed through first-differencing. The second step is to utilise instrumental variable. The association between the errors, Δu_{ijt} and the explanatory variable, $\Delta \ln INEQ_{ijt-1}$ is revised by instrumenting $\Delta \ln INEQ_{ijt-1}$ with $\ln INEQ_{ijt-s}$, for example values of INEQ that are lagged 2 periods or above. According to Bond, Hoeffler and Temple (2001), the first-differenced GMM estimator features the following moment conditions: $E[\ln INEQ_{ijt-s}, \Delta u_{ijt}] = 0$, $E[\Delta x_{ijt}, \Delta u_{ijt}] = 0$, where *x* encompasses all the regressors. However, it is not surprising that some independent variables might experience endogeneity problems with respect to the wage inequality. In such case, the moment conditions earlier may not be valid. Hence, other than instrumenting $\Delta \ln INEQ_{ijt-1}$ with lagged values of $\ln INEQ$, identically, values that lagged more than 2 periods behind can be adopted to instrument the corresponding independent variables suspected to suffer from endogeneity problems.

Notwithstanding, the outcomes from First-difference GMM estimation do exert several econometric weaknesses. First, Beck, Levine, and Loayza (2000) found that differencing can weaken the robustness of tests by lowering the variation in independent variables if the initial model is theoretically in levels. Besides, variables in levels can exist as weak instruments for first-differenced equations (Arellano & Bover, 1995). Thirdly, Griliches and Hausman (1986) propose that first-differencing can aggravate the effect of measurement errors on the regressand.

Therefore, Arellano and Bover (1995) and Blundell and Bond (1998) assert that incorporating the equations in levels can help researchers to alleviate those weaknesses in the estimation procedure. A “stacked” system of equations comprising equations in both levels and differences may subsequently be formed by adopting first-differenced variables as instruments for equations in levels. By doing so, “system” GMM estimator is built, it necessitates estimating the following system:

$$\begin{aligned} \begin{bmatrix} INEQ_{ijt} \\ \Delta INEQ_{ijt} \end{bmatrix} = & \alpha + \beta_1 \begin{bmatrix} INEQ_{ijt-p} \\ \Delta INEQ_{ijt-p} \end{bmatrix} + \beta_2 \begin{bmatrix} TFP_{ijt} \\ \Delta TFP_{ijt} \end{bmatrix} + \beta_3 \begin{bmatrix} DEMAND_{ijt} \\ \Delta DEMAND_{ijt} \end{bmatrix} + \beta_4 \begin{bmatrix} TRADE_{it} \\ \Delta TRADE_{it} \end{bmatrix} \\ & + \beta_5 \begin{bmatrix} UNION_{it} \\ \Delta UNION_{it} \end{bmatrix} + \beta_6 \begin{bmatrix} MINWAGE_{it} \\ \Delta MINWAGE_{it} \end{bmatrix} + \beta_7 \begin{bmatrix} INTANGIBLE_{ijt} \\ \Delta INTANGIBLE_{ijt} \end{bmatrix} + \\ & + \beta_8 \begin{bmatrix} MINWAGE_{it} INTANGIBLE_{ijt} \\ \Delta MINWAGE_{it} INTANGIBLE_{ijt} \end{bmatrix} + \beta_9 \begin{bmatrix} UNION_{it} INTANGIBLE_{ijt} \\ \Delta UNION_{it} INTANGIBLE_{ijt} \end{bmatrix} + u_{ijt} \end{aligned} \quad (13)$$

Up to this stage, it is saddening to tell that unobserved heterogeneity still exist in the equations in levels. To cope with this, this study makes assumption that although correlation with unobserved effects might exist between the intangible assets and control variables, the correlation remains constant over time. This is a pragmatic assumption over a comparatively short time period if the unobserved effects proxy for elements such as individual capability, soft skill competency and etcetera. The assumption contributes to an additional set of orthogonality conditions:

$$E[\Delta TFP_{ijt-s}(n_i + u_{ijt})] = E[\Delta DEMAND_{ijt-s}(n_i + u_{ijt})] = E[\Delta TRADE_{it-s}(n_i + u_{ijt})] = E[\Delta UNION_{it-s}(n_i + u_{ijt})] = E[\Delta MINWAGE_{it-s}(n_i + u_{ijt})] = E[\Delta INTANGIBLE_{ijt-s}(n_i + u_{ijt})] = E[\Delta MINWAGEINTANGIBLE_{ijt-s}(n_i + u_{ijt})] = E[\Delta UNIONINTANGIBLE_{ijt-s}(n_i + u_{ijt})] = E[\Delta INEQ_{ijt-s}(n_i + u_{ijt})] = 0, \forall s > p \quad (14)$$

DATA ANALYSIS

Descriptive Analysis

Descriptive statistics exist to provide a straightforward look at the nature of the data. One of the significances of this study is that it does not only emphasize on country, but also zoom into sectoral level to provide a holistic view regarding the issue. Table 4.1 will first lay out the statistical summary of skill premium and the share of intangible assets over tangible assets at country level, industry level will then be discussed in Table 4.2. A statistical summary of skill premium and share of intangible assets over tangible assets at country level for 8 years from year 2008 to 2015 is depicted in Table 4.1. In the table, mean signifies the data values' average; standard deviation indicates the average difference among a single observation and the mean; minimum reveals the smallest data value whereas maximum reveals the largest data value.

Table 4.1: Skill premium and the share of intangible assets over tangible assets by country, year 2008-2015

by country	Skill premium					Intangible asset / Tangible asset			
	N	Mean	SD	Min	Max	Mean	SD	Min	Max
United Kingdom	104	2.162	1.973	0.273	7.768	0.425	0.421	0.003	1.725
Czech Republic	91	20.621	28.152	0.653	154.580	0.257	0.405	0.002	1.724
Spain	104	5.879	7.604	0.203	33.029	0.264	0.406	0.001	2.201
France	104	4.316	5.301	0.504	25.423	0.679	1.700	0.002	15.178
Luxembourg	78	11.003	21.946	0.046	98.867	0.084	0.162	-0.015	1.008
Netherlands	104	4.122	5.049	0.295	20.793	0.442	0.372	0.003	1.317
Slovenia	65	23.509	28.890	0.310	126.196	0.197	0.230	0.001	1.050
Slovak Republic	104	77.404	179.805	1.309	842.245	0.205	0.330	0.001	1.627
Germany	104	9.246	9.509	0.515	41.732	0.300	0.366	0.001	1.324
Austria	104	6.021	7.390	0.411	31.691	0.497	0.693	0.003	2.734
Denmark	104	3.798	3.880	0.192	14.757	0.597	0.772	0.010	3.000
Finland	104	9.497	10.878	0.729	45.420	0.478	3.190	-27.917	12.865
Italy	91	2.473	3.353	0.074	11.903	0.308	0.378	0.002	1.768
Latvia	78	23.157	29.549	1.080	109.752	0.174	0.309	-0.011	2.096
Sweden	91	7.547	8.640	0.322	29.520	0.479	0.620	0.025	2.772
Overall	1430	13.787	53.705	0.046	842.25	0.372	1.073	-27.917	15.178

Note: SD represents standard deviation, Min represents minimum and Max represents maximum.

Looking at countries' perspective, as shown in Table 4.1, both skill premium and share of intangible assets over tangible assets share a same pattern, that is, poorer EU member countries (considering GDP per capita, adjusted for relative purchasing power) tend to suffer from larger wage inequality issue and invest less in intangible assets. For example, Slovak Republic has the largest wage inequality issue among all the samples and the country has relatively low share of intangible assets over tangible assets.

Table 4.2 depicts a statistical summary of skill premium and share of intangible assets over tangible assets at industry level for 8 years from year 2008 to 2015. In the table, mean signifies the data values' average; standard deviation indicates the average difference among a single observation and the mean; minimum reveals the smallest data value whereas maximum reveals the largest data value.

Table 4.2: Skill premium and the share of intangible assets over tangible assets by industry, year 2008-2015

by industry	Skill premium					Intangible asset / Tangible asset			
	N	Mean	SD	Min	Max	Mean	SD	Min	Max
Agriculture	110	1.212	1.144	0.101	4.910	0.024	0.045	-0.002	0.438
Mining	110	2.319	1.653	0.046	10.367	0.307	1.447	-0.015	15.178
Manufacturing	110	2.428	1.507	0.308	6.706	0.747	0.589	0.033	2.809
Construction	110	1.666	1.615	0.074	6.703	0.097	0.115	0.006	0.868
Wholesale & retail	110	3.378	4.026	0.230	17.312	0.254	0.190	0.035	1.012
Transportation	110	1.563	1.416	0.161	6.829	0.062	0.063	0.002	0.586
Hotels	110	0.946	1.209	0.096	8.433	0.060	0.053	-0.011	0.285
ICT	110	50.170	120.275	3.375	770.043	1.099	0.602	0.044	3.575
Finance	110	58.129	133.662	2.035	842.245	0.870	3.105	-27.917	12.865
Real estate	110	6.658	5.593	0.767	24.030	0.012	0.034	-0.008	0.305
Public sector	110	15.471	21.619	0.942	100.935	0.173	0.142	0.017	0.597
Education	110	27.287	18.324	4.894	98.867	0.956	0.761	-0.001	5.155
Health & social	110	8.002	5.359	2.088	25.725	0.175	0.298	0.010	3.027

Note: SD represents standard deviation, Min represents minimum and Max represents maximum.

By looking at the mean descriptive for each industry, it is noticeable that skill premium for ICT and Finance are far larger relative to other industries. In contrast, skill premium in Hotels, Agriculture and Transportation industries are remarkably low, particularly servicing-based Hotels industry having the lowest skill premium. In other word, no matter being skilled or unskilled, workers in these industries, their wage remuneration are basically almost the same. Not surprisingly, ICT industry invests more in software than in hardware as reflected by share of intangible assets over tangible assets larger than 1.

Table 4.3 demonstrates the correlation between variables extracted from 13 industries in 15 EU countries for 8 years (2008-2015). Correlation analysis is a practice of statistical evaluation applied to investigate the power of association between two continuous variables. If correlation exists, it indicates that if there is a systematic change in one variable, there will be a corresponding systematic change in the other. The variables adjust together over the same time frame.

Table 4.3: Correlation analysis

	Skill premium	Relative demand	TFP	Trade	Union density	Share of intangible	Minimum wage
Skill premium	1.000						
Relative demand	0.977***	1.000					
TFP	-0.001	-0.015	1.000				
Trade	0.256***	0.257***	0.062**	1.000			
Union density	-0.105***	-0.096***	-0.055**	-0.358***	1.000		
Share of intangible	0.064**	0.080***	-0.012	-0.064**	0.054**	1.000	
Minimum wage	0.018	0.048*	-0.072***	0.368***	-0.329***	-0.031	1.000

Note: ***, ** and * specify that null hypothesis is rejected at significance level of 1%, 5% and 10% respectively. Relative demand denotes relative demand of skilled and unskilled workers, TFP denotes Total Factor Productivity (TFP), Trade denotes merchandise trade as a percentage of GDP, Union density denotes annual trade union

density, Share of intangible denotes share of intangible assets over tangible assets and Minimum wage denotes real monthly minimum wage in national currency.

To check if correlation between independent variables are high, correlation analysis is needed. Correlation helps in understanding the association between variables. According to Zhou, Deng, Xia and Fu (2016), correlation analysis gauge the direction and intensity of the linear relationship between two variables. The results vary from -1 to +1 which depicts the strength of the correlation among the variables. The sign displays whether there is a positive or negative correlation. If both variables rise concurrently, it is a positive correlation, or vice versa for a negative correlation. It is expected to see correlation between regressand and regressors in regression analysis, but seeing high correlation among regressors is an undesired phenomenon (Daoud, 2017). It is great to see independent variable to be correlated with dependent variable, but it becomes a concern when the correlation between independent variables is high. Multicollinearity is a big issue when there exists high degree of correlation between independent variables in a regression model (Johnston, Jones & Manley, 2018). This is because when the degree of correlation between independent variables in a model is high enough, it can induce problems during results interpretation. According to the rule of thumb, the coefficient value must be smaller than 0.90 so as to be free from multicollinearity issue (Hair, Black, Babin & Anderson, 2010). Based on the results shown in Table 4.3, there is no multicollinearity problem as correlation among all the independent variables are considerably low with pairwise correlation coefficients not more than 0.4.

Empirical Findings

Research outcomes that signify the contributions and significance of this study will be highlighted in this section. To estimate the relationship of the dynamic model, this study considers four different estimators. Table 4.4 reveals the outcomes of the basic model using alternatives estimators. Besides, Table 4.5 and Table 4.6 present the results of extended models that features interaction terms of minimum wage and union density respectively. Alternative estimators are featured in all the 3 tables, column (2) displays the results of Pooled Ordinary Least Squares (POLS), column (3) displays the results of Fixed Effects Model (FEM), column (4) displays the results of First Difference GMM and column (5) displays the results of System GMM.

Table 4.4: Dynamic Panel Model A (without interaction terms)

	Column (2)	Column (3)	Column (4)	Column (5)
	OLS levels (POLS)	Within groups (FEM)	GMM DIF t-2 two-step	GMM SYS t-2 two-step
<i>ln(Skill premium)_{t-1}</i>	0.483 ^{**} (0.040)	0.112 ^{**} (0.019)	0.144 [*] (0.087)	0.323 [*] (0.160)
<i>Relative demand_t</i>	0.517 ^{**} (0.041)	0.941 ^{**} (0.022)	2.122 (3.174)	0.564 ^{**} (0.175)
<i>ln(TFP)_t</i>	-0.030 (0.077)	0.011 (0.050)	0.618 (2.067)	-0.474 (0.361)
<i>ln(Trade)_t</i>	0.050 (0.077)	-0.262 ^{**} (0.075)	-0.260 (0.230)	-0.356 (0.236)
<i>ln(Union density)_t</i>	0.298 ^{**} (0.102)	-0.071 (0.102)	-1.999 (3.260)	0.003 (0.292)
<i>ln(Share of intangible)_t</i>	0.001 (0.006)	0.003 (0.005)	-2.431 (14.618)	-0.040 (0.057)
<i>ln(Minimum wage)_t</i>	-0.002 (0.004)	0.011 ^{***} (0.002)	-0.006 (0.142)	0.028 [*] (0.015)
Diagnostic tests				
AR (1)	-	-	-0.38	-1.91 [*]
AR (2)	-	-	0.21	-1.44
Hansen	-	-	0.00	3.92
Sargan	-	-	-	10.91 ^{**}

Note: ***, ** and * specify that null hypothesis is rejected at significance level of 1%, 5% and 10% respectively. Relative demand denotes relative demand of skilled and unskilled workers, TFP denotes Total Factor Productivity (TFP), Trade denotes merchandise trade as a percentage of GDP, Union density denotes annual trade union density, Share of intangible denotes share of intangible assets over tangible assets and Minimum wage denotes

real monthly minimum wage in national currency. \ln denotes logarithm transformation of the data. (Table 4.5 and 4.6 share the same Note).

