



Managing Uncertainties through Resilience

International Conference on
Business, Accounting,
Finance and Economics
2019

E-Proceeding



International Conference on Business, Accounting, Finance and Economics 2019

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MESSAGE FROM UTAR PRESIDENT

Welcome to the 7th International Conference on Business, Accounting, Finance and Economics (BAFE) 2019. On behalf of Universiti Tunku Abdul Rahman (UTAR), it is truly an honour to welcome all the erudite speakers and participants to this conference.

I would like to extend my appreciation to the conference's line-up of esteemed keynote speaker, industrial forum speakers and research forum speakers for coming all the way to share your research insights and knowledge with the participants. I would also like to thank all participants of BAFE 2019 for your time and participation in this conference.

This is our seventh BAFE organised by the 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. BAFE 2019 provides a great opportunity for academics and researchers to present and exchange information to showcase the latest and updated theoretical, methodological and empirical knowledge on all aspects of business management, accounting, finance and economics. Since 2013, this conference has been a platform for researchers to not only present their papers, but also to network with other international academics and researchers. I am very pleased to see the continuous success of this international conference.

With this year's theme 'Managing Uncertainties through Resilience', the BAFE 2019 conference has successfully received more than 58 papers including those from several other countries. This year, we are pleased to welcome the participants from Brunei, Nigeria and India. We look forward to their input and participation. It is hoped that this conference will highlight the various strategies to deal with the uncertainties surrounding the development and adoption of emerging trends and technologies in the era of new revolution.

I hope the conference will stimulate profound discussions to bring forward ideas for progress and improvements for further research in the various areas of business, accounting, finance and economics. I am also enthralled 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 time-sharing 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 all keynote speaker, forum panellists, presenters and participants to the Seventh International Conference on Business, Accounting, Finance and Economics (BAFE) 2019.

The world economy is experiencing more challenging times with market uncertainties especially in the midst of the US-China Trade Disputes. In environment front, the environment problems the human kind facing is climate change. Technology wise, the forth industry revolution is changing the business landscape and operations. Digital financial services industry is undergoing explosive development in the competition for e-commerce and new payment methods. The rise of finance technology (FinTech) is redefining 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.

I was told that the presenters are diverse, from local as well as from ASEAN, South Asia and African countries. This conference would be a great platform to share ideas, views, findings and research outcomes and to assimilate the latest business, accounting, finance and economics issues. I hope you will find the conference to be useful and that BAFE can provide an excellent platform for academic deliberation.

I would like to convey my sincere appreciation to Dr. Zam Zuriyati Mohamad and her committee for the effort and commitment who worked to make this conference a reality, and to all reviewers for their invaluable time and effort in the review process and for providing constructive feedback to the authors.

My special thanks to the Keynote Speaker, Prof Dr. Yu Min Teh and Research Talk Speaker Prof. Dr. Mohamed Ariff Syed Mohamed for your valuable sharing, and sponsors who have granted your support to the conference.

Lastly, I hope all of you will have effective and fruitful sessions, and have a pleasant stay in Cameron Highlands, Pahang, Malaysia.

Thank you.

Dr. Au Yong Hui Nee
Dean
Faculty of Business and Finance (FBF)



Message from the Conference Chair, International Conference on BAFE 2018

On behalf of the organizing committee, I am honored and delighted to welcome you to the 7th International Conference on Business, Accounting, Finance and Economics (BAFE) 2019, organized by UTAR's Faculty of Business and Finance, together with our 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 "Managing Uncertainties through Resilience" has been chosen to indicate the challenges lie in front of us in today's ever-changing business and politics world. Life is tough and expectation aren't always met. Managing through any uncertainties can be worrying, where any wrong decisions or policies might lead to a downfall. Capacity to recover quickly from any difficulties and stand strong to face challenges is the strength which is gathered through our experiences. In this conference, I hope the participants may learn how to manage uncertainties through resilience.

The main objective in this conference is to bring together researchers to present up-to-date works that contribute to new theoretical, methodological and empirical knowledge. We would like to promote research development, linkages and knowledge mobilization among disciplines and across institutions, sectors, and regions. We hoped that we can provide a platform to an international forum wherein scholars and researchers can exchange ideas and information on critical research issues.

As the organizing chairperson of BAFE 2019, I would like to extend my greatest appreciation to all members in the organizing committee for their great dedication in making this Conference a reality. My sincere thanks to all the participants and the socially responsible sponsoring organizations for their full support in contributing to the success of this conference. Last but not least, it is my hope that you will find this conference stimulating, fulfilling and enjoyable.

Once again, I thank you for your support of BAFE 2019 and your participation.

Dr. Zam Zuriyati Binti Mohamad
Conference Chair, International Conference on BAFE 2019
Faculty of Business and Finance, UTAR

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OBSTACLES OF WOMEN ENTREPRENEURSHIP GROWTH

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Abstract

Women's equality and empowerment is one of the seventeen Sustainable Development Goals (SGT) that initiated to eliminate the gender discrimination. This goal can be achieved through women entrepreneurship. However, the obstacles of women entrepreneurship growth is undeniable. Employing critical failure factor analysis this study aims to explore the obstacles face by women entrepreneur. Four obstacles were explore in this study consists of restricted training and education, legal constraints, limited access to financial resources and family related interface. Besides, this study intends to examine how these obstacles affect women entrepreneur growth. Data has been collected from 86 women entrepreneurs who conveniently reached and agreed to participate in this research. Relative Importance Index has been adapted to rank the obstacles and subsequently partial least square structural equation model has been performed to analyse the data. The findings reveal that legal constraints, limited access to financial resources and family related interface lower the entrepreneur growth. Theoretically, this study offers a new women entrepreneur model by linking the obstacles and growth in a single study. Practically, this study will benefits many parties involve in entrepreneur including government and non-government agencies in providing supports to women entrepreneurs.

Keywords: Women Entrepreneurship, Obstacles, Training and Education, Legal Constraints, Financial Resources, Family Related Interfaces, Critical Failure Factor, Relative Importance Index

INTRODUCTION

Entrepreneurship is an important key for a nation's economic growth through establishment of a new business that can provide more job opportunities, toughen competition in the market and leads to higher productivity. In the year of 2014, 163 million women worldwide started businesses with Total Entrepreneurial Activity (TEA) increased by 10 percent and this continues a positive trend shown in the year of 2018 which indicated an average of 7 percent raise in women's TEA rates and average 6 percent decrease of the gender gap between women and men. The largest involvement of women in entrepreneurship is within the age group of 25-34 and 35-44-year-old (Rieva Lesonsky, 2017). According to Women Entrepreneurs Law and Legal Definition, "women entrepreneur" is refer to involvement of women who participate in organizing and managing enterprises. It is very important to boost participation of women to enter male-dominated sectors and by doing so, it would change the mindset of financial institutions to provide new opportunities for women to absorb, develop and grow entrepreneurial businesses. Beside, participation of women in business activities especially in developing countries can help their society to reduce poverty and also to improve their country's economic condition. Equipped with the necessary information, a new 'brand' of women entrepreneurs with new directions have appeared nowadays, who have an important knowledge of the business orientation in order for them to be success in their entrepreneurship activities. These directions included risk taking behavior, creativeness and innovativeness, multi-tasking and ability for manage manpower problem that arises. Recently, the number of women involved in entrepreneurial responsibility has increased. It shows that an involvement of women in business activities are on healthy trend. However, despite the rapid growth, there is a substantial number of women who are still involve in business at the micro level, and they still have no confidence to go global in promoting their business activities at international level. The Sustainable Development Goals (SDGs), which is also known as the Global Goals, are worldwide call for the action with the aim to reduce poverty, defend the earth and ensure that all people enjoy peace and prosperity. Besides, SDGs also aimed to achieve gender equality and empower all women as it also becomes part of the seventeenth (17) strategic plans listed in goal lists. Applying new legal outlines regarding gender equality at the work and

the extinction of destructive practices on women are the crucial task to stop the gender-based discrimination established in many countries worldwide.

The Global Entrepreneurship Monitor Report 2015/2016 recorded that during both 2016 and 2017, compared to men, it seems like women are more expected to start businesses in all regions, except in North America. Eliminating the gender gap in terms of their business activity involvements still become a priority focus point for policy makers in all economies. In Malaysia, participation of women in business activities are about as likely as men, increases especially in small and medium enterprises (SMEs). Many of these women entrepreneurs facing difficulties and different challenges including lack of support from others especially their own family, lack of confidence in starting business and high barriers including biasness towards their male counterparts. However, government has encouraged women to participate in business activities by providing many sources including entrepreneurial grants, sources of funds and also provided different programs to motivate and give guideline for female self-starters in Malaysia. Malaysia Budget 2019 also bring good news for entrepreneurs. Government highlighted to focus on institutional restructurings, the society's welfare and advancement of business culture to achieve Malaysia's "Economic Tiger" status. SMEs represents 98.5 per cent of businesses activities in Malaysia, have received a main enhancement from the budget of the year 2019, including initiatives for a tax exempted for specific business-to-business service tax. A credit system given for small producers who involved in international business activities especially those that import raw materials and intermediary goods from other countries. The focus point listed in the 2019 Budget seems to be very realistic as a platform to encourage and empower more Bumiputera and local entrepreneurs to start up or enhance their businesses at higher level. Meanwhile, the Ministry of Entrepreneur Development (MED) expected to see more opportunities for business activities including SMEs in the services sectors as a result for the initiative taken by the government to impose taxes on imported services.

Despite all the positive news, there is still room for improvement to help women entrepreneurs for business startup. Government is helping by providing supporting mechanism and better strategies especially in providing source of funds for women. Some of them including Women Entrepreneur Financing Programme, SME Bank, Women of Will, Temanita Financing Scheme, Tekun Nasional, Amanah Ikhtiar Malaysia (AIM), National Entrepreneurship Institute (INSKEN), Global Accelerator Programme, MAGIC, Cradle Investment Programme, Cradle Fund Sdn Bhd and many others. Formation of the Ministry of Women, Family and Community Development and also National Policy on Women are also important to ensure the successful of women as an entrepreneur. To be able to reach out to the rural women, the government support was given via the non-governmental organizations in terms of training program, financial and technical assistant, information resources, development and consultancy, workshops on motivation, leadership and so on (Mohamed Ariff & Syarisa Yanti Abubakar, 2003; Xavier, Ahmad, Nor & Yusof, 2012). In short the Malaysia government has been continuously investing and cultivating an enterprising culture among Malaysian women. National Association of Women Entrepreneurs of Malaysia (NAWEM) was designed by the government with the aim is to create a guideline as a platform in supporting women to empower and develop their business, which included providing leadership, inspiration and role models (Kuppusamy, Ganesan & Rosada, 2010). Various other women entrepreneur association such as FEM and USHANITA together with industry associations played the role as a stage for businesswomen to create networks and exchange experiences and information (Xavier, Ahmad, Nor & Yusof, 2012). In conjunction with the women entrepreneur phenomenon, this study intends to achieve two objectives. First, to explore obstacles face by women entrepreneur using critical failure factor and second, to examine how this obstacles affect the women entrepreneur growth.

LITERATURE REVIEW

Training and Education

Entrepreneurship education and training are important for entrepreneurial activity as a good platform to promote business activities such as the initiation, creations and sales of unique products to meet consumer need. Entrepreneurship education, according to Baba (2013) is the processes of gaining knowledge, attitudes and skills of entrepreneurship. It can help to increases entrepreneurs' ability to search for good investment with the best returning opportunity. The lack of proper education becomes a major challenge for businesswomen especially in developing countries. Thus, women are not able to understand and identify the procedures on how a small scale business can be started. Uneducated women are less expected to form their own business

and this lower levels of education may become one of the reason for a lower survival rates for women in business activity (GMI, 2014). The implication of the current study by Obilo C. J. (2017) who found that education may influence the performance of women involvement in business activities and with higher level of education, they can perform better.

Entrepreneurship training is a program designed to influence skills and attitude to allow entrepreneurs start a new business or enlarge an existing one (Peter, Maganjo, and Kavidan, 2013). It can increase the number of entrepreneurs as well as employment opportunities that will benefit to economic growth and development of a country (Maryam I. et. al, 2017). Norman (2013) on his study found that training is a coaching process for skilled achievement. It's aimed to help women overcome the obstacles they face in running their businesses. It can improve both firm performance and overall levels of well-being (Olena, 2014).

Legal Constraint

Women entrepreneurs have to face serious complications due to the legal barriers created by the government. These barriers include business regulations, taxations and some other legal procedures. Though these barriers are problem faced by both men and women entrepreneurs, but women are facing more compared to men as women are not educated enough to meet the challenges created by these legal barriers (Vossenber, 2013). Due to bureacracy, inefficiencies of large scale production, lack of initiatives and ineffective decision making hinder the development of women entrepreneurship (Jahed et al., 2011). Previous study by Haper (2004) identified that authorities are not concerned to promote business activities especially SMEs, and they failed to observe the implication of various programs and policies in informal sectors. Mann (2004) indicated that the regulations of taxation by government, wages distribution, and licensing application are several important reasons that lead to the reason on why this business sectors are hard to grow. Therefore, legal and regulatory activities have been stated as one of important factors in influencing women entrepreneurs to start enterprises and running businesses (Obilo C. J., 2017). In many developing countries, women do not enjoy the protection in entrepreneurial activities to upgrade due to the lack of legal guideline and clear property rights (GMI, 2014). In Bangladesh, women mostly engaged with the small and mediums sized businesses do not have sufficient power to influence the policy making in favor of them (Jahed et al., 2011). Therefore, government policy is not always advantageous for protecting the real interests of women entrepreneurs, particularly in areas that matter for promoting their involvement in economic development process in their country (Meherun N., 2014).

Family Related Interface

Most of women are burdened with work at home and business activities at the same time. They believe that whatever their positions in their business, they still have to focus on their responsibility at home. They need to do housework and take care of their children at the same time, cause them to face difficulty to maintain housework and business activities (Gill and Ganesh, 2007). Household commitments become one major concern that may affect the performance of women entrepreneurs in Kisauni sub-county. Marital status will also influence women participation in entrepreneurship activities as some husband did not granted their wives to involve into business while others are very supportive and helping their wives with financial aid. The study shows that variables such as having children and taking responsibilities as a housewife are the same time of doing businesses are the main reason that prevent women to involve in entrepreneurship (Obilo C.J., 2017). Marital status of woman is important because a married woman has more responsibilities at home and a research shows that firms are more successful when women do not attempt to integrate family and business (Akehurst et al., 2012)

Carter (2006) identified that some variables such as having children has no statistical relation with businesses performance. However, the responsibilities as a housewife that is still become a main constrain for some women who wish to start their own businesses. This result also alike with the study done by Obilo C. J. (2017) who stated that the unnecessary demand of women as wives, mothers and managers of the house makes it difficult for women to run and manage business at the same time. Therefore, support from a family is found to be one of the important factors for women who want to create their own business. Thus it has been found that female entrepreneurs need to have support from family members and society as a whole (Akehurst et al., 2012).