Different estimates of the regression model are showed in Table 4.4. The POLS estimates will serve as a benchmark result. All the results will be compared with the POLS because POLS estimator makes a more rigid assumptions on estimates. Looking at column (2), (3), (4) and (5), regardless what estimators being used, the dynamic term (lag of skill premium) are all significant, which is good news suggesting that the skill premium is influenced by its dynamic. However, looking at the signs for alternatives estimators, POLS estimates appear to be upward-biased (bigger values), while FEM estimates appear to be downward-bias (smaller values). This is a phenomenon to expect as there is a lag dynamic in the model, in which POLS tends to overestimate the parameters and FEM tends to underestimate the parameters. Therefore, alternative estimators like First Difference GMM and System GMM are considered. From Table 4.4, it is obvious that both the estimates of First Difference GMM and System GMM are in between the range of POLS and FEM estimates. For the reason that POLS overestimates and FEM underestimates, these two serves as a range of upper confidence interval bound and lower confidence interval bound because the true value should lie within them. First Difference GMM and System GMM estimates lie in the range indicating that they are making sense and performing better than POLS and FEM. To decide a better estimator between First Difference GMM and System GMM, diagnostic checking results are taken into consideration. Autocorrelation should be expected in this case. As shown in Table 4.4, First Difference GMM estimates did not show autocorrelation, but it does exist in System GMM estimates. In addition, another determinant is that First Difference GMM estimates are very close to those of FEM, this suggests that First Difference GMM might suffer from weak instrumental variable problem. With all these observations, it is concluded that System GMM estimator perform the best. For the reason being, system GMM estimates will be used for further discussions.

Share of intangible assets over tangible assets, real monthly minimum wage in national currency and annual trade union density are important variables to answer second and third specific objectives of this paper. However, from the first phase of estimation (Table 4.4), it is notable that both share of intangible assets over tangible assets and annual trade union density showed no impact towards wage inequality. Therefore, it is suspected that this basic model suffers from omitted variable issue. On this account, the estimation is carried on into next phase by extending the model with interaction variable of share of intangible and minimum wage.

Table 4.5: Dynamic Panel Model B (with interaction terms)

	Column (2)	Column (3)	Column (4)	Column (5)
	OLS levels (POLS)	Within groups (FEM)	GMM DIF t-2 two-step	GMM SYS t-2 two-step
$\ln(\text{Skill premium})_{t-1}$	0.483*** (0.040)	0.112*** (0.019)	0.229*** (0.006)	0.164*** (0.072)
Relative demand_t	0.517*** (0.041)	0.941*** (0.022)	2.341*** (0.140)	0.774*** (0.072)
$\ln(\text{TFP})_t$	-0.030 (0.077)	0.012 (0.050)	0.215 (0.397)	0.213 (0.122)
$\ln(\text{Trade})_t$	0.050 (0.077)	-0.261*** (0.075)	-0.033 (0.069)	-0.216 (0.119)
$\ln(\text{Union density})_t$	0.297*** (0.102)	-0.070 (0.102)	-0.217 (0.832)	-0.081 (0.154)
$\ln(\text{Share of intangible})_t$	0.002 (0.009)	0.009 (0.011)	1.262 (1.137)	-0.088 (0.056)
$\ln(\text{Minimum wage})_t$	-0.000 (0.012)	0.018 (0.010)	0.004 (0.002)	-0.046 (0.061)
$\ln(\text{Share of intangible})_{t\#}$	-0.000 (0.002)	-0.001 (0.001)	0.000 (0.003)	0.008 (0.008)
Diagnostic tests				
AR (1)	-	-	-1.40	-1.92*
AR (2)	-	-	0.51	-1.42
Hansen	-	-	37.95***	51.75*
Sargan	-	-	-	226.81***

The basic model is then extended by adding in interaction variable of share of intangible and minimum wage. This is to meet the specific objective of examining the effectiveness of wage-setting factors in minimizing wage inequality. Different estimates of the extended model B are showed in Table 4.5. Nonetheless, it is obvious that the interaction term is not significant under every estimator. Meaning to say, the relationship between skill premium and the share of intangible does not condition on minimum wage. As the estimations gradually being carried on, it is apparent that inclusion of interaction term of share of intangible and union density in analysis does make a difference. Hence, the interpretations shall be continued based on Table 4.6.

Table 4.6: Dynamic Panel Model C (with interaction terms)

	Column (2)		Column (3)		Column (4)	Column (5)
	OLS	levels	Within	groups	GMM DIF t-2	GMM SYS t-2
	(POLS)		(FEM)		two-step	two-step
$\ln(\text{Skill premium})_{t-1}$	0.483***		0.112***		0.223***	0.179***
	(0.040)		(0.019)		(0.018)	(0.063)
Relative demand_t	0.517***		0.941***		2.349***	0.803***
	(0.040)		(0.022)		(0.131)	(0.073)
$\ln(\text{TFP})_t$	-0.027		0.011		-0.008	0.241
	(0.077)		(0.050)		(0.274)	(0.151)
$\ln(\text{Trade})_t$	0.049		-0.262***		-0.006	-0.207
	(0.077)		(0.075)		(0.062)	(0.124)
$\ln(\text{Union density})_t$	0.315***		-0.075		-0.053	0.258
	(0.108)		(0.123)		(0.677)	(0.239)
$\ln(\text{Share of intangible})_t$	0.011		0.001		-0.585	0.132
	(0.023)		(0.028)		(1.645)	(0.078)
$\ln(\text{Minimum wage})_t$	-0.002		0.011***		0.003	0.015***
	(0.004)		(0.002)		(0.002)	(0.007)
$\ln(\text{Share of intangible})_{t\#}$	-0.003		0.001		0.223***	-0.060
$\ln(\text{Union density})_t$	(0.007)		(0.012)		(0.018)	(0.032)
Diagnostic tests						
AR (1)	-		-		-1.16	-2.57**
AR (2)	-		-		0.53	-1.23
Hansen	-		-		35.36***	44.88
Sargan	-		-		-	128.98***

Moving into the next phase of estimation, the basic model is extended by adding in interaction variable of share of intangible and annual trade union density. This is to meet the specific objective of examining the effectiveness of wage-setting factors in minimizing wage inequality. Different estimates of the extended model C are showed in Table 4.6. As discussed earlier, System GMM estimator does reveal better and more reliable results as compared to other estimators. For the reason being, system GMM estimates will be used for further discussions.

Referring to System GMM estimates, relative demand of skilled and unskilled workers is statistically significant at 1% significance level and positively correlated with skill premium. A 1 percent rise in relative demand of skilled and unskilled workers prompted the skill premium to increase by 0.803 percent, on average, ceteris paribus. The empirical works of Becker and Chiswick (1966) and Mincer (1997) concluded that the greater the inequality in educational attainment, the more uneven will the wage distribution be. If the demand for skilled worker keeps on growing at a faster rate than the demand for unskilled worker, then wage inequalities will also follow the steps. Meanwhile, merchandise trade as a percentage of GDP is statistically significant at 10% significance level and had a negative relationship with skill premium. An increment of 1 percent in merchandise trade as a percentage of GDP, causes skill premium to decrease by 0.207 percent, holding everything else constant. Heckscher and Ohlin (1919) proposed that different country type will detain different relationships between international trade and wage inequality. Precisely, openness to international trade rises the skill premium in skill-intensive countries and reduces skill premium in labour-abundant countries. Looking at TFP, it is insignificant as its p-value is larger than 10 percent significance level. This signifies that there is no relationship between TFP and skill premium. This is opposing the experiment of He (2012), whereby He (2012) saw an increase of skill premium with a constant growth of 0.15% in TFP. In addition, annual trade union density is also proved insignificant by its large p-

value. This shows that there is no relationship between annual trade union density and skill premium. This result goes against the findings of Farber, Herbst, Kuziemko and Naidu (2018) which came to a conclusion that existence of trade union can effectively reduce wage inequality issue. Apart from that, share of intangible assets over tangible assets is statistically significant at 10% significance level and positively correlated with skill premium whereby every 1 percent increase of share of intangible assets over tangible assets lead to an increment of 0.132 percent in skill premium, on average, ceteris paribus. Hols and Kocaata (2018) suggested that bank failures can lead to larger wage gap in sectors with higher share of intangible capital. Furthermore, the result shows that real monthly minimum wage in national currency actually has a positive relationship with skill premium and it is statistically significant at 5% significance level. For every 1 percent increase in real monthly minimum wage in national currency, skill premium will also increase by 0.015 percent, holding everything else constant. This result has opposed findings by Fernández and Messina (2018) where raising real minimum wages during the 2000s in Argentina, Brazil and Chile could squeeze the skill premium as a result of uplifting wages of unskilled labour at the bottom part of wage distribution.

Most of the time, the first question comes to mind when an interaction term is incorporated in a regression model is that: "Does the interaction term enhanced the explanatory power of the model as intended to?". The answer can be drawn by evaluating the statistical significance of the interaction variable and contrasting the coefficient of determination after and prior to including the interaction term. Therefore, the answer is yes for this case, the interaction term is statistically significant at 10% significance level. Besides, the coefficients of determinations (annual trade union density and share of intangible assets over tangible assets) are much greater with the existence of interaction variable. In other words, an interaction effect does exist whereby the effect of share of intangible assets over tangible assets on skill premium changes, subject to the value of annual trade union density. In a nutshell, the interaction variable's result indicates that although increase in share of intangible assets can enlarge wage gap, however, with emphasis on establishment of trade union, wage inequality issue can effectively be controlled.

As stated by Arellano and Bond (1991), Arellano and Bover (1995) and Blundell and Bond (1998), Hansen and AR2 are two mandatory tests to carry out for system GMM estimation. In this study, Hansen test was applied to check the instrument's overall validity with a null hypothesis of instruments are exogenous. Thus, an insignificant p-value is desired. According to the table 4.6, the p-value of the Hansen test is more than 0.1 which is more than the significance level of 10 percent. Hence, the null hypothesis should not be rejected which means that all instruments are valid and the model is significant. Arellano-Bond Serial Correlation Test was also employed to examine for the second-order (AR2) serial correlation problem under the null hypothesis of no serial correlation. As shown in Table 4.6, p-value of AR (2) is too large to reject the null hypothesis. Therefore, there is no second-order autocorrelation in the system model. Besides, the statistically significant lagged endogenous variable of skill premium is also signifying that the estimation is efficient and can be relied upon for statistical inference.

Table 4.7: Marginal effect of intangible capital towards skill premium condition on trade union density

Trade union density	Marginal effect
Min: 2.069	0.009 (0.021)
Mean: 3.207	-0.059* (0.032)
Max: 4.249	-0.122* (0.062)

Note: ***, ** and * specify that null hypothesis is rejected at significance level of 1%, 5% and 10% respectively. Min denotes minimum, Mean denotes on average and Max denotes maximum.

Marginal effect of intangible capital towards skill premium condition on trade union density are reported at Table 4.7. The three items in Table 4.7 refer to conditioning trade union density being low, trade union density being at an average level and trade union density being high. From the readings, it is noticeable that when more people join trade union, it can further reduce the gap of skill premium. Therefore, it is convincing that power of worker union does matter in this case. This further fortified the results in table 4.6 to answer the specific objectives.

CONCLUSION AND DISCUSSION

The result shows that relative demand of skilled and unskilled workers, merchandise trade as a percentage of GDP, real minimum wage, ratio of intangible assets to tangible assets and interaction term of share of intangible and union density are statistically significant in affecting wage inequality. An implication inspired by the finding is that political leader should allocate more fund into developing more accessible and quality education, especially at tertiary level. The executive director of Opportunity Nation has proposed that government have to make post-secondary education widely available for youngsters because jobs by 2025 might necessitate educated labour supply of post-secondary education (Divine, 2017). Some practical practices to boost education quality and number of educated residents are by providing more lenient education financing, reducing tuition fees and enhancing vocational training for jobs requiring special training. Lawmakers should put efforts on minimizing education costs and maximizing the distribution of schools in different districts. Corporates, alumni and benefactors should contribute by providing scholarships to younger generation as part of social responsibility. Government should make the most of excessive funds by offering children from poverty-stricken families the access to education.

Prejudicial treatment is supposed to be diminished especially when it comes to education. Discrimination can happen on the premise of spoken language, disability, financial ability, race, religion, nationality, gender and belief. This social problem is relatively critical in particular nations. For example, women's right to obtain education is deprived due to unfair law in certain countries. In this case, number of educated people are even lower, thus hindering the country's economy to grow in the context of extreme inequality. Government should emphasize on an equal chance to access quality education regardless of gender.

Furthermore, one of the important implications from the findings is that trade union could exist as a remedy to minimize wage inequality in this era of intangible economy. Workers should have the awareness to deliberately be associated with trade unions to secure welfare of themselves. In a nutshell, this study can devote by shedding light on the the relationship between wage inequality and the factors that have been took into account in this study. This can undoubtedly help any parties in their decision to determine the factors that play bigger part in causing wage inequality.

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BAFE004: HIGHER EDUCATION LEADERSHIP IN MALAYSIA: A META-ANALYSIS

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Abstract

Effective leadership and management for higher education institutions are essential for policymakers, university community, and leaders. Despite the fact that there are many studies on higher education leadership abroad, only a small number of studies have been done in Malaysia. Therefore, this meta-analysis study serves the purpose of exploring previous literature on higher education leadership in Malaysia from 2010 to 2020. The analysis conducted found 13 studies that fit the descriptions. Findings revealed four themes in explaining higher education leadership in Malaysia. Most universities and respondents involved in previous studies are public universities and academic staff, respectively. This study also examines the methodology used by the previous studies and the main findings of each study conducted. Although this is a relatively small study, it highlights the need for a more different research design to examine the level, frames, and outcomes of leadership in Malaysian universities.

Keywords: higher education, educational leadership, higher education leadership, meta-analysis and leadership

INTRODUCTION

Malaysia's higher education institutions are an excellent platform that provides a comprehensive pathway to local or international students for their tertiary education levels. It is a place that offers a catalyst to students for exchanging ideas and sustainable development during the learning process. For the past few years, Malaysia's higher education system has gone through dramatic changes and transformations in education leadership. Throughout the transformation of education, principals with leadership orientation can be cultivated to actively contribute knowledge to society (Jones & Harris, 2014).