Limited Access to Financial Resources

Generally, women face problems in collecting funds for their business and sometimes they also experience discrimination from financial institutions. A lack of capital at the initial stages can have negative long - term effects (Akehurst et al., 2012). Access to financing and capital is an important

factor for existence of a businesses as in situations of insufficient financial will cause the entrepreneur unable to produce new products and services or to create new jobs (Akehurst et al., 2012). Besides due to lack of proper business education, many women do not know about the formal procedure to get financial support from banks to initiate their business. Besides, complex procedures of bank loan, lack of tax regulation and lack of necessary papers like bank accounts and guarantees for bank loans hinder the access of women to finance their businesses (Rabbani and Chowdhury, 2013). Furthermore, microcredit is considered as an important source of capital for those who do not have access to traditional banking. The effectiveness of microcredit is much debated indeed. However, these issues have been extended to the possible consequences with some claiming that it will generate a positive result from the programs of women's empowerment, while others suggesting that it will leaves women worse off than before (Kabeer, 2001). The banks are not willing to provide a large amount of fund to women entrepreneurs as they do not have enough confidence on the capacity of a business woman. In the case of business women who get capital funding from the financial institution and they might have a very short period of time to pay the interest, it seems quite tough for women to pay the interest within this short period of time as it takes minimum one year to establish a business for any person. Besides, banks most probably willing to provide monetary funding to those who have at least two years of established business. As a result there is no scope to take loan from the bank at the very initial stage of the business. In addition, banks sometimes receive bribes to give loan to female entrepreneurs, according to the respondents of this study. Therefore, women in SMEs in Bangladesh are facing serious problems in accumulating fund for their business (Obilo. C. J., 2017). Based from the above discussion, a proposition was developed that the obstacles faced by women entrepreneur will lower their entrepreneurship growth.

RESEARCH METHODOLOGY

Sampling Design

The target population for this study is women entrepreneur. Based on Tiwari (2017), women entrepreneur refers to women who take responsibility to manage and organize the resources of their businesses and accept all the risks with the expectations of gaining profit. There is no specific number of women entrepreneur in Malaysia, however Centre for Entrepreneur Development and Research (CEDAR) stated that 20% of the estimated totals of more than 650,000 entrepreneurs are women which approximately reach to a total of 130,000 women entrepreneur. Considering no available list of women entrepreneur in Malaysia, this study has applied a non-probability sampling approach which is convenience sampling. Convenience sampling was selected as it is easy and able to reach the respondent with minimum rules. In convenience sampling no inclusion of criteria prior to the selection of subjects. Thus, in this study every women entrepreneur who conveniently reached by the researcher can be the respondent. Previous researcher suggested that the minimum sample size can be computed either on ten times the largest of formative indicators used to measure one construct or ten times the largest number of structural paths directed at a particular latent construct (Joe F. Hair, Ringle, & Sarstedt, 2011). In line with that suggestion, the minimum sample size is 60.

Research Procedure

A quantitative research method was adopted by this study whereby questionnaire was selected as a medium to collect the data. Questionnaires was sent to the respondent through online application. 86 data of the data collected is usable and this is above the minimum sample size. The questionnaire has been divided into two sections which is demographic profile and questions to measure the variables using five point likert scale. Five point likert scale has been applied to determine the respondent agreement on a particular statement. In order to achieve the first objective, critical failure factor analysis has been adopted which reflect the obstacles faced by women entrepreneur. All the items to measure the obstacles will be ranked using the relative importance index. The measurement of relative importance index is using following formula (Somiah, Osei-Poku, & Aidoo, 2015):

$$\sum w / A * N$$

Where:

W = weight given to each factor ranges from 1 to 5

A = the highest weight

N = number of respondents

Thereafter, the second objective has been achieved using Smart PLS 3 software. Partial Least Square Structural Equation Model (PLS SEM) has been used in analyzing the data.

FINDINGS

Respondent Profiles

86 women entrepreneurs involve in this study. Majority of respondents 45 (50%) are age within the range 36 to 45; 22 (25.6%) of them are age within the range 26 to 35; 11 (12.8%) are age 46 to 55; 6(7%) are age 55 above and 4 (4.7%) are age within the range 18 to 25. In term of education, 35 respondents obtained secondary education, 27 are diploma holders, 19 are degree holder while 5 are post graduate holder. 40 respondents involve in variety of businesses; 16 respondents involve in fashion and beauty; 22 respondents involve in food and catering; and other 8 respondents involve in training and education.

DESCRIPTIVE ANALYSIS

Table 1 presented the rank of critical failure factor for training and education using mean and relative importance index.

Table 1: Rank for Training and Education

	Mean	Relative Importance Index	Rank
Lack of connection with experts	3.814	0.7628	1
Lack of access to high quality training	3.791	0.7581	2
Lack of business experience	3.779	0.7558	3
Lack of nearby trainings	3.651	0.7302	4
Lack of education	3.395	0.6791	5

Table 2 presented the rank of critical failure factor for legal constraint using mean and relative importance index.

Table 2: Rank for Legal Constraint

	Mean	Relative Importance Index	Rank
Legal constraint (permit, licence)	3.7674	0.7535	1
Lack of law protecting investment	3.6047	0.7209	2
Tax regulation	3.5930	0.7186	3
Lack of government support	3.5814	0.7160	4
Lack of coordination between various government department	3.5698	0.7140	5
Business accounting regulation	3.5349	0.7070	6

Table 3 presented the rank of critical failure factor for financial resources using mean and relative importance index.

Table 3: Rank for Financial Resources

	Mean	Relative Importance Index	Rank
Poor access to capital	3.7791	0.7558	1
Lack of financial resources from bank	3.7558	0.7512	2

Restricted access to certain financial resources	3.7326	0.7465	3
Lack of fund for fixed assets	3.6512	0.7302	4
Inadequate assistance from financial agencies	3.6512	0.7302	4

Table 4 presented the rank of critical failure factor for family interface using mean and relative importance index.

Table 4: Rank for Family Related Interface

	Mean	Relative Importance Index	Rank
Having young children	3.6744	0.7349	1
Responsible for all aspects of family	3.6047	0.7209	2
Lacking of morale support from family	3.5581	0.7116	3
Lack of ability to balance between family and business	3.5000	0.7000	4
Stereotype of gender role	3.4651	0.6930	5

Subsequently, the result from PLS SEM on measurement model shows that indicator loading in Table 5 is above the recommended value of 0.70. In this study few items which does not meet the criteria has been deleted. The second step is assessing the internal consistency reliability by using composite reliability and Cronbach Alpha. The results of composite reliability reported in Table 5 indicates that the values are within the suggested value of 'satisfactory to good' (Hair, Risher, Sarstedt, & Ringle, 2019). In addition, the outcomes of Cronbach Alpha presented in Table 5 meet the rule of thumb as the value more than 0.70. The third step is examining the convergent validity by conducting the average variance extracted (AVE). Table 5 reported that the AVE achieved the acceptable value of above 0.50.

Table 5: Measurement Model Assessment

Items	Loading	Composite Reliability	Cronbach Alpha	Rho A	Average Variance Extracted (AVE)
T1	0.870	0.854	0.745	0.772	0.662
T2	0.831				
T4	0.733				
L2	0.788	0.906	0.861	0.866	0.706
L4	0.865				
L5	0.865				
L6	0.840				
F1	0.896	0.933	0.904	0.908	0.777
F2	0.920				
F3	0.854				
F4	0.854				
I1	0.853	0.926	0.899	0.904	0.713
I2	0.895				
I3	0.791				
I4	0.846				
I5	0.836				
G1	0.930	0.953	0.935	0.936	0.837
G3	0.938				
G4	0.903				
G5	0.886				

Whereby, T = training and education, L = legal constraints, F = financial resources, I = family related interface, G = entrepreneur growth

The final step in measurement model is to ensure that Heterotrait-Monotrait Ratio (HTMT) is less than 0.85 to establish discriminant validity. The findings reveals that all HTMT is less than 0.85. The highest HTMT value is between financial resources and family related interface which is 0.730. The findings are shown in Table 6.

Table 6: Heterotrait-Monotrait Ration (HTMT) Results

	T	L	F	I
T				
L	0.568			
F	0.346	0.616		
I	0.314	0.571	0.730	
G	0.258	0.580	0.648	0.668

Whereby, T = training and education, L = legal constraints, F = financial resources, I = family related interface, G = entrepreneur growth

Structural Model

Confirming that the measurement model has fulfill the criteria, this study proceed with examine the structural model. This step is to assess the collinearity among constructs by using Variance Inflation Factor (VIF) (Hair et al., 2019).The findings show that VIF is less than 10 which is in accordance with the recommended value of VIF. Thereafter, the significance relationships was assess using R² of endogenous construct. The result shows the R² of 0.479 that reflects that the four independent constructs explain 47.9% of the changes in teamwork effectiveness in this study. This portrays that the obstacles faced by women entrepreneur suggested in this study has weak effect on women entrepreneur growth. Furthermore, Q² was accomplished by applying blindfolding procedures to determine the quality of the PLS path model. The result of Q² for construct cross validated redundancy is 0.368, which concludes that a medium predictive accuracy of the PLS the path (Hair et al., 2019).

Table 7: Path Model Analysis to Test Hypothesis

Path	Mean	Standard deviation	T statistic	P Value	Preposition
Training and education --- growth	0.035	0.092	0.527	0.598	Do not support
Legal constraints ---- growth	-0.235	0.108	2.132	0.033	Support
Financial resources ---- growth	-0.258	0.108	2.430	0.015	Support
Family interface ---- growth	-0.343	0.102	3.339	0.001	Support

Further analysis was conducted to evaluate the proposition in this study by applying 10,000 subsamples bootstrapping procedure. The results are reported in Table 7. It shows that the p value for path is less than 0.05 with negative value of mean for legal constraints, financial resources and family interface which support the preposition that obstacles faced by women entrepreneur will lower their entrepreneurship growth.

CONCLUSION AND DISCUSSION

The aims of this study is to explore the obstacles faced by women entrepreneur in developing their venture. Among the items listed in training and education, lack of connection with experts was the highest obstacles ranking. The justification for the result is that experts will have better knowledge and experience in particular business. They know how to deal with customers, competitive market, availability of resources, approaching suppliers and etc. Women entrepreneur may need guidance from these experts to face challenges and to grow their businesses. From legal constraints perspective, respondents rated that complying the legal requirement such as procedure related to permit and licence is the biggest challenge for women entrepreneur. It is foresee that many bureaucracy and approval need to be obtained whereby it took long time and additional cost. With regards to financial resources, the findings indicates that poor access to capital as major hurdles for women entrepreneur. Some of women entrepreneurs

do not have adequate financial savings and have restricted capital for their ventures. The stability to maintain the working capital will be an issue if they are unable to generate a consistent profit. In term of family related interface, the respondents pointed out that having young children as the main difficulties for women entrepreneur. Young children need high attention and commitment from parents. Thus it will limit women involvement in business. The second objective of this study is to examine how these obstacles affect women entrepreneurship growth. The findings supported the preposition that the obstacles will the women entrepreneur growth. The results reveal that legal constraints, limited access to financial resources and family related interface lower the entrepreneur growth. These findings can be explained with the discussion in Literature Review section whereby the government regulations on taxation, wages, licensing are the causes for entrepreneur growth. Notwithstanding to that, access to financing and capital is essential to produce new product and create new job for business expansion. In addition, women's responsibility and commitment restrict their ability to move forward in business. The inability to balance the time, energy and resources between family and business will cause business failure.

IMPLICATIONS

Theoretically, this study offers a new women entrepreneur model by linking the obstacles and growth in a single study. It provides a new insight for future researchers to conduct research in this field. Practically, this study will benefit many parties involve in entrepreneur including government and non-government agencies in providing supports to women entrepreneurs. Specifically, it gave better understanding on the difficulties face by women entrepreneur. In term of socio economic, this study promotes the international agenda to increase women empowerment as stated in Sustainable Development Goals.

LIMITATION AND RECOMMENDATIONS

First limitation of this study is the small sample size which is 86 respondents. Future researchers are recommended to have bigger sample size. Second limitation is weak R square of 0.479. Future researchers are suggested to include more obstacles such as cultural and economic restriction. Third limitation is on the data collection method which is quantitative data collection via distributing questionnaire. Future researcher proposed to conduct qualitative data such as focus group discussion and interview to get in depth information and insight.

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DETERMINANTS OF E-COMMERCE CONTINUANCE INTENTION AMONG SMEs IN PERAK, MALAYSIA: AN EMPIRICAL STUDY

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Abstract

In the era of 4th Industrial Revolution, digital technologies play a key role in business development. An organization is able to achieve a long term business growth with the adoption of digital technologies. Small and medium enterprises (SMEs) must pick up the pace of digitalization to boost economic growth. As stated by the reports of Department of Statistics Malaysia in 2016 and 2017, economic growth rate for Perak in 2016 was reduced compared to 2015, but raised back in 2017. The reports shown that Perak's gross domestic product (GDP) growth rate was 6% in 2015, 4.1% in 2016 and 5.5% in 2017. Electronic commerce (E-commerce) is considered to be able to raise the Perak's economic growth by the government agencies and academicians. Yet, majority of the SMEs in Perak are unwilling to adopt E-commerce into their businesses. Therefore, this study aims to determine the level of E-commerce adoption among SMEs in Perak and to investigate the factors that affect the E-commerce continuance intention. Technological, Organizational and Environmental (T.O.E.) framework is applied in this study to examine the determinants of E-commerce continuance intention. Data are collected from SMEs in manufacturing and services sector in Perak. Partial Least Square technique is applied for data analysis. The results reveal that perceived benefits and organizational readiness have direct influence on continuance of E-commerce adoption among SMEs in Perak. The results also shown that external supports do not play any role on the E-commerce continuance intention. This study offers theoretical and practical implications for governments, academicians and relevant parties to evaluate the current status of E-commerce adoption among SMEs which enable them to take appropriate actions in promoting E-commerce.

Keywords: E-commerce, Continuance Intention, SMEs

INTRODUCTION

Small and medium sized enterprises (SMEs) are the backbone to a country's employment, development and economic growth. In Malaysia, SMEs comprise 98.5% of the country's business community (SME Corporation Malaysia, 2017) and contribute more than 37% of the national gross domestic product (GDP) (Department of Statistics Malaysia, 2018). Besides that, as the major job provider in Malaysia, SMEs sector employ around 65% workforce (Department of Statistics Malaysia, 2018). It is undeniable that SMEs are the key engine of economic growth. However, despite that, most of the SMEs lack of nationwide geographical presence. Hence, SMEs are pushed to adopt electronic commerce (E-commerce).

E-commerce has become a key requirement for a business to expand nationally. E-commerce is a great tool for an organization to access a wide range of markets. With E-commerce, an organization is able to reach more customers, suppliers and suitable business partners across the world. Moreover, adoption of E-commerce can help in reducing cost and improving productivity and transaction efficiencies. Nevertheless, SMEs are reluctant to adopt E-commerce. The adoption and diffusion of E-commerce by SMEs are still left behind and slower compared to larger organizations. In order to strengthen the country economy, SMEs should keep up the pace of E-commerce development. Moreover, SMEs that engage in E-commerce are able to have competitive advantage to compete with the larger organization and survive in the challenging environment. In this regards, the development of E-commerce in SMEs is important for SMEs to survive in competitive market and gear up the national economy growth.

Perak is the second largest state in Peninsular Malaysia. In 1890 to 1979, Perak was one of the largest tin producers in Malaysia (Perak Investment Management Centre, 2019). However, in the

mid-1980s, the decline of the global tin industry was a blow to Perak's economy. In order to alleviate the economic situation, Perak State government began to develop manufacturing sector. The manufacturing industry was identified as a main driver of economic growth. Today, manufacturing sector has flourished in Perak, it has become the second largest contributor to Perak's economic (Department of Statistics Malaysia, 2017).

Background Information

There are five sectors in Malaysian SMEs: services, manufacturing, construction, agriculture, and mining and quarrying. SMEs in Malaysia fall into two broad categories: (i) manufacturing (enterprises with full-time employees not exceeding 200), and (ii) services, construction, agriculture, mining and quarrying (enterprises with full-time employees not exceeding 75). Perak accounted for 8.3% of the total SMEs in Malaysia (SME Corporation Malaysia, 2017). According to Department of Statistics Malaysia, services and manufacturing sectors contribute to the largest part of Perak's GDP. Service sector accounted for 60.9% of the state's economy while manufacturing sector accounted for 18.5% (Department of Statistics Malaysia, 2017). Therefore, this study will focus on Perak' SMEs in services and manufacturing sectors.

Problem statements and objectives

According to Department of Statistics Malaysia, economic growth rate for Perak in 2016 was reduced compared to 2015, but raised back in 2017. The Perak's GDP growth rate was 6% in 2015, 4.1% in 2016 (Department of Statistics Malaysia, 2017) and 5.5% in 2017 (Department of Statistics Malaysia, 2018). Government agencies and academicians believe that E-commerce can help in boosting up Perak's economic growth. As SMEs are important for the country's economy, the development of E-commerce in SMEs is crucial to the economic growth. However, most of the SMEs in Perak are reluctant to adopt E-commerce at high level. Majority of them are using basic applications of E-commerce such as electronic mail (E-mail) and static website. It is believed that continuance usage of E-commerce is crucial to establish the foundation of a firm. Furthermore, the sustained use of E-commerce technology will lead to high level of E-commerce adoption. In this regards, there is necessary to identify and examine factors that significantly influence the sustainability of E-commerce among SMEs in Perak. Various studies (Hajli, Sims, & Shanmugam, 2014; Rahayu & Day, 2015; Walker, Saffu, & Mazurek, 2016) have found the factors affecting E-commerce adoption. Yet, the determinants of E-commerce continuance intention are not clearly identify. Hence, this study aims to identify the state of use of E-commerce among SMEs in Perak and factors that affect the E-commerce continuance intention.

The structure of this paper is organized as follows: Section 2 presents the background literature. Section 3 proposes a research framework and the research hypotheses. Section 4 discusses the research methodology, and section 5 is the data interpretation. Discussion, conclusion, implications, limitations and future work directions are highlighted in the last section.

LITERATURE REVIEW

E-commerce Continuance Intention

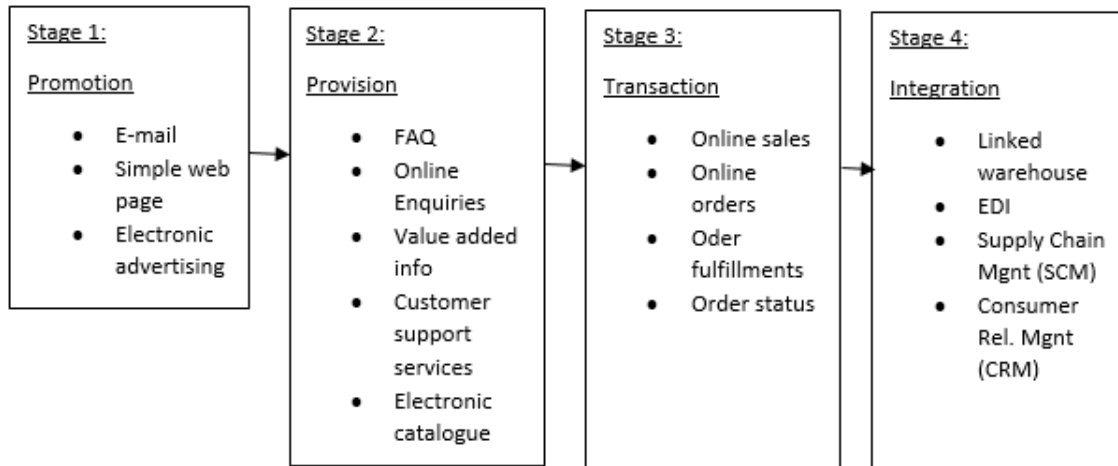
There are several definitions of E-commerce. Researchers defined E-commerce based on their study context and research objective. According to Ghobakhloo, Arias-Aranda and Benitez-Amado (2011), E-commerce is defined as "the use of information and communication technologies to support business activities." From Turban, King, Lee, Liang and Turban (2010) point of view, E-commerce is defined as "the process of buying, selling, transferring, or exchanging products, services, and/or information through computer networks, mostly the Internet." Hajli, Sims and Shanmugam (2014) stated E-commerce is conducting commercial activities via Internet. In this study context, E-commerce continuance intention is defined as intention to continue use of E-commerce technologies such as E-mail and company's website to conduct business activities.

Level of E-commerce adoption

There are several models have been proposed in the previous studies to evaluate the state of E-commerce adoption. Okadapau, Omwenga and Oboko (2016) proposed a model of stages of E-commerce adoption which as shown in Figure 1. Okadapau et al.(2016) categorized E-commerce development into promotion, provision, transaction and integration. These states differ from less advanced to more advanced. Rahayu and Day (2017) proposed five stages of E-commerce

adoption which are E-mail (stage 1), static website (stage 2), interactive websites (stage 3), transactional websites (stage 4) and integrated websites (stage 5). A firm could gain more benefits from E-commerce if they adopt E-commerce at a higher level (Rahayu & Day, 2017).

Figure 1: Stages of E-commerce Development (Okadapau et al., 2016).



Underlying Theories

There are various theories have been applied in previous studies to study the technology adoption. Technology Acceptance Model (TAM) (Davis, 1989), Diffusion of Innovation (DOI) (Rogers, 1983), and Technological, Organizational and Environmental (T.O.E.) framework (Tornatzky & Fleischer, 1990) are the most frequently used theories. However, TAM and DOI focus on technology characteristic only. TAM proposed that a person's intention to use a new technology depends on perceived usefulness and perceived ease of use. Perceived usefulness is "the degree to which an individual expects using a particular technology would enhance one's job performance", whereas perceived ease of use is defined as "the belief of an individual that using a particular technology would be free of effort" (Davis, 1989). Rogers's (1983) DOI theory emphasized that relative advantage, compatibility, complexity, observability and trialability serve to affect the decision of innovations adoption. Relative advantage is "the degree to which an innovation is perceived as being better than its predecessor"; compatibility is "the degree to which an innovation is perceived as being consistent with the past experiences, existing values and needs of potential adopters"; complexity is defined as "the degree to which an innovation is perceived as being difficult to understand and use"; observability is "the degree to which the results of an innovation are visible to others"; and trialability is defined as "the degree to which an innovation may be experimented with on a limited basis" (Rogers, 1983).

T.O.E. framework had been introduced by Tornatzky and Fleischer (1990). The T.O.E. framework is a holistic framework for studying the innovation adoption in an organization. It consists of three contexts which are technological, organizational and environmental contexts that will have influence on the adoption of a new technology in an organization. Technological context refers to "both the internal and external technologies important to the company which include current practices and equipment inside the company, as well as the set of available technologies external to the company." For organizational context, it refers to "descriptive measure about the organization such as size, managerial structure and resources of the firm". For environmental factors, it refers to "external factors that have influence on the firm such as pressure from suppliers, customers and competitors, and support from government and vendors". T.O.E. framework has been widely used by researchers to investigate E-commerce adoption (Li & Xie, 2012; Rahayu & Day, 2015; Sila, 2013). According to Oliveira and Martins (2011), T.O.E. framework able to provide better explanatory power than TAM and DOI because it covers factors from three contexts. Therefore, T.O.E. framework is selected in this study to examine the determinants of E-commerce continuance intention.

CONCEPTUAL FRAMEWORK

Perceived Benefits

Perceived benefits in this study is referring to both the direct and indirect advantages that E-commerce can provide for a firm. Previous studies revealed the positive relationship of perceived benefits with E-commerce. Rahayu and Day (2015) claimed that perceived benefits has significant and positive influence on adoption of E-commerce among Indonesian SMEs. In addition, Sin et al. (2016) found that relative advantage is the determinant of E-commerce adoption among SMEs in Malaysia's Northern States. SMEs would be more likely to adopt technology if they perceive the technology brings greater benefits to them. Lee and Kim (2007) agreed that perceived benefits have great influence on the adoption of E-commerce. Hence, SMEs would be more inclined to continue the E-commerce adoption if they perceived it as advantageous. Greater perceived benefits of having E-commerce technology raises the possibility of E-commerce continuance intention.

H1: Perceived benefits has positive influence on E-commerce continuance intention.

Organizational Readiness

Organizational readiness refers to a firm's availability of financial and technological resources to adopt a new technology. Lack of needed resources inhibits a firm to adopt new technology. Huy, Rowe, Truex and Huynh (2012) stated that SMEs have difficulty in adopting new technology due to scarcity of financial and technological resources. Thus, organizational readiness plays a very important role in E-commerce adoption. SMEs with higher state level of readiness are more likely to adopt E-commerce. Hajli, Sims and Shanmugam (2014) found that adoption of E-commerce is significantly affected by organizational readiness. Furthermore, Pan, Lim, Lim and Lim (2018) claimed that adequate financial and technological resources is important for a firm to continue to adopt E-commerce. In view of this, SMEs would consider the level of organizational readiness when they are planning to continue using E-commerce. The SMEs are likely to continue adopting E-commerce when organizational readiness is high.

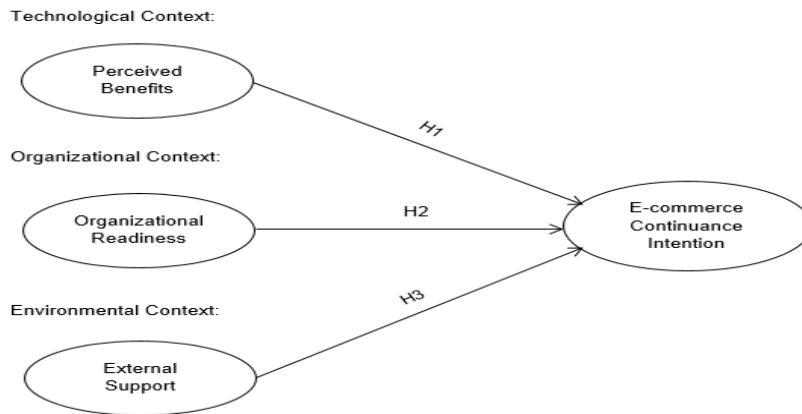
H2: Organizational readiness has positive influence on E-commerce continuance intention.

External Support

In this study, external support is referring to support from external parties such as vendors, consultants and government. External expertise play a crucial role in innovation adoption. SMEs normally will seek advice from external information technology (IT) consultant (Ramayah, Ling, Taghizadeh, & Rahman, 2016) due to lack of information system knowledge. Ghobakhloo, Hong, Sabouri and Zulkifli (2012) claimed that support from IT vendor also is a vital factor affecting IT adoption success within SMEs. Vendor could provide free or low-cost training and technical support to SMEs that adopting E-commerce. With the support from external expertise, SMEs should be more willing to continue to adopt E-commerce technology. Furthermore, Awiagah, Kang and Lim (2016) revealed that government support have positive and significant influence on behavioural intention to apply E-commerce technologies among SMEs. Government provides support such as subsidies and E-commerce training to SMEs can encourage adoption of E-commerce (Li & Xie, 2012). Thus, the E-commerce continuance intention among SMEs tends to be higher when the level of external support is high. Hence, SMEs will likely to continue utilizing E-commerce if they get the supports from external expertise and government.

H3: External support has positive influence on E-commerce continuance intention.

Figure 2: Research Framework



RESEARCH METHODOLOGY

A quantitative survey method was applied in this study. The respondents were the SMEs in services and manufacturing sectors from Perak. The information such as E-mail address, contact number and location of SMEs was obtained from the SME Corporation Malaysia’s website (<http://www.smecorp.gov.my>). Data were collected through self-administered questionnaires. Convenience sampling was employed in this research in order to obtain the respondents that are available for answering the questionnaire. As stated by Sekaran and Bougie (2016), “The appropriate sample size for most of the quantitative research is larger than 30 and less than 500.” Based on the thumb rule of “10 times” suggested by Hair, Hult, Ringle and Sarstedt (2017), “The minimum sample size should be ten times of the largest structural paths directed at a particular construct in the structural model.” Therefore, the minimum sample size for this study should be at least 30.

The measurements of questionnaire were adapted from previous studies. The scale items are based on a 7-point Likert scale ranging from strongly disagree (1) to strongly agree (7). Perceived benefits with 5-item were adapted from Ghobakhloo, Arias-Aranda and Benitez-Amado (2011), Saffu et al. (2008) and Alam, Ali and Jani (2011). Organizational readiness (5-item) were adapted from Kurnia et al. (2015) and Ifinedo (2011), and external support (6-item) from Ifinedo (2011) and Ghobakhloo et al. (2011). E-commerce continuance intention (5-item) were adapted from Wei, Marthandan, Chong, Ooi and Arumugam (2009) and Ifinedo (2011). The E-commerce adoption level was adopted from Rahayu and Day (2017), it was based on four levels: Level 1 (E-mail), Level 2 (Static website), Level 3 (Interactive Website), and Level 4 (Transactional website).

A total of 110 sets of self-administered questionnaires were sent to the respondents. The distribution of questionnaires was started on 7 January 2019 and continued for three months. There are only 46 sets of questionnaires were returned giving a 41.8% of return rate. Among the 46 sets of returned questionnaires, 4 questionnaires were discarded due to incomplete responses. Therefore, there are total 42 questionnaires were used for data analysis. The demographic profile is listed in Table 1.

Table 1: Demographic profile.

Category	Frequency	Percentage
Position		
CEO	4	9.5
Manager	14	33.3
Senior Executive	5	11.9
Top Management	8	19.0
Others	11	26.2
Gender		

Male	19	45.2
Female	23	54.8
Years of firm establishment		
Less than 6 years	9	21.4
6-10 years	10	23.8
11-20 years	9	21.4
21-30 years	11	26.2
More than 30 years	3	7.1
Sector		
Manufacturing	31	73.8
Services	11	26.2
Number of employees		
Less than 20	18	42.9
20-50	14	33.3
51-100	5	11.9
101-200	5	11.9

DATA ANALYSIS

E-commerce adoption level among SMEs in Perak

The results revealed that 45.24% of the respondents are in the level 1; 9.52% are in the level 2; 19.05% are in the level 3 and 26.19% are in the level 4. Most of the SMEs in Perak are using the basic application of E-commerce (E-mail) for their business operation. Table 2 shows the results.

Descriptive Data

Table 3 shows the results of descriptive statistics. The mean value of all the variables range from 4.5 to 5.976 with the standard deviation ranging from 0.869 to 1.393. Perceived benefits showed the highest mean value at 5.976, while external support showed the lowest mean value at 4.5. The highest value of standard deviation showed by external support at 1.393 and lowest value showed by perceived benefits at 0.869.

Assessment of Measurement Model

Structural equation modeling is used to examine the proposed research model. Firstly, the convergent validity was examined. Main loading, average variance extracted (AVE) and composite reliability (CR) were used to assess the convergent validity. According to Hair et al. (2017), the main loading should be greater or equal to 0.7 and the threshold values for AVE and CR are 0.5 and 0.7 respectively. Based on the results showed in Table 4, main loading for all items exceeded 0.7 except two items (ES5 and CI3). The main loading of ES5 is 0.676 and CI3 is 0.605. Both items are retained as the AVE and CR of the variables have met the threshold value. Besides that, AVE ranged from 0.613 to 0.776, and CR were in the range of 0.893 to 0.945. AVE and CR of all variables exceeded the suggested threshold value.

Further, the discriminant validity was tested. Fornel-Larcker criterion was used to assess the discriminant validity (Hair et al., 2017). As shown in Table 5, the square root of AVEs are higher than all the off-diagonal values in their corresponding row and column. Besides that, Henseler, Ringle and Sarstedt (2015) suggested that Heterotrait - monotrait ratio (HTMT) value above 0.85 indicates a lack of discriminants validity. Based on the results presented in Table 6, the HTMT values ranged from 0.218 to 0.754. Hence, all the requirements of convergent and discriminant validity has been fulfilled.