The roles of a head, director, and president are marked as the soul of an educational institution that can produce a strong team to facilitate professional development, motivate staff, and resolve conflicts to achieve the mission of the education institutions (Abdallah & Forawi, 2017). The educators are also necessary to be efficacious moderators in leading the students to walk the right pathway and assisting them to achieve academic goals. Students also make provision of chances to build their leadership skills in education institutions. Higher educational institutions have the dominating character to play as leaders in the community and promote learning beyond boundaries (Zaid, Norazmi & Abdul Rasid, 2020).

The success of an educational institution depends on the leadership of the top management that will lead to a positive influence on the communities at all levels (Harun, Mahmood & Othman, 2020). However, these claims can be contended by Surji (2015) claiming that good leadership must possess different elements such as the right attitude, skills, power relationships and behaviour to dealing with people or organisations. In placing more emphasis, S Sathiyabama (2017) stated that excellent leadership requires the integration of skill, knowledge, personal values, and motivation to perform the task well in the institutions. Undoubtedly, leadership in Malaysia's higher education institutions has been recognised as a vital element in the area of organisational behaviour (Wahab, Rahmat, Yusof & Mohamed, 2016). It has gradually become one of the dynamic effects to facilitate

the achievement of desired goals and make improvements in the system of Malaysia's higher education.

Many past studies on leadership have been discussed in various contexts in Malaysia such as public services (Ali & Buang, 2016; Tuan, 2016; Ahmad & Saad, 2020), small and medium enterprises (Madanchian, Hussein, Noordin & Taherdoost, 2018; Rehman, Bhatti, & Chaudhry, 2019) and schools (Yusof, Vyapuri, Jalil, Mansor & Noor, 2017; Kin & Abdull Kareem, 2018; Thein & Adams, 2021). However, there are limited studies available on higher education leadership in Malaysia. Based on the search, there are 13 studies published on higher education leadership in Malaysia. Therefore, this meta-analysis was conducted to explore the aspects in main themes, type of higher education institutions, research methods, and main findings of past studies on higher education leadership in Malaysia. Based on the aspects, this study was conducted to address the following research questions:

Research Question 1: What are the main themes of studies related to higher education leadership in Malaysia?

Research Question 2: What types of higher education institutions have been chosen to research higher education leadership in Malaysia?

Research Question 3: What are the research methods that have been used to research higher education leadership in Malaysia?

Research Question 4: What are the main findings from the study on higher education leadership in Malaysia?

LITERATURE REVIEW

In recent studies, Arokiasamy and Tat (2020) explored the impact of transformational leadership on work engagement and spirituality among the academic staff in Malaysia's private higher education institutions. The study involved a total number of 369 full-time academic staff in Malaysia's higher education institutions. Throughout the research, evidence of transformational leaders in Malaysian higher education was evidenced to play a critical influence in creating workplace spirituality and job engagement. In placing more emphasis, Suib, Ghazali, Halim and Foziah (2021) acknowledged that transformational leadership has the potential to reform educational institutions and encourage all employees to chase their academic performance and satisfaction.

Wahab et al. (2016) claimed that due to the lack of Malaysian literature on leadership styles and organisational performance in the education industry, there is a need for researchers to implement constructive research related to leadership among the academic leader in the Malaysian education environment. The study found that most of Malaysia's academic leaders in public universities located in the Klang Valley area are highly skilled in transformational leadership. This claim can be supported by Syed Mohamad, Muhammad, Mohd Hussin and Habidin (2017) emphasising that leaders should act as a significant role models to their followers in terms of leadership skills. It is believed that leadership skills are capable of cultivating the graduates to fulfil the labour market requirement.

Jaisa, Yahayab and Ghanic (2020) explored the process of leadership competency framework development in Malaysia's higher education institutions. The research outlined five clusters including personal effectiveness, cognition, leadership, impact and influence, as well as achievement and action required to be comprised in the leadership competency framework using a case study technique of qualitative and exploratory. At the end of the study, beneficial insight into viable solutions to existing leadership competence frameworks for sustaining a high-performing in-education organisation was provided. The result is similar to that from the study of Ghavifekr, Idris, Ibrahim and Adewale (2016) claiming that implementing comprehensive instructional leadership qualities can promote job satisfaction among the lectures by upgrading their commitment towards their profession.

RESEARCH METHODOLOGY

This study used a meta-analysis design, a secondary study form, by identifying, exploring, and interpreting all relevant studies related to a topic domain to determine an overall effect estimate for a population of studies (Webster & Watson, 2002; Davis, Mengersen, Bennett & Mazerolle, 2014).

Narrowing down the scope of past research on higher education leadership in Malaysia, one database was selected, namely Google Scholar, as it could increase the chances of finding relevant literature. Keywords such as “higher education leadership in Malaysia” were used to search the articles. Among the criteria for selecting articles to be analysed was research in higher education leadership and research data collected among higher education academicians. Finally, a total of 13 articles were identified to meet the set criteria. Table 1 displays a list of research articles related to higher education leadership in Malaysia that were systematically analysed to answer predefined research questions.

Table 1: List of research articles related to higher education leadership in Malaysia

Researchers	Year	Journal/Proceedings	Sample Size
Arokiasamy & Tat	2020	Management Science Letters	369
Jaisa, Yahayab & Ghanic	2020	International Journal of Innovation, Creativity and Change	494
Arokiasamy & Tat	2019	Amazonia Investiga	750
Ghavifekr & Adewale	2019	Higher Education Evaluation and Development	10
Samsudin, Abd. Razak, Abdul Jalil, Ab. Wahid & Yaakub	2017	International Business Education Journal	71
Asaari, Dwivedi, Lawton & Desa	2016	European Scientific Journal	251
Tan, Tie & Chua	2015	SAGE Open	7
Bakar & Mahmood	2014	Advances in Management and Applied Economics	246
Nasir, Nordin, Seman & Rahmat	2014	Business & Entrepreneurship Journal	156
Fang	2013	Journal of Contemporary Issues and Thought	32
Sadeghi & Pihie	2012	International Journal of Business and Social Science	298
Pihie, Sadeghi & Elias	2011	Procedia-Social and Behavioral Sciences	298
Lo, Ramayah & De Run	2010	Procedia-Social and Behavioral Sciences	458

FINDINGS

The study findings were summarised into four sections based on the research question. The first section explains the characteristics of research themes related to higher education leadership in Malaysia. The second section explores the type of universities that have been chosen for the research of higher education leadership in Malaysia. The third section explores the research methods used to research higher education leadership in Malaysia. The last section provides the main findings of the studies.

Research Question 1: What are the main themes of the studies related to higher education leadership in Malaysia?

The analysis revealed four themes in the studies related to higher education leadership in Malaysia, namely identifying leadership levels, identifying leadership frames, exploring relationships between variables, as well as exploring antecedents and consequences of leadership (such as transactional and transformational). Table 2 shows related themes of the studies.

Table 2: Themes of the studies

Themes	f	Studies
Identifying leadership levels	1	Samsudin, Abd. Razak, Abdul Jalil, Ab. Wahid & Yaakub (2017)
Identifying leadership frames	2	Jaisa, Yahayab & Ghanic (2020) Tan, Tie & Chua (2015)
Exploring relationships	6	Arokiasamy & Tat (2020) Arokiasamy & Tat (2019) Asaari, Dwivedi, Lawton & Desa (2016) Bakar, & Mahmood (2014) Nasir, Nordin, Seman & Rahmat (2014) Pihie, Sadeghi & Elias (2011)
Exploring antecedents and consequences of leadership (e.g., transactional, transformational)	4	Ghavifekr & Adewale (2019) Fang (2013) Sadeghi & Pihie (2012) Lo, Ramayah & De Run (2010)

Research Question 2: What types of higher education institutions have been chosen to research higher education leadership in Malaysia?

Based on the analysis conducted, only two types of higher education institutions were involved in the studies, namely private and public universities. Ten samples selected public universities as the research sampling frame, while three out of 11 have chosen private universities as sampling frames in their studies. Table 3 shows the types of higher education institutions involved in the studies.

Table 3: Types of higher education institutions involved in the studies

Types of universities	f	Studies
Private universities	3	Arokiasamy & Tat (2020) Arokiasamy & Tat (2019) Tan, Tie & Chua (2015)
Public universities	10	Jaisa, Yahayab & Ghanic (2020) Ghavifekr & Adewale (2019) Samsudin, Abd. Razak, Abdul Jalil, Ab. Wahid & Yaakub (2017) Asaari, Dwivedi, Lawton & Desa (2016) Bakar, & Mahmood (2014) Nasir, Nordin, Seman & Rahmat (2014) Fang (2013) Sadeghi & Pihie (2012) Pihie, Sadeghi & Elias (2011) Lo, Ramayah & De Run (2010)

Research Question 3: What are the research methods that have been used to research higher education leadership in Malaysia?

Based on the analysis conducted, there were three approaches used, which were quantitative, qualitative, and mixed-method. As for the study's design, the questionnaire was the primary research instrument used with eight samples involved, while three samples chose semi-structured interviews in their data collection process. Out of 13 samples, only one sample was conducted using a mixed-method design. Table 4 shows the approaches and designs of the studies.

Table 4: Approaches and design of the studies

Methodology	Design	f	Studies
Qualitative	Semi-structured interview	4	Jaisa, Yahayab & Ghanic (2020) Ghavifekr & Adewale (2019) Tan, Tie & Chua (2015) Fang (2013)
Quantitative	Questionnaire	8	Arokiasamy & Tat (2020) Arokiasamy & Tat (2019) Samsudin, Abd. Razak, Abdul Jalil, Ab. Wahid & Yaakub (2017) Asaari, Dwivedi, Lawton & Desa (2016) Bakar, & Mahmood (2014) Sadeghi & Pihie (2012) Pihie, Sadeghi & Elias (2011) Lo, Ramayah & De Run (2010)
Mixed-method	Questionnaire & Semi-structured interview	1	Nasir, Nordin, Seman & Rahmat (2014)

Two sample groups have been selected in related studies in terms of the study sample, namely academic employees and academic leaders. Academic employees were referred to full-time academic staff attached to the higher education institution. Academic leaders in the related studies consisted of vice-chancellor, president, deputy vice-chancellor, vice president, dean, and deputy dean of the higher education institution. Table 5 shows the sample of the study.

Table 5: Sample of the study

Sample	f	Studies
Academic employees	10	Arokiasamy & Tat (2020) Jaisa, Yahayab & Ghanic (2020) Arokiasamy & Tat (2019) Ghavifekr & Adewale (2019) Samsudin, Abd. Razak, Abdul Jalil, Ab. Wahid & Yaakub (2017) Asaari, Dwivedi, Lawton & Desa (2016) Nasir, Nordin, Seman & Rahmat (2014) Sadeghi & Pihie (2012) Pihie, Sadeghi & Elias (2011) Lo, Ramayah & De Run (2010)
Academic leaders	3	Tan, Tie & Chua (2015) Bakar & Mahmood (2014) Fang (2013)

Research Question 4: What are the main findings from the studies on higher education leadership in Malaysia?

Table 6 shows the main findings and research objectives of the related studies.

Table 6: Main findings and research objectives of the studies

Studies	Research objective	Main findings
Arokiasamy & Tat (2020)	To examine the relationship between transformational leadership, work engagement and workplace spirituality of academic employees in four PHEIs in Malaysia.	The study found a satisfactorily good level of influence between transformational leadership and workplace spirituality and work engagement.

Jaisa, Yahayab & Ghanic (2020)	To develop a leadership competency framework for higher education institutions in Malaysia.	The study demonstrated five clusters (personal effectiveness, cognition, leading, impact and influence and achievement and action) that need to be included in the leadership competency framework.
Arokiasamy & Tat (2019)	To examine the extent to which organisational culture, job satisfaction and leadership style influence organisational commitment among academic employees in the PHEIs in Malaysia.	The results revealed a positive significant relationship between organisational culture, leadership style, job satisfaction and organisational commitment.
Ghavifekr & Adewale (2019)	To explore the impact of change leadership on staff organisational citizenship behaviour in a university setting.	The findings revealed that change leadership builds the confidence of staff, motivates them and helps to ensure trust.
Samsudin, Abd. Razak, Abdul Jalil, Ab. Wahid & Yaakub (2017)	To investigate the practice of transformational leadership among academic administrators of a faculty at one of the public universities in Malaysia.	The findings of the study revealed that the mean scores of the academicians at the university were below the mean scores of the normative sample for all transformational subscales.
Asaari, Dwivedi, Lawton & Desa (2016)	To examine the relationship between academic leadership and organisational commitment.	The results revealed that academic leadership, namely adaptability to change, transformational style and charisma, were significantly and positively related to organisational commitment.
Tan, Tie & Chua (2015)	To examine the leadership frames of a vice-chancellor in a private university in Malaysia	Content analysis revealed that the vice-chancellor exhibited three frames and a multi-frame leadership style.
Bakar & Mahmood (2014)	To determine the significant relationship between transformational leadership and performance of academic leaders, as well as the significant relationship between corporate entrepreneurship and performance of academic leaders.	The findings revealed significant and positive relationships between transformational leadership and performance, as well as corporate entrepreneurship and performance.
Nasir, Nordin, Seman & Rahmat (2014)	To examine the relationship between the leadership styles and the organisational performance among the Malaysian Public Universities (IPTA) academic leaders in Klang Valley Area.	The findings indicated that all leadership styles discussed on transformational leadership, transactional leadership and laissez-faire leadership had a positive and significant relationship with organisational performance.
Fang (2013)	To investigate the external factors specifically on the social impacts towards leadership in Higher education in Malaysia.	The findings showed that social impacts significantly contributed to the construction of leadership and leadership effectiveness at Higher Education in Malaysia.

Sadeghi & Pihie (2012)	To determine heads of academic departments' leadership styles and their relationship with leadership effectiveness at Malaysian Research Universities (RUs).	The result of regression analysis demonstrated that contingent reward, idealised influence (attribute), inspirational motivation, individualised consideration, laissez-faire, intellectual stimulation, and management-by-exception active were significant predictors of leadership effectiveness.
Pihie, Sadeghi & Elias (2011)	To determine the head of departments' leadership style and its correlation with lecturers' job satisfaction.	The transformational and transactional leadership styles were positively related to the lecturers' job satisfaction, while laissez-faire was negatively correlated.
Lo, Ramayah & De Run (2010)	To examine the influence of transformational leadership style on employees' organisational commitment to change in Malaysia higher education context.	The findings suggested that two dimensions of transformational leadership style namely, idealised influence and inspirational motivation, were found to have a positive relationship with personal commitment to change.

DISCUSSION

This study's finding indicated four main themes emerged from the studies related to higher education leadership in Malaysia. The themes were to identify leadership levels among academicians at one of the public universities in Malaysia, identify leadership frames for higher education in Malaysia, explore the relationship between leadership and selected variables, as well as explore antecedents and consequences of leadership (such as transactional and transformational). As for the type of university involved in the studies, ten samples have chosen public universities as the sampling frame for data collection, while only three samples collected their data from private universities. The studies involved were Arokiasamy and Tat (2020), Arokiasamy and Tat (2019), and Tan et al. (2015).