Table 2: The level of E-commerce adoption among SMEs in Perak.

Level	Frequency	Percentage (%)
E-mail	19	45.24
Static website	4	9.52
Interactive website	8	19.05
Transactional website	11	26.19
Total	42	100.00

Table 3: Results of descriptive statistics.

	No. of items	Mean	Standard Deviation
Perceived benefits	5	5.976	0.869
Organizational readiness	5	5.262	1.083
External support	6	4.500	1.393
E-commerce continuance intention	5	5.476	1.194

Assessment of Structural Model

The results show that R² value for the E-commerce continuance intention is 0.588, which means 58.8% of the variance in E-commerce continuance intention can be explained by the variables. Based on the results of structural model showed in Table 7, perceived benefits and organizational readiness have positive and significant relationship with E-commerce continuance intention with $\beta=0.349$, $p=0.003$ and $\beta=0.564$, $p<0.001$ respectively. External support is found to be an insignificant determinant of E-commerce continuance intention. Thus, H1 and H2 are supported, and H3 is not supported.

Table 4: The result of measurement model.

Variables	Items	Loading	AVE	CR
Perceived benefits	PB1	0.839	0.626	0.893
	PB2	0.795		
	PB3	0.749		
	PB4	0.812		
	PB5	0.757		
Organization readiness	OR1	0.849	0.776	0.945
	OR2	0.870		
	OR3	0.894		
	OR4	0.909		
	OR5	0.881		
External support	ES1	0.843	0.613	0.904
	ES2	0.852		
	ES3	0.851		
	ES4	0.724		
	ES5	0.676		
	ES6	0.733		
E-commerce continuance intention	CI1	0.923	0.688	0.915
	CI2	0.917		
	CI3	0.605		
	CI4	0.778		
	CI5	0.881		

Table 5: Fornell-Larcker criterion.

	PB	OR	ES	CI
PB	0.791			
OR	0.626	0.881		
ES	0.388	0.406	0.783	
CI	0.632	0.709	0.185	0.829

Note: Values in the diagonal (in bold) represent the square root of AVE while the off-diagonal elements represent the correlation.

Table 6: HTMT values.

	PB	OR	ES	CI
PB				
OR	0.703			
ES	0.505	0.406		
CI	0.708	0.754	0.218	

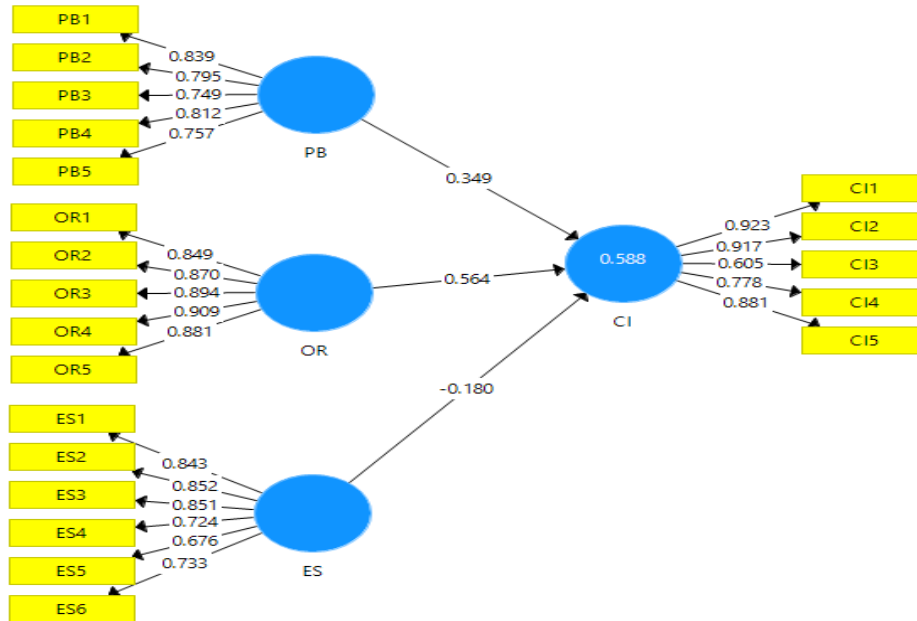
DISCUSSION AND CONCLUSION

One of the objectives of this study is to examine the state of use of E-commerce among SMEs in Perak. The result of this study revealed that most of the SMEs in Perak are still at the inception stage of E-commerce adoption. More than 45% SMEs are adopting only E-mail in their business operations. This is a critical issue in Perak. Thus, there is a need to encourage more SMEs in Perak to implement E-commerce at high level. According to Rahayu and Day (2017), SMEs at higher level of E-commerce adoption will get greater benefits from E-commerce adoption than those at low level of adoption. Besides that, this study also aims to find out the determinants of E-commerce continuance intention among Perak's SMEs. The research findings showed that perceived benefits and organizational readiness are significant determinants of E-commerce continuance intention among SMEs in Perak. On the other hand, the results showed that there are no significant relationship between external support and E-commerce continuance intention.

Table 7: Results of structural model.

Hypothesis	Relationship	Beta	SE	t-Value	P Values	Decision
H1	PB -> CI	0.349	0.119	2.936	0.003	Supported
H2	OR -> CI	0.564	0.133	4.243	<0.001	Supported
H3	ES -> CI	-0.180	0.140	1.286	0.199	Not supported

Figure 3: SmartPLS data and result for the propose model.



Perceived benefits is found to be significant in influencing SMEs' decision to continue the E-commerce adoption which is similar to past studies (Ahmad, Bakar, Faziharudean, & Zaki, 2015). If the perceived benefits of having E-commerce technology is greater, SMEs E-commerce continuance intention tends to be higher. SMEs in Perak agreed that E-commerce brings immense benefits to their businesses although most of them are still at a basic E-commerce adoption level. SMEs are more likely to continue the implementation of E-commerce if they are able to recognize the benefits that they have gained by adopting E-commerce.

Organizational readiness is found to have significant impact on E-commerce continuance intention. SMEs intend to continue the E-commerce adoption when they have sufficient financial and technological resources. Kurnia et al. (2015) also found that organizational readiness level positively affects the success of E-commerce adoption in Malaysian grocery retail sector. It is suggested that the higher the level of organizational readiness, the greater the SMEs E-commerce continuance intention. Therefore, if SMEs do not have adequate financial and technological resources to continue to invest in E-commerce activities, they are more likely to discontinue the implementation of E-commerce.

External support has an insignificant influence on E-commerce continuance intention. This is because most of the SMEs did not realize that there are financial aid and training that provided by government for promotion of E-commerce adoption. Scholars also found that external support from government has no impact on E-commerce adoption (Hamad, Elbeltagi, & El-Gohary, 2018). The SMEs tend to be more independent and achieve a higher level of E-commerce adoption by themselves. SMEs would continue implementing E-commerce even without support from external parties.

Theoretical and Practical Implications

This study investigated the determinants of E-commerce continuance intention among SMEs by using T.O.E. framework as the research framework. Results of this study confirmed that the T.O.E. framework is suitable for studying E-commerce continuance intention. The findings revealed that perceived benefits and organizational readiness are factors that have influence on E-commerce continuance intention among SMEs in Perak. It can served as a guideline for owners of SMEs, government agencies and other institutions to promote continuance usage of E-commerce in SMEs. Government agencies could set up seminars to unveil the benefits that can gain from E-commerce adoption in order to encourage more SMEs adopt the E-commerce at high level. In addition, owners of SMEs should actively participate in seminars which organizes by government. Thus, the owners of SMEs with deeper knowledge of E-commerce are able to recognize the long-run benefits of E-commerce. Moreover, government also could provide financial aid, incentives and training to SMEs in order to support the sustained use of E-

commerce. With government supports, SMEs would have sufficient financial and technological resources to continue to invest in E-commerce activities. Government could set up more advertisements to keep SMEs aware of the benefits gained from E-commerce and the financial and technological support provided by government.

Limitations and Future Research

There are some limitations in this study. First, this research focused on manufacturing and services sectors only in Perak state of Malaysia. Therefore, the findings might not applicable to other sectors such as agriculture, construction and mining. Secondly, the samples of this study were from Perak state in Malaysia. Due to difference culture and practice, the findings may not be generalizable to SMEs in other locations. Besides that, small sample size may restrict the generalizability of the findings.

Future studies could include a large sample size to generalize the results that may cover the scope of Peninsular Malaysia or possible both the west Malaysia and east Malaysia. Furthermore, researchers could extend the model by including other, untested variables such as organization size, cost and compatibility. The study also could be expand by adding potential moderator or mediator to enhance the conceptual model.

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DETERMINANT FACTORS INFLUENCING THE INTENTION TO USE E-WALLET AMONG UNDERGRADUATES IN MALAYSIA

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Abstract

Nowadays, people are clustered into either using cards or cash in their daily transactions. The existence of Electronic Wallet (E-Wallet) helps to eliminate the large amount of business transactions using cards and cash. In fact, this technology is not newly introduced in Malaysia. Yet, it has become a hot topic ever since the visitation of Alibaba Group Chairman to Malaysia in March 2017. The purposes of this research are to explore the perception of undergraduates towards E-Wallet and the level of usage on the E-Wallet application. Besides, it is also to study various factors that influence the usage of E-Wallet. There are limited researches related to the influencing factors on the usage of E-Wallet have been carried out among the undergraduates, especially in Malaysia. Hence, the objectives of this research are to explore the potential factors that influence the intention of the undergraduates to use E-Wallet and to determine the usage level of E-Wallet among them. The main contribution is to provide an entire view of the current E-Wallet phenomena which can help the mobile apps developers or service providers to have a better understanding of the consumers' behaviour on the E-Wallet activities and usage. It will improve and refine the current existing services.

Keyword: E-Wallet, Undergraduates, Intention, Malaysia, UTAUT

INTRODUCTION

Electronic Wallet (E-Wallet) or also known as Digital Wallet is a virtual cashless service. It is used to replace the cash by linking the individual's bank account to make payments. Withdrawal of money from the Automated Teller Machines (ATM) for purchasing is no longer needed as the person can present his/her mobile phone to the merchant by scanning the Quick Response (QR) codes in order to perform the transaction in a short period of time. It has become an upcoming way of purchasing goods and services without any physical movement of cash. E-Wallet is convenient to be used as it implements secure transactions which connected with user's loyalty, credit or debit card. Users are allowed to explore various functions on it. For example, users can save their money by using AEON wallet which not only allows the user to make payment, it is also able to connect the member card with the wallet to earn points when the users are purchasing at the stores. Later, some of the collected points can be redeemed as cash vouchers (Gazi, 2019).

According to Thornton (2018), countries such as Mexico, India and Thailand are relying more on cash payments whereas in China, E-Wallet (e.g. Alipay) is commonly used to make payment. Aldama (2017) stated that China is the country which leading the online payments. In China, it is very common that the customers pay the bills using Alipay offered by Alibaba or WeChat Pay provided by Tencent. This is because they are less likely to bring cash along with them because E-Wallet has become their primary payment method. Vice president of Alibaba group stated that the customers believe in Alipay as it is easy to be used (Aldama, 2017). Alipay and WeChat Pay have built up the credibility in the society and enable to implement the mobile payment in the industry successfully.

Recently, there are many E-Wallet applications such as Touch 'n Go Digital (TnG), WeChat Pay, GrabPay, Boost, BigPay, and AEON Wallet implemented in Malaysia (Oh, 2018). These service providers seek attention by offering various rewards which can bring benefits and convenience to the users. Discounts are given to the customers on certain products when using the applications and providing bill paying services. In other words, money and time are easily saved when E-Wallet is used to pay bills. For instance, WeChat Pay allows the user to send red packet and Boost introduces shake rewards, which is cash back for every transaction. As for TnG, it allows

the user to top up TnG card with their E-Wallet application. As reported by The Star (2019), TnG Digital (TnGD) has organized the first-ever cashless Ramadan bazaar at Kampung Baru, Kuala Lumpur where more than 400 stalls in the bazaar are using E-Wallet to perform the payment. This innovation event has attracted many visitors try to use E-Wallet in the bazaar. This event has successfully shown that the E-Wallet can be a useful payment method to perform transaction in Malaysia.

Smartphone has gradually become part of the important electronic devices in the daily life. According to Hand Phone Users Survey conducted by Malaysian Communications and Multimedia Commission (MCMC) (2018), the percentage of smartphone users has risen from 68.7% in 2016 to 75.9% in 2017. The increasing number of smartphone user will encourage the usage of E-Wallet. Yet, MCMC indicates that there are only 52.7% of the people trusts the service providers will keep their data safe and 21.7% of the people do not trust the service providers. So, it may be one of the issues to decrease the usage of E-Wallet. According to Nielsen (2016), only 41.1% of respondents in the range of 15 - 20 years old and 53% of respondent in the range of 21-34 years old are willing to use mobile application to make payment. Most of the respondents are not likely to use mobile application to do payments. A report from Bank Negara Malaysia (BNM) has shown that payment using mobile phone may be a trend in Malaysia as consumers are getting more familiar to mobile payment. The number of mobile banking accounts in 2011 has risen sharply from 1.6 million to 11.5 million in 2018 (Lee & Daniel, 2018). The adoption level of E-Wallet has significantly increased from 0.8 million subscribers in 2017 to 3.4 million subscribers at the end of June 2018 (Lee & Daniel, 2018). This shows that Malaysian starting to accept and willing to adopt the new technology.

However, there are still many Malaysian refuse to use E-Wallet due to certain circumstances. Although there are numerous of technical challenges for the implementation, the Chief Executive Officer (CEO) of Boost E-Wallet application, Chris Tiffin stated that Malaysia has the potential to become a cashless society. Nair (2018) further elaborated that adoption of E-Wallet is encouraged for the consumer so that it can change their behaviour towards cashless transactions as the cash transaction has been the normal practices. Some people still refuse to adopt E-Wallet due to the convenient of online banking, debit and credit cards. The iPay88 co-founder and executive director, Chan Kok Long stated that currently E-Wallet is not widely accepted by the consumer in Malaysia as they are not aware that it is easy to be used for their daily living (Yai, 2017). In addition, an Internet Users Survey had been conducted by MCMC in 2017. As stated by MCMC (2017), the number of consumers' e-Commerce participation has increased from 35.3% to 48.8% compared with the previous year. The main challenge of e-Commerce adoption is the consumers prefer to visit the physical stores, lack of skills, and concern on the security and privacy issues. It shows that the consumers are still lack of confidence and trust on the technology, which become one of the factors that affects the intention to use of E-Wallet.

As mentioned by Oh (2018), BNM have issued 37 non-bank e-money licenses and unofficially, there are over 40 licenses already issued. In addition, PricewaterhouseCoopers (PwC) (2018) shows that the adoption level is still remains low and only 22% of the respondents are E-Wallet users even though different E-Wallet service providers are available. From the survey, the key concerns from the E-Wallet users are low merchant adoption, security risk and poor user interface design. Therefore, this research is likely to conduct a study on the intention to use E-Wallet among the undergraduates. The objectives are to determine the level of intention to use E-Wallet and explore the determinant factors that influence the intention of using E-Wallet among the undergraduates in Malaysia.

The organization of this paper is structured as follows. Literature review is demonstrated in the second section. It is followed by the discussion on Information System Theory. Methodology is explained in the fourth section and discussion with conclusion are elaborated in the last section.

LITERATURE REVIEW

E-Payment is one of the subset of e-Commerce. It transfers the information from one terminal to another terminal by using special appointed peripheral devices. It includes credit cards, stored value systems (i.e: paypal), payment services (i.e: visa checkout). Besides that, mobile payment system which the credit card is attached with smartphone or with near field communication chips

(NFC) used by applepay, and Samsung pay. In addition, Digital cash (i.e: BitCoin) which used the algorithm to generate a unique authenticated token and represent it as the cash value or virtual currencies. The Digital cash can be used to purchase the virtual goods through electronic medium (Laudon & Traver, 2016). E-Wallet is another form of E-Payment. It is used to store the personnel information including name, date of birth, living address, debit and credit card information that are used for shopping cart checkout activities. E-Wallet users just need to show the QR code to the merchants to perform the credit transaction. Although E-Payment provide benefits to consumer, there are some issues always hinder the intention to use, for instance the security issue. Security and privacy issues have always been the challenge in the acceptance of E-Wallet. There are numerous of previous works emphasize this issue where the public thinks that their information will be collected and exposed while using E-Wallet due to weak security (Mohammed et al., 2016). Besides that, security and privacy are two important aspects in risk factors that may affect the user's intention to adopt the e-transaction (Mahad et al., 2015). Security is the important aspect that needs to be further explored in E-Wallet and mobile shopping (Olsen, Hedman, & Vatrapu, 2011).

Hidayanto et al. (2015) performed a research on the study of payment characteristic and behavior intention in E-Payment adoption. Their work investigates on several variables (anonymity, privacy, traceability, security, authorization type, trust, reliability, convertibility, easy of use, interoperability, scalability, efficiency, applicability). In addition, some variables from the existing Information Systems Theory – Diffusion of Innovation (i.e relative advantage) and theory of planned behavior (i.e: social influence and subjective norm) are also explored in the authors work. There are 203 Indonesian consumers are involved in the research. The results show that the consumer will adopt the E-Payment when they find that it brings benefit to them. The results also reflect that the easy of use, privacy, trust, security, convertibility either directly or indirectly influence the intention of consumers to adopt it. Sahut (2008) has applied Technology Acceptance Model (TAM) to investigate some factors influencing to E-Wallet. The author concluded that the key of success on payment methods rely on the security, anonymity of transactions, cost of transactions and plurality of functions. In addition, the author stated that banks neglect it although it is known by them.

Trivedi (2016) conducted a study that focuses on the usage of E-Wallet by the Generation-Y in India. The author applied TAM as Information system theories and combined with several variables (trust and self-efficacy) to moderate the attitude and behavior of intention to use E-Wallet. In the proposed model, perceived usefulness, perceived ease of use, and subjective norm show that mediate with the attitude and lead to the behavior of intention to use E-Wallet among the Generation-Y in India. Besides that, Junadi and Sfenrianto (2015) had proposed to investigate several factors (culture, perceived security, performance expectancy, effort expectancy, and social influence) that influence the intention of consumers to use E-Payment system in Indonesia. The authors applied Unified Theory of Acceptance and Use of Technology (UTAUT) model by integrating with two external variables (culture and perceived security) to strengthen the model based on the national context. The target consumers are the users which use Lazada, Qoo10, Rakuten, Bhinneka and Blibli as the e-Commerce applications because the applications are popular among Indonesian.

As discussed in literature review, there are limited works that perform research on the E-Wallet in Malaysia. Besides that, there are more than 40 non-bank e-money licenses available in Malaysia. It can create a chaos on Digital Wallet due to difference technology characteristics for the mobiles apps. Therefore, this research is likely to apply the UTAUT model to determine the user acceptance of E-Wallet. At the same time, it is also used to access the E-Wallet adoption model which may bring economic impacts to Small and Medium Enterprises (SMEs) and increase the E-Wallet adoption rate in Malaysia.

INFORMATION SYSTEMS THEORY

Several frameworks are used to explain the influence on users' acceptance towards new technologies such as Theory Acceptance Model (TAM), Theory of Reasoned Action (TRA), Theory of Planned Behaviour (TPB), and Unified Theory of Acceptance and Use of Technology (UTAUT).

Theory of Reasoned Action (TRA)

In TRA, the individual's adoption behavior can be determined by the individual's intention behaviour. The proposition of TRA is when the individual's behavior is conscious and voluntary, the intention behavior will be affected by the attitudes and subjective norms. People will consider the consequences of their behavior before they engage and determine whether to conduct or do something. In personal behavior, the most direct influence on human behavior is the behavioral intention. Attitudes and the subjective norms are the main factors in determining the behavioral intention. The more an individual exhibits towards positive behavior, the greater that he or she has a positive behavioral intention and vice versa (Lin, Wu, & Yang, 2011).

Theory of Planned Behaviour (TPB)

TPB is the extension of TRA and it is one of the theories that broadly used in the studies of technology acceptance. TPB explains that an individual's behavior is jointly influenced by attitudes, subjective norms and perceived behavioral control. Attitudes refer to the degree where the person has favourable or unfavorable evaluation of behaviour. Subjective norm is the perceived social pressure of whether to perform the behaviour or not whereas perceived behavioural control is the individual's belief in the ease to execute the behaviour.

Theory Acceptance Model (TAM)

TAM was developed by Davis in 1989 and was derived from TRA. TAM is used to explain the usage of an information system which depends on user's belief and intention. Two determinants of salient belief are Perceived Usefulness (PU) and Perceived Ease Of Use (PEOU). PU and PEOU are the two important factors which can be used to explain the user's adoption and intention for technology. PU is the degree where an individual believes that using a particular system will enhance his or her job performance and PEOU refers to the degree where an individual believes that using a particular system will require a little effort.

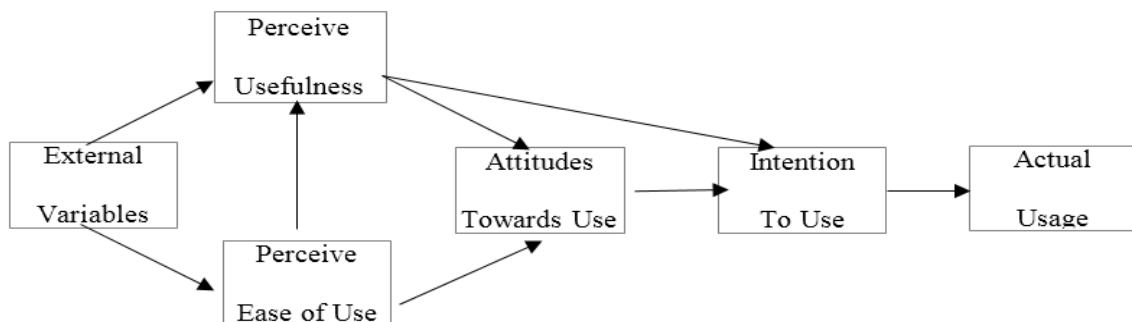


Figure 1: Technology Acceptance Model

Unified Theory of Acceptance and Use of Technology (UTAUT)

In UTAUT, it has gone through a review and consolidation with the constructs of eight information system models in the previous works. It can be used to explain the information system usage behaviour such as TRA, TPB, TAM, motivational model, a combined theory of planned behaviour/technology acceptance model, a model of personal computer use, Diffusion of Innovations (DOI) theory, and Social Cognitive Theory (SCT).

There are four constructs in this framework that have a direct relationship with behavioural intention, performance expectancy, effort expectancy, social influence, and facilitating conditions. Besides that, there are also four demographics variables such as moderator (gender, age, experience and voluntariness of use).

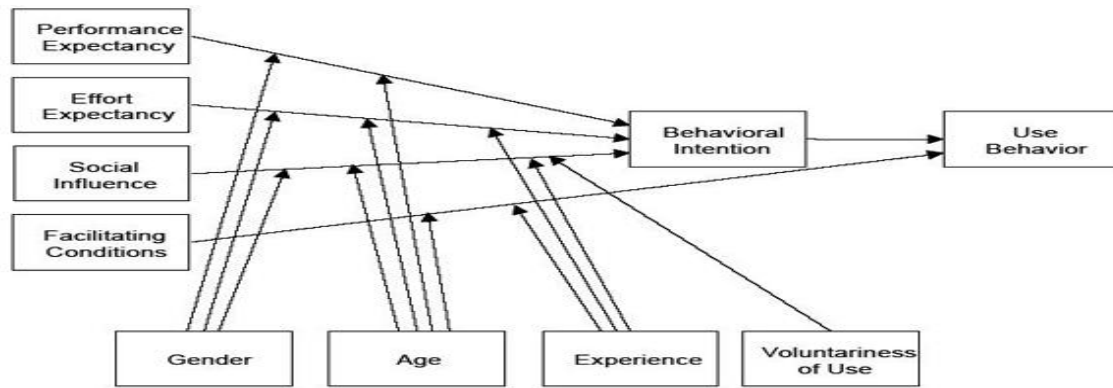


Figure 2: Theory of Acceptance and Use of Technology

In the model, performance expectancy is referred as the degree to which the individual believes that he or she can achieve better job performance when using the system (Venkatesh et al., 2003). For this research, performance expectancy refers to the usage of electronic payment systems will provide some benefits in online transaction in term of speed, security and convenience. Secondly, effort expectancy is referred to the degree of ease is related to the usage of the system (Venkatesh et al., 2003). For this research, effort expectancy refers to the usage of electronic payment systems to ease the job easily without additional skills. Thirdly, social influence is referred to the degree to which the individual perceives that others believe that he or she should use the new system (Venkatesh et al., 2003). For this research, social influence refers to the usage of electronic payments systems are influenced and encouraged by the family members, friends, and organizations. Lastly, facilitating conditions is referred to the degree to which the individual believes that the organizational and technical infrastructure are exists to support the use of the system (Venkatesh et al., 2003).

This research adopts UTAUT model and proposes a conceptual framework to determine the factors influence the intention to use E-Wallet among undergraduates. UTAUT model is the consolidation of several popular frameworks (TRA, TPB, SCT, and TAM). It is able to strengthen the explanation for adoption and provide predictive efficiency up to 70% (Oye, Iahad & Rahim, 2014). This research will adopt the model proposed by Junadi and Sfenrianto (2015) by integrating with culture constructor. Basically, it is used to explore Indonesians' intention to use e-payment system. Hence, this research will apply the same model, but in the Malaysia's context. The propositional statements are stated as follows:

P1: There is a positive relationship between culture and intention to use E-Wallet among undergraduates.

P2: There is a positive relationship between perceived security and intention to use E-Wallet among undergraduates.

P3: There is a positive relationship between effort expectancy and intention to use E-Wallet among undergraduates.

P4: There is a positive relationship between performance expectancy and intention to use E-Wallet among undergraduates.

P5: There is a positive relationship between social Influence and intention to use E-Wallet among undergraduates.

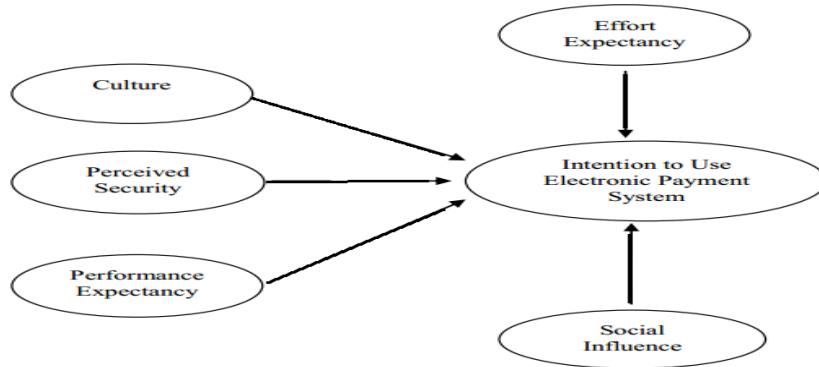


Figure 3: The proposed model for factors influencing consumer's intention to use E-Payment system in Indonesia (Junadi & Sfenrianto, 2015)

RESEARCH METHODOLOGY

This section discusses on the methodology of this research. According to Sekaran and Bougie (2009), quantitative method is begin with observation, preliminary information gathering, theory formulation, hypothesizing, further scientific data collection, data analysis, and deduction. The method is suitable for this research. Therefore, the methodology in this section will be elaborated based on Sekaran (2003) and Sekaran and Bougie (2009). The details are stated as follows:

Observation

Basically, observation is the initial step of the methodology. The sense will be changing according to the environment, such as new behaviours, attitudes and feelings.

Preliminary information gathering

The second step will be the information gathering. The relevant information will be gathered and obtained based on the research objectives and scopes.

Theory formulation

The information obtained from the previous step will be inserted into the existing theory or model. The formulation of theory is to integrate all the information through the logical manner. This is to ensure that the factors and problems can be conceptualized and tested using the theoretical model.

Hypothesizing

After the theory has been formulated, it will be continued with Hypothesizing. Some testable hypotheses or educated conjectures can be generated based on the variables which associate with the theorized network.

Further Scientific Data Collection

When the hypotheses are developed, data for every variables should be collected for further analysis. This is because the data are needed to test and verify the hypotheses.

Data Analysis

The data collected will be analysed in this step in order to validate the hypotheses.

Deduction

Deduction is the last step in the methodology where the conclusion will be derived based on the results of the data analysis.

Therefore, methodology as stated will be adopted for the future work. The target respondent for this research will be the undergraduate students from the local or private universities. In addition, statistical methods will be used as the data analysis technique and SmartPLS is proposed to be used for data analysis (Ringle, Wende & Will, 2005).

CONCLUSION AND DISCUSSION

This research goes through a comprehensive reviews on E-Wallet in different perspectives and contexts. The undergraduates from various universities have different preferences and skills towards E-Wallet. In this research, culture and perceived security are highlighted. Besides, the fundamental UTAUT framework is also included in order to further explain the intention phenomena to use E-Wallet in Malaysia. The framework is based on IS – UTAUT framework, which is served as conceptual basis for further quantitative analysis.

This research also provides practical and theoretical contributions in this area. For theoretical contribution, a new interactive and multi-dimensional model is recommended by changing the allocated resources and experiment settings using UTAUT model. The results produced are able to assist the service providers or policy makers to enhance the design for mobile apps. As for practical contribution, it will extend the body of knowledge for e-Commerce technologies, especially on E-Wallet phenomena in Malaysia. Industries can provide an interactive, multidimensional and concise apps and models that can assess factors influence on intention to use E-Wallet among undergraduates. Besides that, it will also enhance the SMEs business development.

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DOES SERVICE ORIENTATION PREDICT ORGANIZATIONAL PERFORMANCE? A STUDY IN THE MALAYSIAN FOOD SERVICE INDUSTRY

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Abstract

The Malaysian food service industry is currently operating in a competitive market. Restaurants and food outlets' profitability and viability are thus being compromised by this situation. To enhance their organizational performance, as well as to gain competitive advantage over others, restaurant and food outlet managers are turning towards improving the service orientation of their contact staff. As service employees like waiters and receptionists are the first to greet and meet customers, it is obvious that their service orientation would have an effect on diners experience, overall satisfaction and re-patronage. The objective of this study is to investigate the significant effects of service orientation properties, namely servant leadership practices, service encounter practices, human resource management (HRM) practices and service system practices on organizational performance. This quantitative cross sectional study utilizes primary data collected from 122 contact employees from restaurants and food outlets in Malaysia using convenience sampling. Various statistical analyses were conducted via the SPSS statistical package. The findings indicate that the properties of servant leadership practices, human resource management (HRM) practices and service system practices have positive and significant effects on organizational performance however, service encounter practices did not. The study concludes with the discussion and implications as well as limitations and suggestions for future research.