The finding also revealed that most of the past studies employed a quantitative approach rather than a qualitative approach and mixed-method. Only four samples used a qualitative approach, whereas one sample used a mixed-method on their studies of higher education leadership in Malaysia. Four studies that used a qualitative approach were Jaisa et al. (2020), Ghavifekr and Adewale (2019), Tan et al. (2015), and Fang (2013). While the only study that used a mixed-method was Nasir et al. (2014). Furthermore, most previous studies targeted academic staff as the research sample followed by academic leaders in higher education institutions as a research sample. Ten studies utilised a sample of higher education institutions, academic staff, namely Arokiasamy and Tat (2020), Jaisa et al. (2020), Arokiasamy and Tat (2019), Ghavifekr and Adewale (2019), Samsudin et al. (2017), Asaari et al. (2016), Nasir et al. (2014), Sadeghi and Pihie (2012), Pihie et al. (2011), and Lo et al. (2010). This was followed by three studies using a sample of higher education institutions academic leaders, which were Tan et al. (2015), Bakar and Mahmood (2014), and Fang (2013).

The findings of the studies also showed that all research objectives have been successfully achieved. From a correlational research design standpoint, the study of Arokiasamy and Tat (2020) found a satisfactorily good level of influence between transformational leadership and workplace spirituality and work engagement. Bakar and Mahmood (2014) found significant and positive relationships between transformational leadership and performance and corporate entrepreneurship and performance. Meanwhile, Lo et al. (2010) suggested that two dimensions of transformational leadership style, namely idealised influence and inspirational motivation, have positive relationships with personal commitment to change. Referring to the findings above, there is no doubt that transformational leadership is a motivator to raise work engagement, individual innovative behaviour, and employees' performance in the education context. Furthermore, the result of the study by

Ghavifekr and Adewale, (2019) revealed that change leadership builds staff confidence, motivates them, and helps to ensure trust. From a leadership framework development standpoint, the study of Jaisa et al. (2020) demonstrated five clusters (personal effectiveness, cognition, leading, impact and influence, and achievement and action) that need to be included in the leadership competency framework. The outcome was consistent with the research of Tan et al. (2015), whereby effective and high cognitive leadership styles are essential for education organization effectiveness. However, further careful model development studies are needed to demonstrate the leadership frames of higher education in Malaysia.

CONCLUSION AND SUGGESTION

Overall, the meta-analysis findings found that studies related to higher education leadership in Malaysia are still limited compared to overseas studies and other research fields in Malaysia, including leadership in the business firm. Higher education leadership is crucial in ensuring the higher education institutions' employees' well-being, making higher quality decisions, and improving the university's reputation. Future studies should consider mixed-method design to obtain a new understanding from respondents to strengthen the research outcome. Second, more future studies in private universities, college universities, and colleges could be included to refine the leadership model and further understand leadership in broader contexts. In addition, current studies were only based on cross-sectional data; hence, a longitudinal study would be adequate for new insight. Finally, future meta-analyses for leadership study should also consider other databases such as Science Direct in journal selection to minimize the possibility of failing to identify all published journals in the related area.

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BAFE005:
**STUDENTS' PERCEPTION OF ONLINE LEARNING DURING COVID
19 PANDEMIC: A SURVEY STUDY OF QUANTITY SURVEYING
STUDENTS IN MALAYSIAN PRIVATE UNIVERSITY**

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ABSTRACT

Higher education institutions had facing a critical period, the Covid-19 pandemic disrupted teaching and it changed the learning methods from face-to-face classes to online learning. It might be a great challenge in fulfilling the needs of students' learning especially those programs that highly depends on hands-on practical classes. This study aims to examine the students' perception of online learning for the 10 major subject of Quantity Surveying program during the Covid-19 pandemic. After 3 semesters of fully online learning, a cross-sectional survey was conducted through online questionnaire among 350 Quantity Surveying students from a private university to further examine the perception of online learning and its emotional health during the Covid-19 pandemic. Study shows that the pandemic has affected the teaching and learning effectiveness of 10 major subjects where Measurement (58%), Structure (53%), Construction Technology (56%) have the lowest satisfaction from students. Those subjects are project-based learning and require hands-on practical across semesters which is less effective to learn through online. Findings further show that Quantity Surveying students facing high emotional disturbance in overuse of digital technologies (47%), online assessment (67%), less interactive with peers (42%), virtual laboratories (40%). Through the interview, students wish to get academic or emotional supports by the university. Students also expected university consider investing in teacher professional development of their faculty, for them to be updated on effective pedagogical methods. Policymakers and higher education institutions may benefit from these findings when formulating contingency plans and tactics on how to support students during the pandemic.

Keywords: Covid-19 pandemic, Quantity Surveying, Online learning, Emotional

INTRODUCTION

The Covid-19 that happened in whole world for more than 1 year since it was declared a pandemic by the World Health Organization on 11th March 2020 (Pinaki, C. et al., 2020). It had critically affected the education system in all countries and educational institution around the world closed the doors due to the Covid-19 pandemic. According to the report from United Nation (2020), 94% of learners in more than 190 countries in all continents had face the enormous disruption of educational system. The sudden incidents had interrupted the normal teaching practices and universities round the world had to close their campuses down in the early of 2020 and shift all their academic programs online (Bao, 2020). Many universities despite public or private lacked infrastructure and strategies to transition of learning method from physical class to online learning (Zhang, Wang, Yang, 2020).

In order to prevent any break off learning process in the universities, several online platforms to support online learning were available (Nash, 2020). However, the great challenges for universities, professors and students including the logistic, technical, financial, and social problems need to be solve (Lassoued, Alhendawi, Bashitialshaaer, 2020, Peters, et al. 2020). The critical problems were the availability of technology including the electronic devices, the stability of internet and the familiarity with information technology for professors and students in the universities (Naresh et. al, 2016).

The pandemic and the lockdowns to contain it have affected the mental health of people around the world (Pinaki, C. et al., 2020). Many students are suffering from stress and anxiety (Cao et al., 2020; Islam, Bama, Raihan, Khan, & Hossain, 2020). It is clear that the physical learning in the campus, the faculty members easily observe the mental and performance of the students, whether they are in need of something and attempt to take over the situation, which could not be completely possible during online learning.

Some other effects that need to be solve by universities and educators and learning including the limited social interaction and participation, the low engagement during the lesson, the ineffective virtual laboratories had drawn an attention to whole society. Pinaki, C. et al. (2020) had pointed out that lack of studies on how efficiently students can interact with professors and fellow students though various online tools and how effective online assessment techniques are. To respond to the request of Pinaki, Patricia (2020) had conducted the research on the interaction and participation between educators and learners, reported that students prefer face-to-face interaction with professors. Bojovic et al. (2020) had studied the online assessment and showed that professors lack of confidence on online assessment techniques.

According to studies published before the pandemic outbreak (Islam, et al., 2011; Duan et al., 2018). Demographic factors such as gender, age, the program of study, and level of education influence students' commitment to e-learning. Paola, X, et al., (2021) had studied the perception of students from technology-based and non-technology-based programs on the online learning and shows that 15.2% of students with technology background of study say that online learning is more interesting.

From the literatures it can be found that research is more focus on general programs like engineering, medical, business but not specific to certain courses like Civil Engineering course, Mechanical Engineering etc. Due to the different of course structure, the teaching content and teaching methods is different. Hence, it is value to shift the research focus from general to specific course and point out the adaption and perceptions towards online learning.

PROBLEM STATEMENT

The Malaysian construction industry acts a significant role in building up the economy of the country by greatly supporting the gross domestic product (GDP) of Malaysia (Khan, Liew & Ghazali, 2014). It has contributed 4.2% of GDP in the third quarter of 2020 during the Covid-19 outbreak (Department of Statistics Malaysia. 2020). The Construction Industry Development Board (CIDB) has announced that the total value of projects awarded had achieved RM55.3 billion from January to October year 2020, which is the third highest after the agriculture and manufacturing field.

Quantity surveyor as part of construction team which prepare an accurate bill of quantities to be priced by tendering contractors and measure and value any variation that might occur during the progress of the works. The construction projects grow in complexity and size. It required new aforementioned roles and functions to quantity surveyors including the value management, feasibility studies, arbitration, risk management, insurance valuation, etc. Quantity surveying studies encompasses various elements which including laws, economic, management, administration, technology, ICT, operational research, etc. Due to the multiple various elements to be covered in the university, quantity surveying students face a big study workload and pressure. Before the Covid-19 pandemic, face-to-face class conducted, and students can physically attend to the class and contact to professors and peers. During the pandemic, the teaching and learning method shift from physical to online mode which increase the challenges for quantity surveying students. Students certainly have their perception and adaption approaches to online learning during this global health crisis.

The online learning for quantity surveying program is still lack of concentration from researchers. Geoff, H. et al. (2012) had conducted a research to studies the e-learning approach to quantity surveying measurement subject. The researcher had developed e-learning measurement packages utilizing 3D images. It provided conventional approaches by providing students with convenient access to repositories of knowledge and procedure. The exploration had brought significant improvement in the online learning and influence the online learning during the Covid-19 pandemic.

Geoff, H (2012) research more focus on teaching tools that involve the advance technology, however, there are many aspects need to look into especially the challenges of teaching, the psychological health issues of students, the communication and the interaction between educators with students, students with students etc. Neo, S.T. (2018) had conducted a research to study the barrier and solution for quantity surveying students on online learning. The result showed that the major challenge for online teaching is network access for students and followed by quality concern and requiring higher investment of time (Neo, S.T., 2018). Neo's study conducted before the Covid-19 pandemic and the online learning intention for students different from lockdowns period during Covid-19 pandemic. It is important to know student's perception on online and the learning experience after shift from classroom-based education to completely online education.

The purpose of this study was to evaluate Quantity Surveying students' adaption and perception towards online learning during Covid-19 pandemic.

OBJECTIVES

To ascertain the opinion and perceptions of Quantity Surveying students at a private university during the Covid-19 pandemic.

1. To identify the perceptions about online learning for Quantity Surveying major subjects.
2. To identify the mental distortion of Quantity Surveying students during the online learning period.

LITERATURE REVIEW

Learning Theory

Students are required to developed measurement skills in the Measurement module. To develop these skills, they are required to be able to make meaning of the building construction drawings. Based on the different aspects of learning summarised by Merriam et al. (2007), the purpose of learning for "Measurement" module are: 'to develop capacity and skills to learn better and to construct knowledge'. These purposes fall under the Cognitivist orientation is 'to structure the content of the learning activity', and 'to facilitate and negotiate meaning-making with the learners'-i.e. students.

According to Kolb (1984), to gain genuine knowledge from an experience, experiential learning requires:

1. The learner must be willing to be actively involved in the experience;
2. The learner must be able to reflect on the experience;
3. The learner must possess and use analytical skills to conceptualize the experience; and
4. The learner must possess decision making and problem-solving skills in order to use the new ideas gained from the experience.

Online Education Strategies

Universities in whole world had get a shock and did not get enough time to reflect upon how the new strategies and the associated technologies should be introduced and integrated to their existing setup (Carroll & Conboy, 2020). In order to find out an effective way to get through the pandemic without slow down the progress of education. It is different from self-initiative in choosing the online learning like previously, during the pandemic students force to conduct the online learning and no one exception from this. Bao (2020) was perhaps the first to describe how universities were moving from classroom-based education to online education because of the raging pandemic. Many researchers had focus on using the empirical studies to understand the viewpoint of students, as students are the major component of learning in the education. By referring to perception of students', it can be a useful guideline for universities and educators to improve their online teaching strategies.

Universities are now using innovative strategies to ensure continuity of education for their students (Zhu & Liu, 2020). Online educational platforms, like Google Classroom and Blackboard, allow professors to share notes and multimedia resources related to their courses with students.

Video conferencing tools, like Google Meet, Zoom, and Microsoft Teams, help in organizing online lectures and discussion sessions.

Professors are now delivering course content through various platform by utilize modern electronic devices, video-conferencing software, and social media to teach their courses. Online educational platform was rapidly developed to fulfill the requirement of online classes during Covid-19 pandemic. The online educational platforms allow students to turn in their assignments and professors keep track of the progress of the students. The video conferencing tools like Google Meet, Zoom, help in organizing online lectures and discussion sessions. Students and lecturers can conduct the meeting and discussion easily by implementing the conversation tools during their lecture. Some universities are also disseminating course material through their websites (Chatterjee & Chakraborty, 2020). The development of online tools and platform had much increase the conveniences of online teaching and learning.

Health And Social Issues

Besides learning technology, the inner feeling of students always a vital point to concern by universities and educators. Students felt alone during the online learning when they miss the help of their peers in classrooms and laboratories and access to library (Patricia, 2020). Students felt isolate and felt alone when they cannot attend to the physical classes. The covid-19 pandemic and the closing down of the university campuses have affected the mental health of students (Savage et. al, 2020). Empirical studies conducted in Bangladesh (Khan et al., 2020), China (Jiang, 2020), France (Essadek & Rabeyron, 2020), Greece (Kaparounaki et al., 2020) found that a large proportion of students are suffering from mental disorders of varying severity. Many students reported suffering from depression, anxiety, distress (Essadek & Rabeyron, 2020), and even suicidal thoughts (Kaparounaki et al., 2020). Students worried about both the pandemic in general and their careers (Hasan & Bao, 2020). Lack of motivation and negative emotions (Patricia, 2020) make it difficult for many students to focus on online learning.

Quantity Surveying Learning During Pandemic

Online teaching is hardly a new feature in Malaysia private higher education and has been developed to supplement classroom teaching. However, during the Covid-19 pandemic, it has become the main mode of instruction and is being widely used in almost all colleges and universities in Malaysia. Many lecturers quickly adapted to using digital tools and incorporate effective online lessons and engagement into its curriculum, study reported that the learning curve has been steepest for students who were required to attend hands-on courses such as design, architecture, engineering, etc. (Pouline, C.L., et al., 2021). According to Pouline (2021), many do not translate the learning in these disciplines so well through online learning because these disciplines were mostly designed to be hands-on or more experiential learning centric. Demonstrations from all views and studio time to work on projects were often the key activities compared to pre-recorded lectures and word-based assignments (Pouline, C.L., et al., 2021). For Quantity Surveying syllabus, the most significant subject like measurement, technical drawing, construction materials, construction technology, computer-aids etc. are designed to be hands-on rather than through online learning.

METHODOLOGY

Study Population

To examine the students' perception of online learning during the outbreak of Covid-19, an exploratory study using online survey was conducted. This study was carried put between Jan 2021 till April 2021, with a targeted respondent from a private university in Klang Valley area. The samples were selected using purposive sampling. Students from undergraduate program of Quantity Surveying were invited to participated in the survey.