Keywords: Service orientation, Servant leadership, Service encounter, Human resource management, Service system, Organizational performance, Food service industry.

INTRODUCTION

The food service industry is a multibillion dollar industry worldwide. It is no different in Malaysia. The food service industry had contributed almost 10 billion USD to Malaysia's economy in 2012 (AAFC, 2014). A good example is Mamak restaurants in Malaysia which generated a whopping RM8 Billion to the Malaysian economy in 2017 (Othman et al., 2018). The annual growth rate of 5.1% in food and beverage establishments from 2010 to 2015 further illustrate the growth of the food service industry and its contribution towards the Malaysian economy (DOSM, 2016).

Eating out in restaurants and food outlets is a popular preoccupation with many people, and in the Malaysian context, it is not only seen as a need, but also used as a social means for interaction (Perry, 2017). With more disposable income, people are more willing to spend their hard earned money on enjoying a meal in a restaurant with their friends and families. This common practice of eating out gives birth to the culture of spending quality time with the loved ones during meal time. Dining at a restaurant thus becomes the opportunity to build stronger relationship between parents and children, or between friends. Similarly, teenagers or adolescents have this 'Mamak' culture where they will gather together at 24 hours restaurants to chat or watch sports tournament regardless of their gender and occupation (Ali & Abdullah, 2012).

Not all eating out in restaurants are due to social interactions, but also due to need. Urbanization has played an important role in the changing eating habits of Malaysians. More and more Malaysians are eating out due to convenience and lack of time. Young urban adults do not have the time, skill or inclination to cook for themselves, Similarly for families, with both parents busy working, less and less of them have time to cook and eat in. Restaurants and food outlets thus becomes the primary option of filling up the stomach of the family members (Ali & Abdullah, 2012).

Thus, it is no wonder that the growth of the food service industry in Malaysia has been robust. However, with more and more entrants into the already saturated market, existing food service operators are facing pressure to survive. As reported in the Star newspaper, for every one restaurant that opens another closes down, giving it a 50% chance for success (The Star, 2013).

Food service outlets need to find an edge to differentiate themselves from the rest of the pack. Service is one of the significant factors that decide the profitability of service organizations, not only those in the same geographical area but also those that are thousands miles away (Tekin, 2017). Competent contact employees are one of the main elements that help organization that are involved in service sectors to survive the harsh competition (De Villiers, 2015).

The interaction between contact employees of food operators and their customers will affect the performance of the organization (Yang, 2012). This is due to the situation where contact employees are the one who normally have face to face interaction with the customers. Contact employees act as the company representatives, which their attitudes, behaviors and skills have the opportunity to strengthen or weaken their company's image, customer satisfaction and customer loyalty (Choo, 2016). Therefore, it is important to understand contact employees' ability and desire in terms of their service orientation that is relevant to service performance (Popli & Rizvi, 2015).

Researchers in the past have postulated that contact employees with high service orientation will provide higher quality of services to the customers (Beatson, Lings, & Gudergan, 2008), which will eventually lead to higher retention of customers and higher profit of an organization (Tekin, 2017). Thus, the objective of this study is to investigate the properties of service orientation, namely, service leadership, service encounter, human resource management (HRM) and service systems on the food service operator's organizational performance.

LITERATURE REVIEW

Service orientation and organizational performance

Organizational performance does not have a definition that is universally accepted despite the situation where it has been a variable that have been heavily studied. Different researchers and scholars had different views on organizational performance. Moullin (2007) indicated that organizational performance is a process that measures the value delivered by the management to the stakeholders. This is supported by Antony and Bhattachatyaa (2010) as they viewed organizational performance as the evaluation and assessment tool for identifying the success of an organization. Despite the vast amount of different views of organizational performance that had been proposed by different researchers or scholars, researchers do share a common belief where organizational performance is referring to the results that is achieved by the organization.

Researchers have postulated many predictors for successful organizational performance, and one of them is service orientation. One of the earliest definitions of service orientation was by Hogan et al. (1984) who defined it as the ability to foresee, recognize and fulfill the needs of customers. Whilst Borucki & Burke (1999) defined is as a characteristic that exerts top down influences on the performance of contact employees, which has significant impact on the satisfaction of customers.

According to Kim et al. (2005), an organization's effort of promoting service orientation among contact employees would have significant effects on the success of the service based organization. Their research in the restaurant context found that service orientation that prioritized customers was positively related to the performance of the restaurant. Similarly, Tekin (2017) viewed service orientation as the significant determinant of organizational performance especially profitability of the organization. Positive relationship that was found between service orientation and business outcome in the study by Benyoussef et al. (2017) further verified the view of Tekin (2017).

Based on past research, this study proposes that the properties of service orientation, namely servant leadership practices, service encounter practices, human resource management (HRM) practices and service system practices have significant effects on food operator's organizational performance.

Servant leadership practices

One of the earliest proponents who suggested that leadership as one of the main components in developing and maintaining service orientation was Schneider & Bowen (1985). Servant leaders

refer to leaders who empower others to achieve the standard of services by leading with examples and actions (Heskett et al., 1997). It was believed that service climate established by servant leaders had the ability to affect employees' service behaviors and the outcomes of the organization (Heskett et al., 1997; Hunter et al., 2013).

A number of studies have found that servant leadership practices had a significant effect on organizational performance. The study by Church (1995) found that the unit level performance in organizations was influenced by leadership behaviors of leaders. Similarly, the study by Hunter et al. (2013) on the relationship between servant leadership and sales performance, found that the higher the servant leadership rating of regional managers, the higher the store's sales performance. Based on these findings, this study constructed the following hypothesis:

H1 Servant leadership practices have a significant and positive effect on organizational performance.

Service encounter practices

Service encounter practices refer to the ways an organization interacts with the customers. The organization would practice customer focus as well as employee empowerment to ensure that their contact employees provide the best service each and every time (Lytle & Timmerman, 2006). To have a positive service encounter, the contact employees should attend and meet the needs of customers to their satisfaction (Gonzalez and Garazo, 2006). Thus, the attitude of the contact employee would have a significant effect on the service encounter between the contact employee and the customer (Luk et al., 2013).

Existing research indicate positive service encounter practices have a significant effect on organizational performance. In the study done by Liao and Chuang (2004), they found that treatments received by customers are positively related to the retention rate and brand loyalty formation, which consequently lead to better organizational performance. Jayawardhena et al. (2006) found that the quality of the service encounter was directly related to customer satisfaction, thus influencing customer loyalty. This suggests that the customer would be more prone to re patronage, thus contributing towards the profitability of the organization. Based on these findings, this study constructed the following hypothesis:

H2 Service encounter practices have a significant and positive effect on organizational performance.

HRM practices

HRM practices refer to practices of human resource that help employees to achieve their greatest potential (Schneider et al., 1992). According to Johnson et al. (2018), the two most important HRM practices an organization should focus on are training and recognition.

This is because service training provides employees with the important basic skills that they would use to ensure that they provide the best service and satisfy their customers (Lytle et al., 1998; Schneider & Bowen, 1995). Satisfied customers contribute positively towards profitability, and ultimately overall improved organizational performance. Recognition and rewards also play a significant role in motivating contact employees both intrinsically and extrinsically to deliver excellent services. This is due to the fact that recognition and rewards are job resources that buffer the negative impacts of job demands, which will eventually motivate contact employees to display better performance (Bakker & Demerouti, 2008).

Several past studies have concluded the importance of HRM practices on organizational performance. The study by Wright and Kehoe (2008) found that the HRM practices of the organization had a positive relationship on performance. In a similar vein, Choo (2016) and Kusluvan et al. (2010) concur that the higher the training provided to service staff, the higher the ability of the service staff to fulfill customers' expectation, thus resulting in better organizational performance. Based on the body of research and findings, this study constructed the following hypothesis:

H3 HRM practices have a significant and positive effect on organizational performance.

Service systems practices

Service systems practices refer to the system used in delivering excellent service to the customers (Lytle et al., 1998). One of the ways to deliver excellent service is through the usage of technology. With the advancement of technology, customers are now more demanding in terms of service. Being made to wait a long time for service is no longer acceptable. They also expect more personalized services that meet their specific needs in a timely manner.

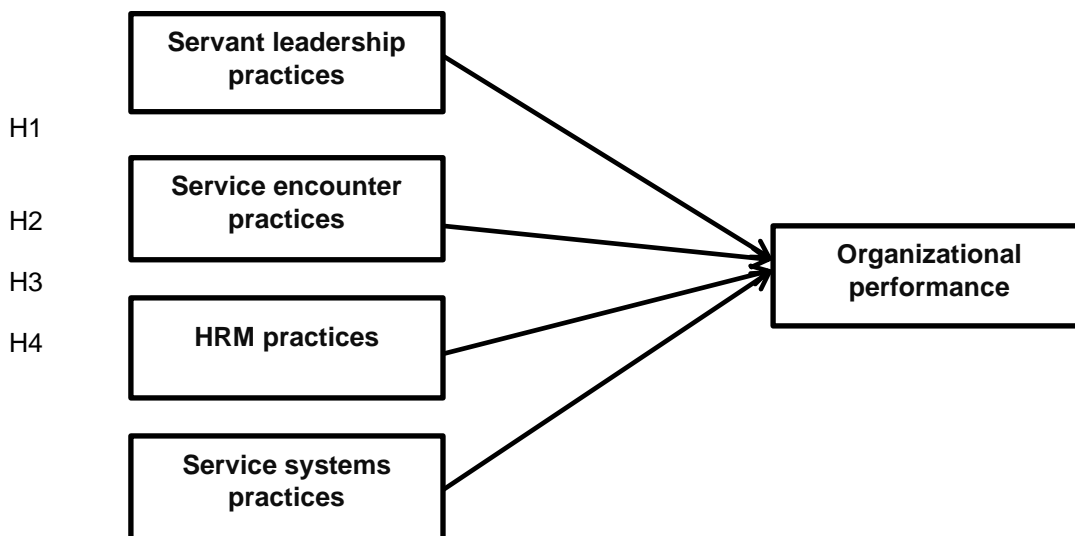
Lytle et al. (1998) postulated that service technology be one of the most critical ingredients that contribute to an organization's success as service technology competes to create and deliver excellent services that meet the expectations of customers. Therefore, it is imperative for food operators to invest in service system practices that can enhance their service quality to customers, if they wish to enhance their organizational performance.

A number of studies have found that service systems practices had a significant effect on organizational performance. The study by Pennings (1995) found a positive relationship between technology and organizational performance. Similarly, the study by Lytle and Timmerman (2006) in the banking industry found that performing banks had higher levels of technology used. Based on the body of research and findings, this study constructed the following hypothesis:

H4 Service systems practices have a significant and positive effect on organizational performance.

CONCEPTUAL FRAMEWORK

Figure 1: Proposed Conceptual Framework



The research framework of this study is as illustrated in Figure 1. The framework illustrates the relationships between the variables and hypotheses of this study.

RESEARCH METHODOLOGY

Research design

The research design for this study was a quantitative cross sectional design. This study was conducted in the Malaysian food service industry. The unit of analysis was individuals and comprised of contact employees working in restaurants and food outlets. In this study, contact employees are defined as employees who greet customers, take their orders, serve food and drinks and lastly provide bills to the customers.

Measures

A structured questionnaire which was administered online was used to collect the data. Reliable and valid scales were adopted from previous research and used to capture the responses of the respondents. Organizational performance was measured by 17 items which were adopted from Sadikoglu and Olcay (2014). To measure service orientation's properties, the SERV*OR scale adapted from Lytle et al. (1998) was used. The scale consisted of 18 items measuring all four fundamental properties of service orientation, which are servant leadership, service encounter practices, HRM practices and service system practices. All scales were anchored on a seven point Likert scale with Strongly disagree = 1 to Strongly agree = 7.

Data collection procedures

Participants for this study were recruited through convenience sampling and snowball sampling method. An e-mail which consisted of information of the study, informed consent, and a link to the questionnaire was shared by the researcher to known contacts. Respondents were required to read the informed consent, inclusion criteria and instruction in detail before answering the questionnaire. After completing the survey, respondents were requested to circulate the e-mail to their peers, colleagues, relatives or others who fulfilled the inclusion requirement of the survey. A total of 122 usable responses were obtained which were retained for further analysis. The collected data was analyzed using various statistical analyses to determine its validity, reliability and to answer the hypotheses of this study.

DATA ANALYSIS

Profile of the respondents

The profile of the respondents is presented in Table 1, based on frequency distributions and percentages. From the 122 respondents in this study, 54 (44.3%) were male and 68 (55.7%) were female. In terms of nationality, the majority of respondents were Malaysians, 114 (93.4%). Majority of the respondents were Chinese, 93(76.2%), followed by Others, 19(15.6%), Malays, 6(4.9%) and Indians, 4 (3.3%). In terms of age group, majority of the respondents, 52 (42.6%) were aged between 18 – 21 years followed by 43(35.2%) respondents who were aged between 22 – 25. Lastly, in terms of educational level, 43 (35.2 %) respondents reported having an undergraduate degree, 37 (30.3%) had diploma qualifications and 21(17.2%) reported having SPM or equivalent qualifications only.

Table 1: Profile of respondents

Characteristics	Frequency n = 122	Percentage (%)
Gender		
Male	54	44.3
Female	68	55.7
Nationality		
Malaysian	114	93.4
Non Malaysian	8	6.6
Race		
Malay	6	4.9
Chinese	93	76.2
Indian	4	3.3
Others	19	15.6
Age group		
18 – 21 years	52	42.6
22 – 25 years	43	35.2
26 – 30 years	20	16.4
31 – 35 years	3	2.5
Above 35 years	4	3.3
Education level		

SPM or equivalent	21	17.2
Pre University/STPM/Foundation	19	15.6
Diploma	37	30.3
Undergraduate	43	35.2
Postgraduate	2	1.6

Factor analysis

Factor analysis via principal component analysis with varimax rotation was used to validate the construct validity of the questionnaire. The objective of conducting factor analysis was to ensure that the measurement dimensions were operationally defined, to ensure that the most appropriate items in the measurements were used as well as to reduce unsuitable items that might affect the validity of the study. As suggested by Hair et al. (2010), the factor loadings for all independent variables were above the accepted level of 0.5, while cross loadings for all independent variables were below the accepted level of 0.35. The analysis extracted five factors with eigenvalues greater than 1. There were servant leadership practices (Eigenvalue = 2.40, variance explained = 60.06%); service encounter practices (Eigenvalue = 2.17, variance explained = 72.49%); HRM practices (Eigenvalue = 3.06, variance explained = 76.51%); service systems practices (Eigenvalue = 3.99, variance explained = 66.51%) and organizational behavior (Eigenvalue = 3.04, variance explained = 76.22%). The results of the factor analysis are reported in Table 2.

Table 2: Factor analysis results for variables

Variable/item	Servant leadership practices	Service encounter practices	HRM practices	Service systems practices	Organizational performance
Servant leadership practices					
SL1	.855				
SL2	.790				
SL3	.881				
SL4	.854				
Service encounter practices					
SE1		.865			
SE2		.871			
SE3		.817			
HRM practices					
HRM1			.886		
HRM2			.911		
HRM3			.915		
HRM4			.781		
Service systems practices					
SS1				.726	
SS2				.878	
SS3				.834	
SS4				.805	
SS5				.785	
SS6				.856	
Organizational performance					
OP1					.940
OP2					.950
OP3					.906
OP4					.666

Reliability analysis

The reliability of the measures was tested after factor analysis was conducted. The results in Table 3 shows that the items in the measurements are reliable as the Cronbach's alpha coefficient score is above 0.70, as recommended by DeVellis (2012).