Quantity surveying program are the second largest enrolment of students in the Faculty of Engineering and Science which just behind the Civil Engineering program. Quantity surveying implement the project-based learning across the semesters. To that end, hands-on classes remain essential practices on the online learning of Quantity Surveying program despite the outbreak of Covid-19.

A survey invitation through google forms was sent to a total 400 students via university portal and the assisted by the program lecturers with periodic reminders. Participation in the survey was voluntary and the students' consents were obtained prior to the start of the survey. During this process, participants were assured regarding the confidentiality of their responses.

Study Instrument

The instrument of this study consists of an online questionnaire by using a five-point Likert scale, the contents adapted local researcher Zakaria, N. et al. (2006) whereby they had studied the expectations from the employers in the construction industry of the level of knowledge. After sorting out the questions that existed in the questionnaire of Zakaria, N (2006), the researchers along with the expert judgement have taken the decision to only include 10 major subjects for Quantity Surveying students including measurement, English for professional communications, understanding working drawing, construction technology, analysis of price, estimating, professionals practice and contractual procedures, design cost evaluation, structure, construction and building economics. Students of Quantity Surveying have concentrated on those subjects during the face-to-face classes before the pandemic, however, during online learning students have different perception and it will affect the competitiveness of students after graduate from the program.

Section one encompassed basic demographics, gender, year of study. In section two, respondents were asked to rate their experience on online learning on the 10 major subjects. In addition, respondents were tasked to compare using five-points Likert Scale (1= unsatisfied, 5=very satisfied) with the online learning mode. Section three, respondents were asked to rate their health issues including the depression, anxiety, distress levels for Quantity Surveying students during online learning period. The five-points Likert Scale (1=Strongly disagree, 5= Strongly agree) to examine students' psychological situation.

The questionnaire was designed in English language. Initially, the questionnaire was piloted for 10 faculty members and 30 students to ensure appropriate wording, and areas were checked for improvements. The reliability test for Section B: Satisfaction for 10 Major Subjects with the value of 0.763, and the reliability test for Section C: Health Issues During Pandemic with 0.656. After communicating and obtained the feedback from the respondents on the wording, amendment had been done to improve the quality of the questionnaire. The researcher sends the revised questionnaire to 3 faculty members before finalising the questionnaire. The pilot test was necessary to prevent any unwanted bias and error happen in the data collection.

The qualitative method used data collected from students that participated in the questionnaire survey. The interview meetings include around 10 students which are 3 students from Year One, 2 students from Year Two, 3 students from Year Three and 2 students from Year Four. The students participated in the interview had experienced online learning for two long semester and one short semester. All the subjects in the Surveying Department had been taught in online mode for the past two long semester. Hence, the information collected from the online interview with students to reflect the perception, challenges of their experiences and to recommend solutions for the future.

Data Treatment And Analysis

The computed data entry was transferred into Statistical Package for Social Sciences (SPSS) version 20.0 and analysed through a univariate statistical analysis to provide a synthetic description of the basic features. The purpose of the study is to enhance understanding of perceptions of students and find out the effective was to solve the problems.

After the interview, all the qualitative data will be transfer to wording and analyse by using nVivo software. For about 30-45 minutes interview, the researcher needs to use 3-4 hours to transfer all the voice record into wording. The data further summarized and categorised into specified themes and codes. Finally abstracted the actual thinking from the data in order to explain the actual thinking from the respondents.

FINDINGS AND DISCUSSION

Demographic Characteristic of Samples

The paper examines the Quantity Surveying program from a private university students' perception of online learning for 10 major subjects and the health issues during the Covid-19 pandemic. With the online questionnaires designed and distributed, a total 350 surveys were collected between Jan 2021 till April 2021. On the overall, 46.5% (n=163) respondents were male, 54.3% (n=187) were female students.

As shown in Table 1, most respondents were in year one 133 (38%), followed by year two students 88 (25%), year three students 81 (23%) and the least is year four 48 (14%).

Table 1: Distribution of Study Sample according to Demographic Characteristics

Demographic Characteristic		QS Students at Private University	
		Frequency	Percentage (%)
Gender	Male	163	46.5%
	Female	187	54.3%
	Total	350	100%
Year of Study	Year One	133	38%
	Year Two	88	25%
	Year Three	81	23%
	Year Four	48	14%
	Total	350	100%

Reliability Test for Post-Research

Table 2 shows the reliability values for post-research which involved 350 QS students. The reliability values for Section Two "Satisfaction of 10 Major Subjects" is 0.85, the value for Section Three "The Health Issues during Pandemic" is 0.76. All the values are over 0.72 which means the research instrument is considered reliable and allowed for further analysis.

Table 2: Reliability Test for Post-Research

Scale	Item	Cronbach's Alpha
Satisfaction for 10 Major Subjects	10	0.85
Health Issues During Pandemic	6	0.76

Students' Perception of Online Learning

In this study, students were asked to give their perceptions on 10 major subjects for Quantity Surveying program on online learning. Table 3 shows the satisfaction level for online learning, the Professional Practice and Procedures have the highest satisfaction level with the mean value of 3.42, the following subject that having the high level of satisfaction is Estimation with the mean value of 3.35. The third high level of satisfaction was English for Professional Communication with the mean value of 3.33. From the top 3 subjects that have the high satisfaction level share the similarity in the syllabus structure where more theoretical contents during the lecture.

On the contrary, the three subjects with mean value less than 3.00 which means students less satisfied or unsatisfied when studied those subjects through online platform. The most unsatisfied including Measurement (mean value=2.88), Structure (mean value=2.90), and Construction Technology (mean value=2.93). It can be notifying that those unsatisfied subjects have the similar characteristics that required hands-on and project-based learning across semester. Students faced difficulties to learn those practical subjects through distance learning approach.

Table 3: Perception of Quantity Surveying Students' Online Learning During Covid-19 Pandemic

Subject	Very Satisfied	Satisfied	Neutral	Less Satisfied	Unsatisfied	Mean
Professional Practice and Procedures	12%	37%	24%	15%	12%	3.42
Estimating	15%	35%	22%	17%	11%	3.35
English for Professional Communication	13%	28%	34%	15%	10%	3.33
Contractual Design Cost Evaluation	14%	22%	29%	21%	14%	3.32
Analysis of Price	18%	27%	23%	20%	12%	3.22
Construction and Building Economics	12%	33%	21%	19%	15%	3.14
Understand Working Drawing	15%	23%	17%	28%	17%	3.01
Construction Technology	11%	19%	14%	32%	24%	2.93
Structure	9%	18%	20%	31%	22%	2.90
Measurement	7%	12%	23%	35%	23%	2.88

The Health Issues for Quantity Surveying Students during Covid-19 Pandemic

Table 4 shows the distribution of study sample according to health issues among Quantity Surveying students during the Covid-19 pandemic. Respondents were asked to associate their psychological feelings about online learning experience during the learning period, assessment, virtual laboratories, the interaction with peer. From the result, 67% (Mean value=3.53) of students agree and strongly agree that online assessment creates more anxiety compared to traditional forms. Followed by the overuse of digital technologies may cause the psychological disturbance with 47% (mean value=3.42) agree and strongly agree on this statement. The less physical interaction with peers 43% (mean value=3.38) and virtual laboratories 40% (mean value=3.25) are the 3rd and 4th reasons that cause the psychological disturbance to Quantity surveying students.

Table 4: The Health Issues for Quantity Surveying Students during Covid-19 Pandemic

Subject	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Mean
Online assessment creates more anxiety than traditional forms of assessment	5%	13%	15%	42%	25%	3.53
Online education is leading to overuse of digital technologies	12%	21%	20%	32%	15%	3.42
Less physical interaction with peers creates more anxiety especially facing problem in the study	12%	18%	27%	28%	15%	3.38
Virtual laboratories are leading to anxiety when cannot follow the instruction from the lecturers	8%	16%	36%	28%	12%	3.25

Online education is leading to phobia of losing internet connection	9%	13%	37%	23%	18%	3.22
Excessive screen time is causing stress and affecting sleep	8%	17%	36%	26%	13%	3.18

The Perception of Quantity Surveying Students on the Solution

Students were asked to give open responses regarding the perceptions and solutions about online learning platforms. The interview was conducted through zoom meeting platform for 30 minutes to 1 hour. Students expressed several expectations for the solutions from institution, faculty members, lecturers. The expected solutions as follows:

“I felt lecturers should find more attractive way to engage students in during the lecture.”

“Lecturers should improve the skills of using technology.”

“Faculty members should always keep in touch with students during the pandemic, more guideline and well-being care should provide from faculty and department.”

“Recently I had vision problems, I am demotivated, my concentration on learning and my desire to study are decreased, I hope lectures can help me in my academic study.”

“A combination of online and classroom learning would be incredibly positive for me as a student. The only difficulty I have is the limited internet access.”

“The virtual laboratories are had make me felt anxiety, I can’t follow the instruction from lecturers, and I faced problem when answering the questions. I wish lecturers can give me more guidance”.

“I prefer learning in class because electricity problems do not interrupt the lesson.”

“The prolonged usage of technology devices causes us physical and mental exhaustion; a combined learning methods should use in the university.”

“The online assessment had caused the unfairness; case of cheating happens during the online assessment and is unfair to evaluate the actual performance of students.”

Through the analysis from the interview script, students felt that lecturers should improve in the technology skills and teaching methods during the online period. Students also expected faculty members to provide necessary support and guideline to prevent any miscommunication during the Covid-19 pandemic and affected the learning process. Besides that, issues highlighted by students were mental exhaustion and unfairness of online assessment during the online period. They prefer to have combination of online and classroom learning to maximize the effectiveness of learning. Through the interview also can notified that student wish lecturers and faculty members to provide more attention and well-being care to students.

Discussion

The finding shows that the Quantity Surveying students have less satisfaction in the subject like Measurement, Structure, Construction Technology which need them to hands-on solving problem. According to Yokomoto and Ware (1982), most engineering students are sensing learners. In addition, students at college age and older are also visual learners (Barbe and Milone, 1981; Richardson, 1984). Dunn and Carbo (1981) finds that engineering students are more likely to be active than reflective learners. Based on the previous researchers and literature had explained that providing opportunities for students to do something active besides transcribing notes and hands-on solving actual problem is important to Quantity Surveying students.

From the research result reveals that students facing mental stress problem during the online learning period. Shifting from the usual face-to-face classes to online learning amid the pandemic, a student's learning experience can be stressful, let alone the concern of catching up on coursework in the midst of the pandemic. Pouline, C.L., et al. (2021) had mentioned that the Covid-19 pandemic will continue to influence students' emotional profoundly; meanwhile, emotional serves a crucial role to help them deal with their continuity learning and combating the epidemic. It is a critical period that cause the high stress level for undergraduate students, government, health professionals, higher education institutions, students' organisations and NGOs should collaborate in the process of designing timely and efficient support services for students.

Through the interview, students had pointed out that lecturers should improve in the skills of using the technology when teaching and more immediate feedback and clearer guideline provide to students. Besides, lecturers need to give more attention to students during the online learning to provide necessary helps. Faculty members also need to take care of students during the pandemic especially their mental health and academic support. The virtual laboratories were commented as ineffective teaching methods during pandemic as students hardly can hands-on involve and solving the problem. Another major point that pointed out by students is the online assessment, it causes the high learning pressure to students and unfairness. It is necessary for university and faculty to find out more effective way to assess students during the pandemic. It is apparent that during pandemic, universities should introduce different support measures for their students in order to minimise their distress, especially in the aspects of academic, socio-economic, and emotional well-being. When summarising the above findings as a basis for universities decision making on the next term, it is important for the authorities to take note of the recognition by majority of students who required academic or emotional supports by the university. The online learning will become essential in the future, university should consider investing in teacher professional development of their faculty, for them to be updated on effective pedagogical methods with the use of online technologies.

CONCLUSION

A total of 35 participated in the study, 46.5% (163) were male students, 54.3% (187) were female students. Majority of the respondents from Year 1. The study found out that majority of the respondents satisfied with the theoretical subjects like Professional Practices and Procedures, Estimating and language subjects. However, those hands-on and practical subjects like Measurement, Structure, Construction Technology had the low level of satisfaction. It is clearly showing that Quantity Surveying students face psychological disturbance during the Covid-19 pandemic. Students felt anxiety and stress when overuse of digital technology, online assessment, less interaction with peers, virtual laboratories. Through the interview, students hope that university can provide more support on the academic and emotional. For the higher education institutions around the world to be competitive again, it is imperative that institutions listen to students' needs and concerns.

Limitations and Future Research

Although the current study has a commendable contribution to the literature and practice, however, this study also has a few limitations which could be the future directions. First, the study is based on one university, it is hard to generalise the result to whole Malaysia, future studies should include more universities to get an in-depth comparison of online learning experience. Second, the global market for online learning is expected to set to grow at high speed especially after the hit of pandemic worldwide. In that case, future research could further identify students' intentions and reasons to continue online learning.

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BAFE010:
**THE MODERATING EFFECT OF EMOTIONAL INTELLIGENCE,
IDEALIZED INFLUENCE AND INTENTION TO PERFORM AMONG
ACADEMICS IN MALAYSIAN RESEARCH UNIVERSITIES
CONCEPTUAL PAPER**

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Abstract

Academics face significant obstacles in higher education institutions, and academics' responses with respect to their intention to perform, leaders' influence, and leaders' emotional intelligence are critical. The purpose of this study is to examine academic leaders' idealized influence on subordinates' intention to perform and how these intentions are influenced by leaders' actions. The study hypothesized that leaders' idealized influence and subordinate intention to perform will be moderated by leaders' emotional intelligence, based on attribution theory and social exchange theory.

Keywords: Emotional intelligence, idealized influence, intention to perform, academics

BAFE026:
**LEAN AWARENESS AMONG EDUCATORS OF MALAYSIA HIGHER
EDUCATION INSTITUTIONS (HEIs)**

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Abstract

The concept of Lean was first introduced in a century ago but it doesn't receive a great attention until Toyota Company successfully implemented Lean in its manufacturing. Since then, the study on Lean has been increase and today it is widely being implemented to various industries including HEIs. Although it is not difficult to see many cases of companies from diverse industries adopting Lean practice nowadays, yet successful cases on Lean implementation from those companies are rare. Many researches claimed such failure of Lean implementation was due to the fact that companies are not ready for the Lean adoption. To make it worst, the strike of COVID19 pandemic has put all companies from different industries in an unforeseen situation and HEIs is not exceptional. In order to sustain, HEIs are now reassessing their business in strengthening competitive advantages that bring them to another quality level. As such, Lean can be said as the manipulator behind this in helping HEIs for its value maximization and waste transformation into value added components for continuous quality improvement. Anyhow, adopting Lean practice without fully understanding the readiness of Lean in HEIs may hinder its success in implementation. Based on this, it is important for HEIs to measure the awareness and attitudes among educators towards Lean since implementation of Lean incur cost. This study is therefore administered on survey among educators from Malaysia public and private HEIs. From the findings, it showed a low level of Lean awareness and readiness as majority of educators are unfamiliar with Lean term. Nevertheless, 90% of the educators have interest to know more on Lean in HEIs and 77% of them have faith on implementing Lean in HEIs. They believed that Lean can help in waste reduction and improve on HEIs quality. Among the wastes, educators ranked unnecessary movement and processes, lengthy meeting, lack of empowerment, and malfunction of equipment as the top wastes in HEIs. Furthermore, they perceived the largest block that hinder implementation on Lean are limited knowledge as well as resistant to change. Creating a successful Lean culture thus required real commitment from employees and management in HEIs to boost strong awareness and thorough understanding on Lean so as to maximize its benefits. Successful implementation of Lean as a strategy to improve on HEIs quality is therefore hinged upon the order from understanding, readiness, to adoption or else Lean itself may be just a trend.

Keywords: Lean, Higher Education, Continuous Improvement

BAFE029: ONLINE LEARNING ACCEPTANCE AMONG SCHOOLTEACHERS: WHAT HAS ACTUALLY HAPPENED?

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Abstract

As the largest and longest disruption to education, COVID-19 pandemic has forced most institutions and schools all over the world to immediately switch to the online mode. Malaysia is of no exclusion. Learning sessions were conducted with the teachers and students hopping on various online platforms and tools instantly. Since the introduction of the Teaching and Learning at Home (PdPR) by the Malaysia Education Ministry in 2020, online learning has become one of the methods used to ensure the smooth implementation of PdPR. However, high number of complaints received from parents claimed that the teachers failed in implementing PdPR. These failures have put emotional pressure not only on students but also to parents. Thus, this research is intended to find out the determinants which affect the schoolteacher's acceptance of online learning and how their execution of online learning is determined by these determinants. Together with Computer Self-Efficacy and Computer Anxiety, the Unified Theory of Acceptance and Use of Technology (UTAUT) has been adopted to study the acceptance of online learning among the Malaysian schoolteachers. A total of 300 questionnaires will be distributed to schoolteachers for data collection. The variables and the relationships between its dimensions will be analysed using SPSS software. It is hoped that the results of the study can help policy makers, school authority and parents to better understand the situation and put a proper plan in implementing an effective online learning mechanism for teachers as well as students.

Keywords: Online Learning, UTAUT, School Teachers, Self-Efficacy, Computer Anxiety

INTRODUCTION

Wuhan in China struggled with the new coronavirus disease (COVID-19) at the end of 2019. (Chahrour, Assi, Bejjani, Nasrallah, Salhab, Fares & Khachfe, 2020). Wuhan took exceptional measures and shut down the whole city on January 23, 2020, to reduce the danger of disease spread (Xiang, Yang, Li, Zhang, Zhang, Cheung & Ng, 2020). COVID-19 has already spread to a number of additional nations and has become a global pandemic (Liu, Yue & Tchounwou, 2020). Consequently, this virus has put billions of people in quarantine and forced the world under serious lockdowns. COVID-19 has been declared as an imminent risk and a serious security threat to the lives of all Malaysians by former Prime Minister Tan Sri Muhyiddin Yassin. Due to this, the Malaysian government has issued phase by phase Movement Control Order (MCO) and followed by Conditional Movement Order (CMCO). On 1 April 2020, more than 2900 confirmed cases of COVID-19 were recorded (Ministry of Health, 2020). All schools, colleges and universities were forced to close and discontinued the face- to-face teaching and learning because of this COVID-19 pandemic as social distancing is important during this period (Pokhrel & Chhetri, 2021).

E-learning is most commonly seen at universities or institutions that provide online or distant learning courses. However, because of this pandemic, schools also need to change the traditional face- to-face teaching and modified the syllabus to be conducted online or via remote learning

(Badiozaman, Leong & Wong, 2020). Running online learning becomes a new challenge for both students and teachers. Teachers have considerable difficulties in adjusting to online teaching while still maintaining a minimal level of communication with students and supporting their learning and growth. However, it is unclear to what degree instructors have seized these problems and which factors are most important in dealing with online learning. The concerning issue in using the e-learning is to build digital environments that are better and able to support or to respond to student's problems and their associated emotions, such as doubts, without the requirement for a teacher to be on-call to assist children (Lodge, Kennedy, Lockyer, Arguel & Pachman, 2018). Internet connections and high performance e-learning technology are the shortage experienced by many educational institutions. Moreover, some students are having difficulties to access the online materials as they lacked self-motivation and experienced low level of computer literacy (Garrison, 2011). Thus, this study is essential because it will help to examine the difficulties and problems faced by schoolteachers during lockdown because of pandemic COVID-19 and can provide information for Malaysian government and other parties on how to support and ease the online teaching and learning in Malaysian schools. This paper is arranged in the following manner: the statement of problem and research question are presented next, followed by review of literature and its conceptual framework, research methodology, contribution and its conclusion.

According to a report from UNESCO (One Year Into COVID-19 Education Disruption: Where Do We Stand, 2021), the COVID-19 pandemic has entailed the largest disruption to the education system where it affected 94% of the world's student populations in more than 190 countries including Malaysia (Mansor, Zabarani, Jamaludin, Mohd Nor, Alias & Mansor, 2021). Consequently, a sudden shift to online learning is essential for education system around the world to ensure the continuity of learning. In Malaysia, when the government, through the Ministry of Education urged the higher education institutions and schools to continue learning online during the Movement Control Order (MCO) period in 2020, learning sessions are conducted with the students using online platforms (Ministry of Education Malaysia, 2020). Even though the implementation of online learning with a mix of technologies provides immediate solutions for most schools in other developing countries, the Malaysian schools have faced some challenges from this ad hoc implementation as Malaysia has never experienced such extensive learning disruption. Thus, the introduction of Teaching and Learning at Home (PdPR) by Education Ministry in 2020 has resulted in a number of complaints from the parents until now. Parents claimed that PdPR failed as there are inconsistent used of online learning platforms by the teachers in handling their PdPR classes, including extended classrooms lasting until night-time due to inconsistency in schedules. At the same time, PdPR only cares about student attendance rather than the quality of education delivered (PdPR: Challenging for Everyone Involved, 2021). From all these reviews, the reformulation of the home-based pedagogy is much needed as these failures have put emotional pressure on students, parents and also teachers (NST Leader: Future of Education, 2021).

Attention raised by many researchers previously to study the online learning impact and acceptance during COVID-19 has focused predominantly on student's perspective (Chatti & Hadoussa, 2021; Selvanathan, Hussin & Azazi, 2020; Nur Haiza & Nur Naddia, 2020). However, little is known about the teachers' struggle of online learning preparation as well as implementation especially involving the Malaysian schoolteachers. Furthermore, most of previous studies focused on the higher education teaching staff (Zalat, Hamed & Bolbol, 2021; Tajuddin, Romly, Hamzah, Hussin & Muda, 2021; Tseng, Lin, Wong & Liu, 2019; Gunasinghe, Ab Hamid, Khatibi & Azam, 2019). Therefore, schoolteacher's acceptance for executing the online learning during this sudden transition phase should not be overlooked because teachers also are one of the main factors that contribute to the success or failure of online learning process. Besides, when considering the overall opinion of teachers about online classes in other countries such as in India, it was found that teachers still have mixed opinions about the online learning implementation (Kulal & Nayak, 2020). In connection with this, the evaluation of Malaysian schoolteachers' acceptance of online learning is needed as the researchers believe that this will have an empirical contribution towards online learning implementation from the Malaysian perspective. This research will adopt the Unified Theory of Acceptance and Use of Technology (UTAUT). This is aligned with prior studies that proved the UTAUT model can explain the acceptance of online learning technology (Chatti & Hadoussa, 2021; Olasina, 2019; Mahande & Malago, 2019; Alharbi, Alotebi, Masmali, & Alreshidi, 2017).

Considering the effective use of online learning is crucial to the schoolteachers in Malaysia, it is important to understand the different factors that influence schoolteachers' acceptance of

conducting online learning. Thus, this study will extend the UTAUT model by adding two new constructs. Past studies have shown that self-efficacy had a significant influence with the other variables in the model of E-Systems including E-Travel, E-Banking and E-Learning (Fauziah Adli, Nikos Joshua & Pujani, 2014; Chen, 2014). In addition, Chen (2014) revealed that one's self-efficacy and his acceptance of technology were found to be related to their online learning performance. In addition, computer anxiety is similar to self-efficacy in which it is a factor that relates to the emotional aspect of technology usage. While self-efficacy relates to judgments about ability, computer anxiety is a negative affective reaction towards computer use (Nuri Abdalla, 2019). Previous findings highlighted that computer anxiety is one of the main factors that can affect the instructor's technology acceptance and usage (Yang, Mohamed & Beyerbach, 1999; Agarwal & Karahanna, 2000). Therefore, this study attempts to examine the relevance of computer self-efficacy and computer anxiety with the schoolteachers' online learning acceptance in the current COVID-19 pandemic. More specifically, the researchers intend to measure the acceptance of online learning among Malaysian schoolteachers during COVID-19 pandemic by extending the UTAUT model with computer self-efficacy and computer anxiety, leading to the following research question:

RQ1 - How was the acceptance of online learning implementation among schoolteachers in Malaysia?

LITERATURE REVIEW

Concept of E-Learning

Online learning which is often used interchangeably with e-learning is defined as a form of distance education that involves using technology as the mediator of the learning process, and that teaching is entirely delivered through the internet (Siemens, Gašević & Dawson, 2015). E-learning includes web-based education, digital learning, interactive learning, computer-assisted teaching and internet-based learning (Lara, Aljawarneh & Pamplona, 2020). According to Zalat, Hamed and Bolbol (2021), online e-learning is described as learning experiences using various electronic devices (e.g. computers, laptops, smartphones, etc.) with internet availability in synchronous or asynchronous environmental conditions. The synchronous learning environment is structured in the sense that students attend live lectures, there are real-time interactions between educators and learners, and there is a possibility of instant feedback, whereas asynchronous learning environments offer flexibility to the students in a self-paced manner. In such e-learning environment, students will access the class materials shared by teachers anytime. Indeed, e-learning has generally been considered as an important educational source for improving the effectiveness and efficiency of learning services, because of its availability, low cost, ease of use, and interactive nature (Idris & Osman, 2015).

Online learning is actually not a new concept in the education world as many universities around the world had implemented online learning even before the COVID-19 outbreak (Moy & Ng, 2021). In Malaysia, e-learning played as a supporting role in the classroom before the COVID-19 pandemic. Suddenly, all that changed after lockdown hit Malaysia in the early 2020 where online learning was no longer an added benefit but became an essential tool for keeping the Malaysian students educated during a period of uncertainty. Furthermore, the concern now is not about whether online learning methods can provide quality education, it is rather how academic institutions will be able to adopt online learning during this tough time (Carey, 2020).

UTAUT Theory

Behavioral theories about people's intentions have provided the theoretical basis for the development of models of technology adoption and acceptance (Venkatesh & Davis, 2000). This include the eight original models and theories of individual acceptance that are synthesized by Venkatesh, Morris, Davis and Davis (2003) which are Theory of Reasoned Action (TRA), Technology Acceptance Model (TAM), Motivational Model (MM), Theory of Planned Behavior (TPB), Combined TAM and TPB (C-TAM-TPB), Model of PC Utilization (MPCU), Innovation Diffusion Theory (IDT) and Social Cognitive Theory (SCT).

However, based on the conceptual and similarities across models, a single model is formulated named as Unified Theory of Acceptance and Use of Technology (UTAUT) which is considered to be the more studied theory. This is due to the advantages of UTAUT as being a general

model that have been developed to explain human adoption behaviour and can give great explanatory power for the intention to use a technology by having a high number of constructs (Chatti & Hadoussa, 2021). There are four main constructs integrated into this theory, namely Performance Expectancy, Effort Expectancy, Social Influence and Facilitating Conditions. UTAUT theory considers the first three constructs (Performance Expectancy, Effort Expectancy and Social Influence) are direct determinants of behavioural intention to use the technology, whereas the Facilitating Conditions are direct determinant for use behaviour. Four moderating variables (Age, Gender, Experience, and Mandatory or Voluntary Use) are set to moderate the influence of the independent variables in the intention to adopt the technology (Venkatesh et al., 2003).

Gender roles have a strong psychological basis and are enduring. Age has an effect on attitudes. Effort is expected to be more important in the early stages of new behaviour and voluntariness of use shows if the usage is voluntary or mandated. In this research, the variables explaining the Intention to Use and Actual Use of the UTAUT were grouped into a single variable called Online Learning Acceptance. The present study will not retain the moderator variables. Thus, the research model includes a dependent variable: Online Learning Acceptance, and the independent variables: Performance Expectancy, Effort Expectancy, Social Influence and Facilitating Conditions and two extended independent variables namely Computer Self-Efficacy and Computer Anxiety (Figure 1).

Performance Expectancy (PE) - Independent Variable 1 (IV1)

Performance Expectancy (PE) is the degree to which an individual believes that utilizing technology would improve his or her job performance. According to Venkatesh *et al.* (2003) and Venkatesh, Thong and Xu (2012), PE is defined as “the degree to which using a technology will provide benefits to consumers in performing certain activities” or “the degree to which the user expects that using the system will help him or her to attain gains in job performance”. Users may perceive e-learning as valuable if it allows them to accomplish their aims and objectives which consequently will influence the users’ satisfaction and their intention to use it relentlessly (Alwahaishi & Snášel, 2013; Bere, 2014).

This independent variable has consistently been the most significant variable of behavioural intention in many studies either in a mandatory or voluntary setting. In a previous study conducted by Loh, Ahmad and Sing (2016), PE was a factor to teachers in Perak to adopt technological element, such as interactive whiteboard, in teaching. This variable has a positive impact on the intention to use the information communication technology (ICT). Similar findings were found in another study of Tosuntas, Karadağ, and Orhan (2015), which concluded that PE has a positive impact on the adoption. A study conducted by Pullen, Swabey, Abadooz and Sing (2015), was intended to find the relationship between PE and the adoption of mobile technology in teaching among pre-services teachers in Malaysia. The results have shown a similar positive relationship as well. In short, teachers believe that using technology in education will bring benefits to enhance their performance. Therefore, Performance Expectancy is a significant forecaster of the behavioural intention to accept and use of digital technology in education. Thus, in this study,

H1: There is a positive relationship between Performance Expectancy and Online Learning Acceptance among Schoolteachers in Malaysia.