Table 3: Reliability scores for the variables

Variables	No of items	Cronbach's Alpha
Servant leadership practices	4	.867
Service encounter practices	3	.809
HRM practices	4	.897
Service systems practices	6	.898
Organizational performance	4	.889

Regression analysis

To answer all the hypotheses of this study, multiple regression analysis was conducted. Table 4 reports the results of the regression analysis and shows the significant effects of servant leadership practices, service encounter practices, HRM practices and service system practices on organizational performance.

The results indicated that the F value of 75.017 is significant at confidence level of 0.05. The R^2 of .719 indicated that the four independent variables could explain 71.9% of the variance in organizational performance. The small values of the Variance Inflation Factor (VIF) ranging from 2.084 to 3.892 were well below 10.0, indicating no multicollinearity problems. There was also no auto correlation problem in the error terms as the Durbin-Watson value of 2.012 was within the acceptable range of 1.5 to 2.5 (Pallant, 2013).

In terms of effect size, Cohen (1988) suggested that a R^2 of .0196 can be considered small, a R^2 of .13 can be considered medium, and a R^2 of .25 can be considered large. Thus, based on Cohen's (1988) conventions, a combined effect of this magnitude by the four independent variables in this study can be considered large.

From Table 4, servant leadership practices, HRM practices and service systems practices were found to be significant, whilst service encounter practices was not. Therefore, the results indicated that hypothesis 1, 3 and 4 was supported, whilst hypothesis 2 was not.

Table 4: Multiple regression results

Variables	Unstandardized		Standardized	t	Sig	Collinearity	
	Coefficients	Std Error	Coefficients			Statistic	VIF
	B		Beta				
Servant leadership practices	.256	.095	.253	2.705	.008	.275	3.635
Service encounter practices	-.004	.086	-.004	-.049	.961	.306	3.267
HRM practices	.251	.066	.271	3.827	.000	.480	2.084
Service systems practices	.419	.097	.416	4.308	.000	.257	3.892

Significant at $p < 0.05$

$R^2 = 0.719$, $F = 75.017$, Significance $F = 0.00$, Durbin-Watson = 2.012

DISCUSSION AND IMPLICATIONS

The present results support a number of conclusions reached by previous studies. This study has identified that servant leadership practices, HRM practices and service systems practices has a significant effect on organizational performance.

Hunter et al. (2013) argued that servant leaders would lead their employees by providing good examples to their contact employees. This in turn would improve the service orientation of their subordinates which in turn translates to higher organizational performance. This is consistent with the findings of this study. This suggests that contact employees could be influenced to emulate their leaders, thus emphasizing the importance of the adage "lead by example."

Choo (2016) and Kusluvan et al. (2010) concluded that HRM practices such as training and rewards to be positively associated with organizational performance. Similarly, our study showed evidence of the positive relationship between training and rewards and higher levels of organizational performance. Employees who experience positive HRM practices may be "paying back" their organizations by being more positive, courteous and helpful towards customers.

It has been argued that the higher the service systems present, the higher the service orientation resulting in higher organizational performance of the said entity. The study by Pennings (1995) and Lytle and Timmerman (2006) support this argument. Similar results were found in this study. This suggests that technology can help improve the level of service imparted to customers by increasing the speed and efficiency, thus making customers happy and satisfied with the service received.

In spite of previous research that supports service encounter practices as a predictor of organizational performance, the results of this study did not support this hypothesis. This finding suggests that customers in restaurants and food outlets in Malaysia do not place much emphasis on the service encounter itself; instead they place more emphasis on the physical quality of the food itself. Thus, customers are willing to overlook the poor service encounter to eat the food in which they perceive to be delicious or desirable to them.

The findings from this study have several implications. In terms of managerial implications, restaurant and food operators may be able to achieve higher levels of profitability and success through careful management of the service orientation of their contact employees. Thus, managers of restaurants and food outlets must be aware of what service orientation properties are important to their customers and focus their service efforts on these properties. As servant leadership and HRM practices has been found to have significant effect on organizational performance, this has implication for both employee recruitment and training, as managers can concentrate on hiring employees who display appropriate leadership characteristics or implement training programs and rewards designed to enhance the positive service behaviors of their contact staff. As to service systems practices, restaurants and food operators need to invest their money on technology with focus on service speed, prevention and recovery. As service encounter practices seems to be insignificant, to continue to attract and retain customers, restaurant and food operators must instead focus on the taste, presentation and quality of the food served.

LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

When evaluating the findings of this study, it is always pertinent to consider the limitations inherent in the work. Firstly, the cross sectional nature of the research design limits the ability to infer causal relationships among the variables of this study. Secondly, this study was conducted in a single industry. While this has the obvious benefits of controlling for cross industry variation, it however limits the ability to generalize these results to other industries. There are several directions for future research. Inclusion of other employees in the food service industry, not only contact staff can be incorporated for a more even generalized response. A study on antecedents to service orientation, namely strategic vision and service vision, is warranted in order to understand its effects better (Kandampully & Solnet, 2005). Other variables such as service quality should also be considered. As this study was conducted using the cross sectional design, future research could be conducted as a longitudinal study so that relationships between service orientation and organizational performance be more accurately revealed. As it now stands, this

study represents a base from which future research into service orientation of contact employees in the food service industry can be undertaken and expanded upon.

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LEAN ADOPTION TOWARDS LOGISTICS PERFORMANCE: A PRELIMINARY STUDY IN PORT KLANG, MALAYSIA.

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Abstract

Lean has been extensively employed in the manufacturing sector in achieving considerable cost savings and quality enhancement through the elimination of unnecessary wastes. The use of lean in the services sector are considered still in the infant stage, however, it may be applicable to the business in logistics. Particularly, when the Logistics Performance Index 2010 – 2018 reveals that the competencies and quality of Malaysian's logistics firms shown a decreasing trend. The trend may implicate in giving a negative impression to the potential importers/exporters that the Malaysian logistics firms are incompetence as logistics service providers. Thus, the objective of this study is to explore on the level of adoption and practices of lean by logistics firms operating in Port Klang which able to create competitive advantages. The assessment aimed to identify the variables that indicate the successful lean adoption in the firms. This study employed a simple random sampling and approached 152 registered logistics firms with the Selangor Freight Forwarder and Logistics Association. The results indicate that 53.3 per cent of respondents had implemented lean practices with a varying degree of cost reduction, waste reduction and quality improvement. Practically, the findings implicate that lean methodology is applicable for improving the logistics operation's performance. The findings offer initial valuable insights for the logistics firms, logistics associations and government for improving the overall logistics performance. This study, however, is not free from any limitations. Expanding the survey to logistics firms operating outside of Port Klang may increase the response rate and generalization of the results.

Keywords: Lean, Adoption, Logistics Performance, Port Klang.

POLITICAL MARKETING FUNCTIONS AND NATION'S IMAGE: EVIDENCE FROM NIGERIA

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Abstract

There is a growing discussion around the importance of country's image owing to the impacts. However, some countries have not been able to explore the various avenues of either building a positive image or addressing battered image for prosperity. It is evident that one of the less explored avenues is political marketing. Studies has projected that political marketing has found a place in the mainstream marketing. It is in this regard that this review explored political marketing functions as an instrument of revamping Nigeria's image. This review opine that political parties can adopt this marketing perspective to revamp the nation's image. With qualitative approach option, political experts selected were interviewed while focus group discussions were organised among voters in selected local government areas of Osun State, Nigeria. From the information gathered, it was evident that political arrangement and electoral processes emphasised the need to adopt marketing techniques and approaches by parties and government as major tools in building a good image, that is relationship marketing that will facilitate the trust and help to gain competitive image in the voter's heart, instead of 'kleptocracy' that has been the practice in our political processes.

Keywords: Political Marketing, Marketing Techniques, Relationship Marketing, Image Positioning, Political Market, Political Organisation

INTRODUCTION

Marketing was recently expanded into politics for some reasons (Scammell, 1995). It is remarkable to note that politicians and their political parties are service providers, and are expected to see voters and citizenry as consumers within political marketplace. Politicians and political parties deal in a highly competitive market and must devise different approaches like service providers who have unique service obligations to different marketplaces. It is interesting to know that politicians and political parties of today have appreciated the adoption marketing philosophies into political space by constantly creating values for their constituents to improve quality of life. Modern politics have applied marketing techniques in political processes such as electioneering campaigns and grassroots mobilisation of voters to create, stimulate and achieve desired value (Stromback & Shehata, 2010). Political marketing entails communication with party members, voters and citizens of a defined territory.

Political scientist described political marketing as a new terminology in the field which implies the usage of marketing tools, techniques and methods in political process. In other words, political marketing is the outcome of the marriage between marketing and politics (Lees-Marshment, 2001). This involves political advertising, celebrity endorsements, involvement of professional consultants and campaign managers, online campaigning, mobile phone canvassing, segmentation, micro targeting and other tools build a competitive image for the party and their candidates (Prasad & Azeem, 2017). Political marketing is increasingly used in democratic political systems in which mass support is significantly important to sustain power. The influence of professional marketing has affected the working style of political parties. Parties became more market oriented and began to frame their programs and policies in tune with opinion polls and market surveys. Information revolution and globalization have played a vital role in changing the pattern and content of traditional political campaigning into one of the most professional and sophisticated marketing tactics. It is argued that if a political party implements the marketing philosophy, it will seek to meet voters needs and wants, thus producing voter satisfaction, and in doing so gain electoral support to meet its own goals (Lee-Marshment, 2006).

The rise of political marketing in the recent past has been attributed to the development of an investigative press, declining party loyalty, and changes in the political and electoral systems. In

particular, scholars have identified the expansion of the product, particularly image as having had a significant impact. There is evidence to suggest that political marketing has contributed to improved production between the politicians and voters. Especially apparent in the popular and academic literature on both political marketing and political product is the occupation with image and how much or little it affects the voter. Often the phenomenon of image in politics is said to have risen because of trust. However, image has almost as many meanings as the number of people who use its combined concepts from consumer behavior and political science to create a model of voting behavior in political marketing terms. Existing literature have dwell more on what marketers would view as tactical issues, though Butler and Collins (1996) show the impact of strategy and its importance in governing the character. Most of the electoral markets of the West are mature, the players are established and the positions are set (Harris, 2006) but this is not the same in most developing countries, especially Nigeria.

In spite of the advantages of political marketing, one of the most common criticisms of its use is the accusation that it can be abused. The reason behind this can be as follows: today's elections are won by the candidate/party that establishes the agenda through political deceit and voter manipulation, using money to win an election, and other uncivilized ways. Developing countries like Nigeria have suffered a setback because of their democratic failures. This have caused the nation negative image and challenged their reputation. Admittedly, reputation plays a significant role in the image of a nation and it is largely determined by certain factors such as politics. A reflection of nation image is her political activities and when the political circle is in crisis, the nation tends to have negative image (Fayomi, Chidozie & Ajayi, 2015). It is against this backdrop that this study explored political activities in Nigeria between 1999 and 2018 to x-ray the nation's image.

LITERATURE REVIEW

Nation's Image

Image is an idea of a thing, perhaps the essence of it than its physical propensities (Mitchell (1998). According to Holsti (1996), it is an individual's perception of an object, fact or condition in terms of badness or goodness as well as the meaning ascribed to, or deduced there from. On the other hand, nation is a sovereign state. In context, it can be said that nation's image is the perception of a country by people, home and abroad. Martin and Eroglu (1993) described it as the complete set of descriptive, inferential and informational beliefs about that given country. Nations' image can be appraised from multifaceted dimensions such as industrial development, industrial orientation, social, and political, among others. This study centers on political image of the nation as reported by Shawn (1991). According to Egwemi (2010), Nigeria's image swung between extreme positive to extreme negative at different times in her history. The political history of the country in selected period such as periods between 1960-1967, 1970-1983, 1999-2007) were positive while periods such as 1993-1999, and 2007-2010 were negative. Olujide, Adeyemi and Gbadeyan (2011) commented on shift in political strategies such as political rallies, speeches and personal contacts which are part of marketing to voters.

Political Marketing

Political marketing is built on the application of marketing management theory and theory of politics. It is built on the assumption that political activity could be seen as alien to traditional marketing conditions (Kaskeala, 2010). As Kotler (1999) stated, among the entities applicable to marketing most of them can be found in the political marketing, they are events, persons, places (partially), information and ideas, product, political organisation, political market. Political marketing is identical with the use of persuasive techniques in campaigns to promote both politicians and their policies. Political marketing can be seen as the outcome of the marriage between marketing and politics (Lees-Marshment, 2001). This includes evaluation and re-design of policy and electoral strategy in the light of studies of the electorate's concerns and thus political marketing of which they are addressed to. It encompasses the entire marketing process, from preliminary market study to testing and targeting (Maarek, 2001).

Political Product:

A political party, person/candidate or an ideology can be seen as a political product in political marketing. The success of the product mostly depends on the personal image, the candidate's past life or the party itself. On account of multi-dimensional nature of the political product, it might

be said that a “political concept” may be used instead of a “political product” in political marketing (Butler, Patrich, Harris, & Phil, 2009). However, since the same marketing techniques are applied to the marketing of the political product as in the marketing of a traditional product, generally the term political product is used in the literature. According to Butler and Collins (1994), the political product constitutes three different dimensions and they are: product’s multi-component nature, the importance of customer or voter loyalty, and its adaptability.

Product Function:

The functions of political marketing are pre-requisites for successful political marketing management. Politics is increasingly being influenced by marketing, and the same methods used to market products are being used by politicians to market themselves and their ideas. As a matter of fact the same principles that are used in the commercial marketplace are also applicable in the political marketplace. For example, nowadays, politicians even government now make use of relationship marketing for building profile of candidates or policies just exactly the way organizations lobby customers in a marketplace. Most of successful companies have a market orientation and are constantly engaged in creating value for their customers. In a broader way, marketers anticipate their customers' needs, and then constantly develop innovative products and services to keep their customers satisfied. There are researchers especially among political scientist who believe that Political marketing is irrelevant to politics, but (Henneberg *et al.*, 2007) described elections and democracy as a competitive “market place”, where voters and citizens are “consumers”. This therefore explains that in political marketing practice, there should be an exchange between political parties and electorate in the electoral market. Like mainstream marketing each political party has to offer some products which they want to sell in the market. Here party wants to market its product which is the promise of a good government. In some cases, the product may be image of the candidate, an ideology or certain specific foreign policies. Hence the entire marketing process is designed to market the product. In 2014, the main product of All the Progressive Congress party was to sell Muhammed Buhari brand and good governance based on the “change ” mantra.

Cost Function:

One of the main functions of mainstream marketing is to sell a product which is cost effective compared to other products in the market so that customers get greater monetary satisfaction. In political marketing, cost function refers to the management of attitudinal and behavioral barriers of voters through calculated campaign strategies and image positioning. The voters should receive all the information regarding the product and able to build a trust without any negative influence.

Communication Function:

Communication involves the function of informing the primary exchange partner of the offer and its availability. It is often seen as the heart of political marketing. For a political party, it implies, providing political content, political ideas and future programs but also aiding the interpretation and sense making of a complex political world. Often the communication function involves simplification of political messages, concise political stand and others. The communication function interacts with the campaign delivery aspects of the distribution function-the latter provides the medium while the former defines the content. The communication function prescribes a dialogue with the exchange partners – a multidirectional flow of information and shared agenda setting

Parallel Campaign Management Function:

This function describes the requirement of co-coordinating the campaign management activities of a political party with those of parallel organizations such that the party will seek the views of opinion leaders, pressure groups and others. Coordinated and synergic use of managerial activities allow for a more efficient deployment of campaign resources. Furthermore, the use of parallel campaigns and the endorsements by other organizations can increase the trustworthiness of the political messages.