Effort Expectancy (EE) – IV2

Effort Expectancy (EE) is the level of simplicity/comfort associated with the use of a particular technology. As is defined by Venkatesh *et al.* (2012), Effort Expectancy is “the degree of ease associated with consumers’ use of technology”. This variable is considered as a very significant factor because it helps users to assess the extent of efforts required in using a particular technology (Al Awadhi & Morris, 2008). In the educational context, Lowenthal (2010) defines EE as the degree of believing that e-learning system is perceived as easy to use among users. If utilizing an e-learning system is perceived as difficult for which requires enormous efforts, users may not feel satisfied and may stop their usage. Kechine, Pascot and Bytha (2014) added that users are more inspired to adopt technologies that they perceive as easy to use.

In a study conducted by Venter (2015), EE had a positive relationship with the intention to use a software in classroom for teaching and learning. Another studies of Tosuntas *et al.* (2015) and Pullen *et al.* (2015) have also found a positive relationship between EE and intention to use of technology. However, EE is found to have a negative relationship with intention in Ouedraogo's (2017) study. In this study, teacher in Sub-Saharan African countries felt that to digitise their course materials and to prepare their presentation slides demanded significant investment in their time and money. This has affected their acceptance of technology use in education. Nevertheless, many other previous studies like Moran, Hawkes and El Gayar (2010), Teo and Ursavas (2012), Venkatesh *et al.* (2003) and Wong, Russo and McDowall (2013) have found that Effort Expectancy is significant towards the acceptance of technology in education. The literature uncovers that this variable is critical in assessing the users' acceptance of digital technology. Thus,

H2: There is a positive relationship between Effort Expectancy and Online Learning Acceptance among Schoolteachers in Malaysia.

Social Influence (SI) – IV3

Social Influence (SI) is the degree to which an individual perceives that others (e.g., family and friends) believe he or she should utilise a specific technology. Venkatesh *et al.* (2012) define SI as “the extent to which consumers perceive that important other, like family and friends, believe they should use a particular technology. In C-TAM-TPB, Theory of Planned Behaviour/DTPB, Technology Acceptance Model 2 (TAM2), Theory of Reasoned Action (TRA) models, SI is described as Subjective Norm (SN) which refers to the same idea that the attitudes of others influence behaviour (Bere, 2014). This is an important factor of the e-learning usage as SI has shown the influence on individual's usage of the system and is very significant in assessing users' behaviour and acceptance of technology (Riad, Jaradat & Al Rababaa, 2013). Adegbite and Downe (2005) added that SI is an important factor on the behavioural intention of teachers to utilise e-learning technologies which is an influential forecaster for the usage of e-learning system.

A past study conducted by Alshmrany and Wilkinson (2017), in identifying factors influencing the teachers' adoption of technology in Saudi Arabia schools, found no positive relationship between the teachers' intention to use ICT in class. In contrast, Nandwani and Khan (2016) has proved that the relationship between SI and acceptance is significant and positive. The objective of this study was to re-investigate the factors which affect the intention of teachers to adopt ICT in Karachi, Pakistan. In addition, according to Raman and Rathakrishnan (2018), SI has a positive relationship towards acceptance. This was resulted from their study on the level of acceptance among secondary school teachers on Frog VLE (a type of online platform which was designed to enhance teaching, learning, communication and school management). Hence, the hypothesis in this study:

H3: There is a positive relationship between Social Influence and Online Learning Acceptance among Schoolteachers in Malaysia.

Facilitating Conditions (FC) – IV4

Facilitating Conditions (FC) is the level to which an individual believes that an organisational and technical infrastructure exists to support the use of a particular technology. Venkatesh *et al.* (2012) define facilitating condition as “the degree to which an individual believes that an organisation or technical infrastructure exists to support use of the system”. The usage of technology in education can be influenced by these facilitating conditions: the school environment; IT infrastructure and equipment; and the digital content. A school environment comprises of the emotional, academic and social contexts of school and how it is perceived by the community, staff, and teachers. A positive school environment creates a favourable setting for learning and teaching (Blum, 2005).

A study conducted by Alkharang (2014) regarding the adoption of e-learning in higher educational organisations in Kuwait, has found that FC is negatively related to e-learning use behaviour. The unavailability of e-learning in most institutions was at the root of this case even though they had the necessary infrastructure and skill/technical knowledge to use e-learning. In contrast, a research done by Kocaleva, Stojanovic and Zdravev (2015) found that FC had a strong correlation with the behavioural intention. Facilitating Conditions in this research was the most influential factor of the behaviour among teaching staff in accepting and using the e-learning system in a Macedonian

university. It conveys that ICT resources availability and accessibility such as software and hardware are the significant elements to effectively use ICT in education. Hence, in this study:

H4: There is a positive relationship between Facilitating Conditions and Online Learning Acceptance among Schoolteachers in Malaysia.

Computer Self-Efficacy (CSE) – IV5

Bandura (1997) defines self-efficacy as “a belief in one’s capabilities to organize and execute the courses of action required to produce given attainments”. In this study, computer self-efficacy is specifically referring to “a judgement of one’s capability to use a computer” (Compeau & Higgins, 1995). According to Turel (2014), teacher’s computer self-efficacy was significant to the acceptance and use of educational technologies. In this study, Turel (2014) intended to examine the relationship between several perceptions of teachers from a small town in Turkey and their use of educational technology. From the results, teachers were found to have good computer self-efficacy and frequently use computers to perform their task. In addition, Hatlevik and Hatlevik (2018), conducted a study that focuses on various relationships between the teachers’ computer self-efficacy and the use of technology in teaching purpose. They also examined the factors that affected teachers’ self-efficacy in Norwegian schools. The result showed that the relationship between self-efficacy and their use of ICT in teaching is moderately positive. Another study which studied the effects of various factors that could predict the use of ICT in teaching in Croatia shows that computer self-efficacy positively predicts the ICT use of teachers in daily teaching practice (Zubković, Pahljina-Reinić & Kolić-Vehovec, 2017). Hong, Chai, Tan, Hasbee and Ting (2014), who did a study in Sarawak locality, investigated the relationship between computer self-efficacy and attitudes with computer use. They have found that there is a positive significant but weak relationship between teachers’ computer self-efficacy and their use of technology in classroom.

In the context of our study, CSE refers to the level of confidence of teachers to use technology in digital education. The higher the CSE of teachers, the higher the possibility that they will use technology in online teaching. Literature shows that CSE is significant, and a number of past studies have shown positive results. Hence, in this study:

H5: There is a positive relationship between Computer Self-Efficacy and Online Learning Acceptance among Schoolteachers in Malaysia.

Computer Anxiety (CA) – IV6

A review of the literature has shown the many definitions of Computer Anxiety and there is no standard definition for it. Kohrman (2003) stated that “the definition of computer anxiety has changed through the years, illustrating researchers’ progression in understanding what computer anxiety is and what it entails”. The most cited definition of CA is Jay’s definition (cited in Brosnan, 1998). Jay (1981) as cited in Brosnan (1998) defines Computer Anxiety as (a) a resistance to talking about computers or even thinking about computers; (b) fear of or anxiety about computers; (c) hostile or aggressive thoughts about computers. These three components touch on (a) behavior, (b) emotion, and (c) attitude (Brosnan, 1998). Hence Computer anxiety can be described as the emotion that people feel when encountered with the likelihood of needing to use computers.

Some researchers have refined the definition and have used the emotion range or scale of computer anxiety. According to Celik and Yesilyurt (2013), there are four distinct factors of computer anxiety scale: “affective anxiety toward computers; fear of damaging computer; fear of learning to use computer and sense of confidence toward computers”. Other researchers like Chua and Chen (1997) classify CA into conceptual definitions and operational definitions. There are also researches that investigate the relationship of computer anxiety to various demographic variables, such as gender, age, and academic background.

According to Nuri Abdalla (2019), computer anxiety has a negative affective reaction towards computer use. In other previous findings have also highlighted that computer anxiety is one of the main factors that can affect the instructor’s technology acceptance and usage (Yang, Mohamed & Beyerbach, 1999; Agarwal & Karahanna, 2000). This is also supported by Göğüş, Nistor, Riley and Lerche, (2012) who highlighted computer anxiety and computer literacy as the aiding factors to the

intentions to use ICT in education. Tung and Chang (2007) have also reported that computer anxiety has a strong negative impact on the behavioral intention to use online learning courses. Hence in this study, the lower computer anxiety will correspond to the more positive acceptance towards computer use. Therefore,

H6: There is a negative relationship between Computer Anxiety and Online Learning Acceptance among Schoolteachers in Malaysia.

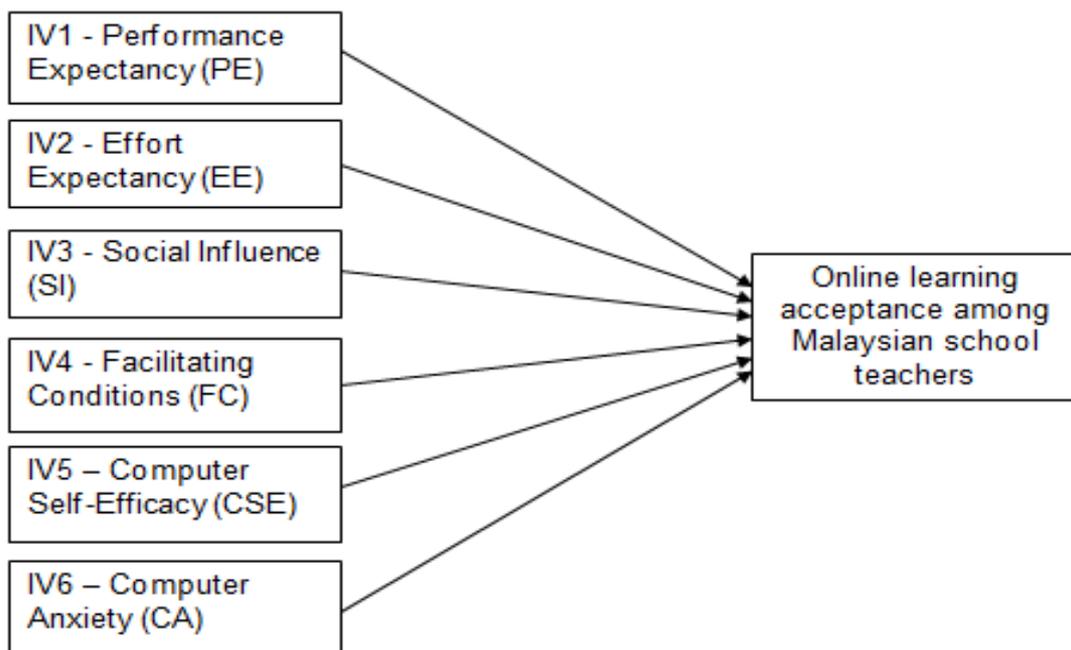
Online Learning (E-Learning) Acceptance - DV

Online Learning Acceptance was defined as 'the demonstrable willingness within a user group to employ information technology for the task it is designed to support' (Dillon & Morris, 1996). In other words, acceptance of e-learning involves acceptance of technology but in different respect. Early research by Rosen, Sears and Weil (1993) posited the lack of teaching experience with technology and the lack of technical supports are the possible reasons for teachers of not use the computer-based in teaching. Besides that, Zhao and Frank (2003) pointed out that the main barrier of technological usage in teaching process is due to the lack of access to internet from home. Even during the COVID-19 semesters, Kulal and Nayak (2020) has reported that teachers still have mixed opinions in conducting the online class in India. In Indonesia, the teachers were not ready with the shifted to online learning as the transition was too sudden with lack coordination (Tajuddin *et al.*, 2021). Although online learning also has become the essential tools in Malaysian education system recently, the question of how well the schoolteachers accept online learning as a teaching medium has not been well-concerned.

However, prior researchers highlighted that a number of factors such as teacher's characteristics (attitude, competency and interaction) (Baber, 2021), voluntary participation of teachers in the course and the positive expectations held before the course start (Hrtonova, Kohout, Rohlikova, & Zounek, 2015) could influence the teacher's acceptance of online learning. In addition, Kocaleva, Stojanovic and Zdravev (2015) in their study revealed that Effort Expectancy and Facilitating Conditions have the strongest effect on the teaching staff's intention to use new technology. The authors also concluded that, Social Influence and Facilitating Conditions are in strongest correlation with the behavioral intention and thereby the most influence factors on the behavior of teaching staff for e-learning system acceptance and usage.

CONCEPTUAL FRAMEWORK

Figure 1: Proposed Conceptual Framework



RESEARCH METHODOLOGY

This research is quantitative in nature and is a cross-sectional study. The objective of the research is to examine the acceptance of online learning among Malaysian schoolteachers by extending the UTAUT model with computer self-efficacy and computer anxiety. The target population of this research is the primary and secondary schoolteachers of the Malaysian government schools. The sample size is estimated involving 300 respondents in order to correspond with the item-to response ratio (Hinkin, 1995). Primary data will be collected using Google Form survey and the snowball technique is used in order to derive sufficient number of respondents. The items and constructs in the questionnaire will be adopted using the five-point Likert scale. For UTAUT variables, the items will be adapted from Umrani-Khan and Iyer's (2009) model while the items for Computer Self-Efficacy and Computer Anxiety will be suggested or validated rigorously by a team of researchers from the university. In addition, data collected will be analysed using statistical software (SPSS) and descriptive statistics will be used to describe and compare variables numerically.

CONTRIBUTION

In this research, the researchers attempted to focus on the educators' resources as to enable the team to better understand the challenges of implementing online learning in order to suggest solutions and recommendations on what works and what not in times of education crises (for example, the continuance of formal education during the COVID-19 pandemic, home schooling, etc.). This is following similar path with many past studies such as Adedoyin and Soykan (2020), Pham and Ho (2020), Starkey, Shonfeld, Prestridge and Cervera (2021) just to name a few, however, contrasting the E-Learning Acceptance Model (ELAM) by Umrani-Khan and Iyer's (2009) approach.

Next, the empirical test of this model will provide an initial ground for further study and reference especially by academic scholars, regulators and policy makers. The instruments adopted in this model are generic to e-teaching/e-learning and the conceptual framework can be further validated to suit the various levels of teaching or learning conditions, crisis situations faced, types of technology or medium involved and most importantly, the actual acceptance rate among educators. Further, this framework will be tested among schoolteachers in various parts of Malaysia, in particular focusing on the primary and secondary government schools on their e-teaching or online learning practice. In addition, this research may have some implications on the adoption of Information Communication Technology (ICT) in Malaysian schools as it provides some insights on getting access to ICT and lifting the burdens faced by teachers and parents to ensure effective online learning programmes delivery so that schoolchildren are not neglected at home during any crises. It is important for school regulators to address the critical factors for e-teaching or online learning acceptance as this has become an alarming issue among parents and community recently.

CONCLUSION

In conclusion, the acceptance rate of online learning among educators are still low as these groups may face a variety of challenges especially in times of education crises like the COVID-19 pandemic. The future of the young generations is at stake if this issue is not addressed properly. In this paper, the researchers made an attempt to explore the big blocks that are slowing down the process of e-teaching or online learning acceptance among schoolteachers. The team discussed the problem statement, its research question, review of literature surrounding the theory and factors or variables to be deployed, its conceptual framework and ended with its scholarly as well as practical contributions.

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BAFE064:
**EXAMINING META-COGNITIVE AWARENESS AMONG TERTIARY
LEARNERS WITH DIFFERENT LEVELS OF READING
COMPETENCY**

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Abstract

Good reading comprehension among learners is capable of producing better and more academically inclined learners. Learners' awareness in the employment of meta-cognitive strategies while reading enables them to perform better academically. The purpose of this study is to examine meta-cognitive awareness among tertiary learners with different perceived levels of reading competency. The research design involves quantitative approach via questionnaire survey. A multi-stage cluster sample of 595 undergraduates from different faculties of a comprehensive university was involved in the research fieldwork. Meta-cognitive awareness is operationalized and manifested by seven related activities implemented by undergraduates while reading academic text. The research results indicate that most of the respondents read the text again to understand what they are reading. Besides, they often critically analyse the information using reference materials and highlight them in the text read. Tertiary learners with different levels of reading competency have similar meta-cognitive awareness while reading academic text. However, tertiary learners with poor perceived level of reading competency more often take their own notes while reading compared to those with average, good and excellent perceived level of reading competency. These research results provide an overview of implementation of meta-cognitive related activities while reading academic text among tertiary learners with different levels of perceived levels of competency. As a result, tertiary learners are expected to enhance their levels of reading competency over time via appropriate meta-cognitive related activities.

Keywords: meta-cognitive awareness, reading competency and tertiary learners.

INTRODUCTION

While observing a two-week medical self-quarantine during the current Covid-19 pandemic, Malaysia's former fourth and seventh prime minister, Dr. Mahathir Mohamad, said, "a nation that reads is a nation that succeeds" (Ong, 2020, para. 1). The general public who is better read can therefore ensure that they are able to contribute toward nation building while also having good critical thinking and problem-solving skills. However, Malaysians generally read less as evidenced by an interim study carried out by the National Library in 2014 whereby it was found that Malaysian readers only read about 15 books a year, compared to 40 books a year by those from developed countries. The current state of not reading enough can be attributed to the lack of awareness in strategies that can be used to enhance reading competency. Good reading comprehension among learners is also capable of producing better and more academically inclined learners. According to Ku et al. (2010), learners' awareness in the employment of meta-cognitive strategies while reading enables them to not only perform better academically but also develop their critical thinking and problem-solving skills that would produce better quality graduates who are ready for the workforce. While Anderson (2003) considers reading as "an essential skill which is the most important skill to master for most learners in order to ensure success in learning". O'Malley & Chamot (1990), Sheorey et al. (2001), Winne et al. (2010), and Zhang et al. (2013) recommended using different strategies to improve learners reading competency.

This study examines the meta-cognitive awareness among tertiary learners with different levels of reading competency. Hence, the hypothesis on the effect of meta-cognitive reading activities on tertiary learners reading competency is examined.

LITERATURE REVIEW

In teaching pedagogy, a teacher focuses on reading out of the four skills involved because it is a cognitive process that allows learners to decode the meaning of the text (Henri, 2010; Javed, Lin & Muhammed, 2015; Belagraa, 2019). In the process of language learning, while the remaining skills comprising writing, speaking and listening are often integrated into the lesson as well (Khorshed & Rassoul, 2018), learners are able to improve the other three skills through reading.

During the teaching of reading, teachers often use these two methods, namely reading aloud that allows learners familiarize themselves with the pronunciations instead of the intended meaning and silent reading that lets learners capture important points from the text in intensive reading and extensive reading (Henri, 2010). Intensive reading is academic reading as it aims for the reader to read with great accuracy (Mughtar, 2019). It will be easier for students to answer questions or translate text because it requires readers to read word by word (Henri, 2010; Mughtar, 2019). The material for this type of reading is mostly hard for learners to read despite the length of the text being short (Mughtar, 2019). Since it is difficult for students to read, they tend to read slower in order to grasp the points of the text. Teachers will encourage their students to use the dictionary for unknown words (Mughtar, 2019; Edwina & Govindan, 2020). Teachers hold dominance in this type of reading in the way of carrying out and planning the activity (Edwina & Govindan, 2020). Intensive reading sometimes causes learners to become used to reading at a slow pace instead of learning to read for gist.

Extensive reading on the other hand is pleasure reading as it aims for the reader to read with great fluency whereby learners easily skim through large texts to get the key points they need as it mainly focuses on the meaning of the text (Henri, 2010; Mughtar, 2019). The material for this type of reading is mostly understandable for students to comprehend despite the lengthy text (Mughtar, 2019). Since it is comprehensible to learners, the speed of reading is greater compared to intensive reading. Unlike intensive reading, teachers discourage learners from using dictionaries since this type of reading focuses on fluency (Mughtar, 2019; Edwina & Govindan, 2020).

Reading Competency

Reading competency is the level of understanding a learner achieves in regard to written text. Proficient reading competency includes the ability to quickly recognize and analyze words and understand the cognitive concepts behind the words. Teachers should therefore implement instruction in a way that fulfills the individual needs of learners (Aliakbari & Haghghi, 2014; Hawkins, Jones, & Santi, 2019) if indeed they want to enhance learners reading competency.

Meta-cognitive awareness

Sheorey et al. (2001) who defined meta-cognitive strategies for reading as "intentional, carefully planned techniques by which learners monitor or manage their reading" (p. 436), and Gooden (2012) as "instruction in comprehension strategies that help learners become flexible thinkers who can approach a variety of texts with a repertoire of strategies, thus helping them to better comprehend those texts" (p. 17). Learners who use reading strategies while reading will not only read more but also understand their reading thus enhance their reading competency. Moreover, Flavell (1979) suggests that meta-cognitive knowledge refers to one's own cognitive skills, strategies and knowledge about what to do under different circumstances.

Flavell's (1979) meta-cognitive strategy knowledge (MSK) is the underlining theory of this study. It describes a formal model of meta-cognitive monitoring that includes four classes of phenomenon and their relationships among meta-cognitive knowledge, experiences, tasks or goals, and strategies or activities. While meta-cognitive knowledge includes knowledge about persons, tasks and strategies, the meta-cognitive strategy knowledge (MSK) refers to the knowing of how to enhance reading comprehension (task), and the suitable meta-cognitive plan of action (strategies) that can help to heighten interpretation of the reading text.

METHODOLOGY

This research employs a quantitative approach via questionnaires developed by the researchers through reading and reviewing past studies. The questionnaire consists of two sections namely Section A on the demographic profile (gender, faculty and perceived reading competency level) whereas section B comprises 9 metacognitive activities in reading academic text as a construct of meta-cognitive awareness. Five Likert scales, namely always, often, sometimes, seldom and never, are used to describe intensity of a respondent to implement those activities while reading academic text. A total of 600 undergraduate students from all five facilities of a private higher institution were selected using multi-stage cluster sampling technique. Completed data sets of 595 were keyed and analyzed using IBM Statistical Package for Social Sciences (IBM SPSS) version 25. Descriptive analysis involved gender, faculty and perceived reading competency level were reported in the frequency distributions. Response summary on activities involving meta-cognitive strategy in reading is described in their respective means and standard deviations. Statistical inference is conducted to compare the extent of usage for meta-cognitive related activities in academic reading among undergraduates with different perceived levels of academic reading competency.

RESULTS AND DISCUSSION

Table 1. Demographic information of the sample respondents.

Demographic Profile	Description	Frequency	Percentage
Gender	Male	239	40.2
	Female	356	59.8
Faculty	Faculty of Accountancy and Management (FAM)	122	20.5
	Faculty of Arts and Social Sciences (FAS)	100	16.8
	Faculty of Business and Finance (FBF)	115	19.3
	Faculty of Creative Industries (FCI)	59	9.9
	Faculty of Information and Communications Technology (FICT)	99	16.6
	Faculty of Science (FSC)	100	16.8
Perceived Reading Competency Level	Excellent reader	32	5.4
	Good reader	149	25.0
	Average reader	376	63.2
	Poor reader	38	6.4

As shown in Table 1, from a total of 595 sample respondents, 59.8% of them are female. They are distributed over six different faculties, namely FAM, FAS, FBF, FCI, FICT and FSC with 20.5%, 16.8%, 19.3%, 9.9%, 16.6% and 16.8% respectively. Besides, 63.2% of them have average perceived level of reading competency whereas 5.4%, 25% and 6.4% of them have excellent, good and poor perceived level of reading competency respectively.

Table 2. Response summary on activities involving meta-cognitive strategy in reading.

Activity involving meta-cognitive strategy in reading	Mean Score	Standard Deviation
MC1: I have a purpose in mind when I read.	3.27	0.999
MC2: I take notes while reading.	3.19	1.105
MC3: I preview the text to see what it is about before reading it.	3.30	1.083
MC4: I read aloud to help me understand what I'm reading.	2.92	1.120
MC5: I check to see if the content of the text fits my purpose for reading.	3.27	0.978
MC6: I underline or circle important information in the text.	3.52	1.061
MC7: I critically analyse the information I am reading.	3.51	0.972
MC8: I read again to understand what I'm reading.	3.73	0.928
MC9: I use reference materials such as dictionaries to support my reading.	3.48	1.038

From Table 2, most of the respondents read the text again to understand what they are reading. Besides, they often critically analyse the information using reference materials and highlight them in the text read. Sometimes, they preview the text before reading it. After having the purpose in mind, they occasionally check to see whether the content of the text fits the purpose of their reading. Besides, the respondents sometimes take notes while reading. Occasionally, they read aloud to help to understand what they have read.

Table 3. Internal reliability on items in meta-cognitive strategy used in academic text reading.

Cronbach's Alpha	N of Items
.788	9

As indicated in Table 3, 9 items in the questionnaire survey have acceptable internal consistency reliability to the construct of meta-cognitive strategy used in reading text as Cronbach's α value computed from sample responses to these items is more than 7.0 (Yang et al., 2011).

Table 4. Normality tests for responses on activities using meta-cognitive strategy in reading.

Metacognitive activity	Perceived reading level of competency	Shapiro-Wilk Test		
		Statistic	df	p value
MC1	Excellent reader	.915	32	.015*
	Good reader	.882	149	.000*
	Average reader	.897	376	.000*
	Poor reader	.891	38	.001*
MC2	Excellent reader	.899	32	.006*
	Good reader	.888	149	.000*
	Average reader	.908	376	.000*
	Poor reader	.853	38	.000*
MC3	Excellent reader	.912	32	.012*
	Good reader	.899	149	.000*
	Average reader	.909	376	.000*
	Poor reader	.903	38	.003*
MC4	Excellent reader	.881	32	.002*
	Good reader	.914	149	.000*
	Average reader	.907	376	.000*
	Poor reader	.911	38	.005*
MC5	Excellent reader	.873	32	.001*
	Good reader	.906	149	.000*
	Average reader	.898	376	.000*
	Poor reader	.893	38	.002*
MC6	Excellent reader	.898	32	.005*
	Good reader	.884	149	.000*
	Average reader	.897	376	.000*
	Poor reader	.914	38	.006*
MC7	Excellent reader	.870	32	.001*
	Good reader	.886	149	.000*
	Average reader	.892	376	.000*
	Poor reader	.906	38	.004*
MC8	Excellent reader	.879	32	.002*
	Good reader	.876	149	.000*
	Average reader	.877	376	.000*
	Poor reader	.889	38	.001*
MC9	Excellent reader	.880	32	.002*
	Good reader	.895	149	.000*
	Average reader	.897	376	.000*
	Poor reader	.911	38	.005*

*It is significant at 0.05 level of significance.

Table 4 indicates that the responses from sample respondents with different perceived levels of reading habits are not significantly normally distributed. Thus, non-parametric Kruskal-Wallis test is conducted to analyse the intensity of the usage of meta-cognitive activities among undergraduates with different perceived levels of reading competency.

Table 5. Kruskal Wallis Test results for responses on activities using meta-cognitive strategy among readers with different perceived reading levels of competency.

	MC1	MC2	MC3	MC4	MC5	MC6	MC7	MC8	MC9
Chi-Square	7.466	8.768	7.719	1.502	0.403	2.307	4.003	0.923	2.138
df	3	3	3	3	3	3	3	3	3
p value of the test	0.058	0.033	0.052	0.682	0.940	0.511	0.261	0.820	0.544

From the summarized results in Table 5, there is a significant difference on taking notes while reading among undergraduates with different levels of reading competency ($\chi^2(3) = 8.768, p\ value = 0.033$). There is no significant difference in the intensity of usage of the other eight meta-cognitive related activities among undergraduates with different levels of perceived reading competency.

Table 6. Mean responses on “Taking notes while reading” in meta-cognitive strategy among readers with different perceived reading levels of competency.

Perceived reading level of competency	Mean Score	Standard Deviation
Excellent reader	2.69	1.306
Good reader	3.19	1.232
Average reader	3.21	1.026
Poor reader	3.45	1.058

From Table 6, it shows that undergraduates with poor perceived reading competency level are more often taking notes while reading compared to those with excellent perceived reading competency level. This research result concludes that learners with different levels of reading competency use different meta-cognitive strategies for better reading competency. It is consistent with MSK theory by Flavell (1979) that usage appropriate meta-cognitive strategies can enhance reading competency among readers.

CONCLUSION AND RECOMMENDATIONS

The purpose of this research is to examine meta-cognitive awareness among tertiary learners with different perceived levels of reading competency. Meta-cognitive awareness is operationalized and manifested by seven related activities implemented by undergraduates while reading academic text. The research results indicate that most of the respondents read the text again to understand what they are reading. Besides, they often critically analyse the information using reference materials and highlight them in the text read. Tertiary learners with different levels of reading competency have similar meta-cognitive awareness while reading academic text. However, tertiary learners with poor perceived level of reading competency more often take their own notes while reading compared to those with average, good and excellent perceived level of reading competency. These research results provide an overview of implementation of meta-cognitive related activities while reading academic text among tertiary learners with different levels of perceived levels of competency. As a result, tertiary learners are expected to enhance their levels of reading competency over time via appropriate meta-cognitive related activities. Further studies are recommended to compare learners between public and private universities at different enrolment requirements to examine if similar meta-cognitive strategies are being used by the learners. The analysis on meta-cognitive awareness among tertiary learners with different reading level of competency could be extended by the incorporation of the qualitative research via observation and face-to-face interview.

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