Internal Cohesion Management Functions:

Besides the external management aspects, internal structure and functions of the political party also needs to be managed professionally (Internal democracy). This function is concerned with the relationship with party members and activists, as well as the spokespersons. The internal

marketing functions play a critical role in creating internal stability and therefore the credibility of the party regarding its outside image. For instance, in Nigeria some few leaders within the party will impose their own anointed candidates and presented them as flag bearers of the party in an election against the interest of party members.

Political Organisation:

A political organisation is any entity that is in the political process. It is engaged in political activities that aimed at achieving clearly defined political goals that develops political system. The efforts of political organizations are to win hearts of the electorate through public elections (Butler & Collins, 1996). Hence, it could be said that a political organisation may be a party or a support group behind a candidate. Butler and Collins (1994) have revealed three important characteristics of a political organization, which are: the amateur-like nature of the organisation, its traditionally negative perception of marketing, and its dependency on volunteer workers. Unlike the traditionally organizations, a political organization is usually made up of amateurs that have no formal training or education regarding their jobs.

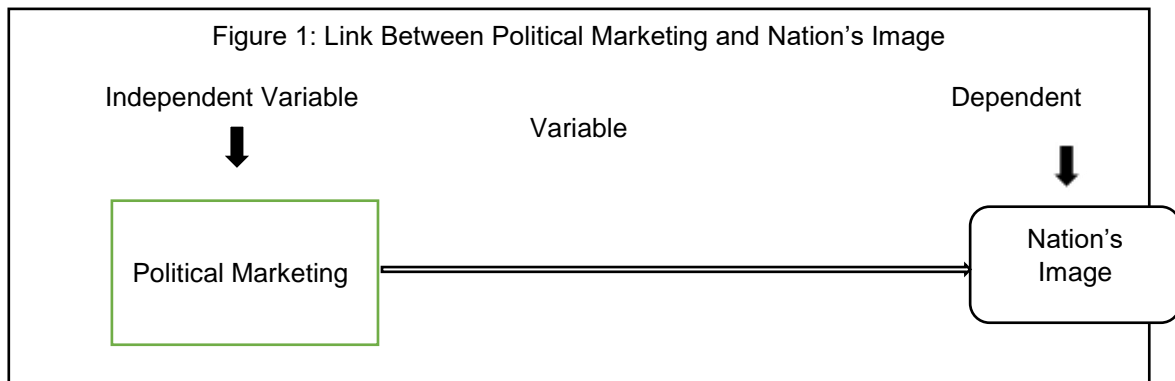
In the light of these, it is obvious that there is a negative approach towards marketing in political marketing as it consists mostly of amateurs and volunteers. Marketing has always been seen as unethical and superficial to be used in politics. In addition to this, it is believed that in adapting marketing theories to politics, the real substance of politics would suffer under the candidates' need to concentrate on only simplified and popular topics (Smith & Saunders, 1990).

Political Market:

It is important to know the political markets and the positions of the parties to understand the perception of the voters and their attitudes toward the parties. In political marketing, the target is the voters. They may have their own perceptions of a specific political party regardless of the party's position. Hence, the voter uses his/her own perception in voting and this makes it more valid and countable information than the party's self-declared positioning. There are plenty of different elements that shape political structures including ideologies, values, economics, cultures and traditions. However, the power of these elements may vary in different countries. For instance, according to Polat and Kulter (2008), religions factor is more effective in certain countries such as Turkey, Israel and India than the others. They assert that it creates a strong bond between the voters and the parties. Kotler and Levy (1969) define a market as made up of people and organizations that possess some kind of resources and an objective to trade them. This means that a political market consists of voters that have the potential to trade their votes in return for some value, and the political organizations and candidates who in return are offering their products and services for the voters. In a functioning market, there is the competition that also needs to be taken into consideration and this is made up of the competing political parties and their candidates in the political market. According to Gemmeson (1987) the political market differs from the traditional market place where an exchange is considered as a separate one-time event. Compared to the traditional one, an exchange in political market happens over a long period of time in which the political organization or candidate finally keep the promise that has been made to the voters in exchange for the votes during the election.

Since voting is seen as the symbol of a democratic society, the exchange event has already a significant importance to the consumer. In some cases, the exchange event can be of a greater importance to the consumer than the actual outcome (Butler & Collins, 1994). Voting also shows social affirmation. This means that voter's voting preferences show the extent of their belongings to a certain social group. For instance, voters in Ireland are quite divided between their religious views whereas in Belgium the language and the culture issues are given more priority (Kaskeala, 2010:21). This is important as social issues of such scale hugely restrict the market and the possibility for political organizations to bring up new issues. In most Western democracies, the political markets are mature that the competition between the political groups has become settled into its patterns and the transactions in the market place are completed without too much of a fight. On account of the nature of the political market, the competition is always at its fiercest just before the elections (Kaskeala, 2010).

CONCEPTUAL FRAMEWORK



For the purpose of this review, Figure 1 shows that proxies of political marketing contribute to nation's image.

RESEARCH METHODOLOGY

The study adopted qualitative technique with exploratory research design to generate knowledge and a better understanding of political marketing and nation's image. Study I interviewed political experts to seek knowledge of issues as it affects the nation's image while study II, focus group discussion was held among voters.

Participants in Studies I and II were conducted among political experts and voters respectively who were all in Osun State. The participants in study I were recruited from media houses in the State because they are political analysts. Twenty (20) of this category of people were identified and they all voluntarily signified interest to participate in the study while for study II, five (5) groups were formed with each made up of ten (10) members. The members were voters in Osun State.

In both studies, data collection lasted for three weeks. The individual interviews and focus group discussions were semi-structured and less structured respectively with interview and FGD guide and conducted at comfortable places. Interviews lasted for between 30-35minutes while each focus group discussion lasted for about 40 minutes. Data were collected with sound-recorder while transcription process was performed in stages namely, open, axial and selective transcription. Under open coding, sub-themes and themes emerged. These were associated with items on the interview and FGD guide document to establish axial coding and interrelations with main themes in the selective coding. At this stage, axial coding was integrated to reduce the sub-themes along the objective of the study and this led to filtered statements.

Content analysis made use of opinions and views of interviewees and FGD participants opinions to capture emerging thoughts. Subsequently, data comparison was done along categories and sub-themes and this produced new data and new ideas on the views reported under data analysis.

DATA ANALYSIS

Interview Analysis

"The political landscape in Nigeria and the actors most especially the politicians have not represented us well."

(Political Expert A)

"I am not convinced that the tools used by political parties and their candidates is effective because wrong signals are often sent during electioneering which often instill fears into electorates, residents in the country and international communities."

(Political Expert C)

"It is imperative to note that their attitude and communication tools is for everyone but they seem not to understand this and when one read in between the lines, liars and deceits are obvious"

(Political Expert D)

“The reputation of the country is at stake going by the means through which political parties and their members project their aspirations”

(Political Expert B)

“It is disheartening that a lot of costs are involved in electioneering campaigns and wooing of voters without considering professionalism and ethics of doing it.”

(Political Expert E)

“They (the politicians) are very deceitful and people hardly believe their information. Lack of trust and interest in them has affected the channels they communicate with and as such no matter the level of sincerity, it is believed that voters interests are not of priority to them.”

(Political Expert G)

“Bringing the idea of marketing into politics is great but will do rule prevail in this part of the world, certainly not. Politicians and their political parties are self-centered and selfish.”

(Political Expert F)

“I do not expect sudden change of the nation image through political act but when the real professionals handle the marketing aspect of politics may be things will change.”

(Political Expert J)

Focus Group Discussion Analysis

“Political marketing is a great idea but what is the impact in this part of the world”

(Participant, Focus Group B)

“When the need of voters and citizens are appreciated and well understood by the political parties and politicians, the state of things will change.”

(Participant, Focus Group D)

“The state of this is bad and the image of the nation is negatively affected by the doings and acts of Nigerian politicians who have not been checked by their political parties”

(Participant, Focus Group A)

“If the concept of marketing as understood is appreciated by our political parties and politicians, the image of the country will be positive.”

(Participant, Focus Group C)

“The country desire good image and this can only happen in no distance a time if the political parties and politicians are ready to change the narratives.”

(Participant, Focus Group E)

DISCUSSION AND CONCLUSION

It is obvious from the information reported under data analysis that the image of the country Nigeria has been negative and must be repositioned. This paper is of the opinion that political marketing can be of help as it will assist to communicate to the actors and change their mindset about the essence of democracy. Parties and politicians run after the political opinion and adapt to small changes specially to perceived opinion shifts in important segments of the electorate such as opinion leaders, swinging voters or electoral areas. Political market research is used to determine policy that always running after the whims of the electorate which is being driven by the market. This means that a political market consists of voters that have the potential to trade their votes in return for some value and the political organizations and candidates who in return are offering their products and services for the voters. In a functioning market, there is the competition that also needs to be taken into consideration and this is made up of the competing political parties and their candidates in the political market. This necessitate that the concept of customer-oriented approach which often used in political marketing. It is important to know the political markets and the positions of the parties to understand the perception of the voters and their attitudes toward the parties. In political marketing, the target is the voters and usually uses

their perception in voting and this makes it more valid and countable than the party's self-declared positioning. The political structures assert different elements that create a strong bond between the voters and the parties, such as ideologies, values, economics, cultures and traditions.

Finally, this paper discussed the concept of political marketing and its significance in the contemporary era of Politics revolution and democratic rediscovery and emphasizes on the meaning of political marketing, definition and various dimensions of political marketing as a concept and method and illustrated it with mainstream marketing practices. Most importantly the political marketing can provide a suitable platform to re-build a marketing framework that directs on the directive value to expected target market like the voters, supporters and others by attractively addressing the needs of society large scale. It is worthy to note that every political party that want to succeed during election and while in government should try to create brand image that will make voters to develop brand loyalty, democracy development and nation growth.

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A NOTE FOR PRIORITIZING THE SWOT ANALYSIS OF UNIVERSITY STUDENT'S CAREER CHOICES

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Abstract

Choosing the right career path is becoming increasingly vital, especially for new university students. To make appropriate career choices, university students have to make effective decisions while taking into consideration, careful precepts of adequately prioritizing their career choices. However, a major challenge faced by university students in making effective career choice decisions today is that of adequately prioritizing between a multiplicity of related career choices. This study therefore developed a re-engineered career choice technique which reflects a prescriptive guidance for prioritizing several defined career choices of university students. The study highlights two core propositions by which effective decisions could be made regarding an appropriate university student's career choice. The re-engineered career choice technique would also be useful for academicians, career professionals and policy makers to effectively elicit and strategically realign career choices initiatives in a way that they become more congruent to university students career choice development and projection trajectories.

Keywords: Prioritizing, Career Decision Making, Career Choice, SWOT Analysis

INTRODUCTION

The career choice concepts have been comprehensively debated in a number of insightful studies (Eliasa & Iswanti, 2014; Yahanpath, Neal, & McCormack, 2013). Studies have examined the phenomenon of career development (Ruokonen, Kiilu, Muldma, Vikat, & Ruismäki, 2011). Some studies also rest their emphasis on the concept of career choice exploration and decision making (Ng, Burke, & Fiksenbaum, 2008). Other insightful studies have also focused on the internal and external factors affecting decision making regarding the choice of careers (Rababah, 2016; Todorescu, Greculescu, & Popescu-Mitroi, 2015). Likewise, studies have also examined the gender impacts on career choices (Correll, 2001; Grubb, Harris, & MacKenzie, 2006; Ng et al., 2008). However, there is yet an alarming lack of inquiries which focus extensively and methodically on prioritizing career choices (Crisan, Paveleab, & Ghimbulut, 2015; Kajanus, Leskinen, Kurttila, & Kanga, 2012).

In retrospect of a vexing debate surrounding the phenomenon of career choices concept, studies reflect that university students experience challenges in adequately identifying an appropriate career choice from several related choices (Schmidt & Cooper, 2016). This tends to be prevalent among new university students who are trying to decide on a specific major that could be most appropriate to them (Montgomery, Dodson, & Johnson, 2014). Much consideration ought to be given to choosing a career path, since it is often a life time decision. Do recall, Care (1984) espoused convincingly that career choice relates to the collection of one's thoughts, hopes and aspirations of a long-term plan. A career choice thus constitutes tasks related to one's skills, interests, values and resources and which is expected to be done over a long period of time (Care, 1984; Hirschi & Lage, 2007). Although, a major issue deduced in this regard is that efficient prioritization of several related career choices is however, given less consideration. Without a probable solution given to the growing number of new university students, the same issue of prioritization of career choices could be inevitably encountered. Efficient prioritization of career choices could help to facilitate quick identification and effective decision making prowess regarding a defined and appropriate career choice. As making the appropriate career choice is vital for career development and career projections, new university students often tend to make decisions based on different criteria (Yilmaz, Ilce, Cicek, Yuzden, & Yigit, 2016).

These criteria could be exploration of self and the environment in order to determine a defined career choice, which is congruently aligned to each new university student. During such selection

processes, new university students often struggle with conflicting views arising from either strong perception of immediate families or peer groups (Puertas, Arósquipa, & Gutiérrez, 2013). It could also be a consequence of estranged perspectives of values, skills and interests (Haslerig & Navarro, 2016; Hirschi & Lage, 2007). This consequently gravitates towards a cognitive state of intense confusion for new university students (Crisan et al., 2015). Due to conflicting perspectives of career choices, most new university students could often be led to make career choices which may not exactly be most appropriate for them. Their career choices could subsequently become influenced by several socio-cultural, economical, technological and or political factors as well (Dimitrios, 2013; Langlands, 2005). In this case, supposedly invaluable potentials of university students often remain unidentified, unexplored, suppressed, underdeveloped or even lost (Eliasa et al., 2014). Hence, it may be vital for a new university student to conduct comprehensive analysis of self. This could involve a methodical exploration of respective university student's potentials and capabilities (Barna & Mircea, 2015). It might therefore be a probable first step. One of the growing tools for initiating this step is often relayed as an assessment of the Strengths, Weaknesses, Opportunities and Threats (SWOT) of a given phenomenon. It is commonly referred to as SWOT analysis (Romero-Gutierrez, Jimenez-Liso, & Martinez-Chico, 2016). An overview of the SWOT analysis is also considered in this study's subsequent discourse. This study therefore highlights through a methodical technique of the university student's SWOT analysis; a prescriptive guidance for prioritizing defined career choices. It reflects a systematic process which can be applied to aid new university students in the selection of their major in schools. Although, it is not in itself entirely exhaustive but it has been structured to engender a future theoretical undergirding that aids to guide new university students into making an appropriate career related lifetime decision.

THEORETICAL FOUNDATION

In congruence to this study's aims and objectives, Savickas (2012) strongly accentuate that the career choices phenomenon reflects several stories which are told by individuals about the plans that resides in them. Such plans may highlight knowledge of their interests, abilities or values. It is vital to note that the university students' knowledge of self and identity are but products of both social and cognitive processes (Rajabi, Papzan, & Zahedi, 2012). Savickas, et al. (2009) opine that these processes often take place within the interactive contexts of negotiations between individuals. Thus, the knowledge a new university student relates with reality may often reflect a co-construction between cultural, social and even historical contexts. This usually occurs through the discourse by which new university students form their relationships (Bilon, 2013).

This study therefore draws on the career construction theory of Savickas (2002) to guide its analysis. This theory highlights career construction as dynamic, differential and also a developmental process (Niles & Harris-Bowlsbey, 2013). The theory of career construction has frequently been employed to further examine general population students, adult learners and athletes, as they craft their respective career plans (Haslerig & Navarro, 2016; Niles & Harris-Bowlsbey, 2013). However, it has seldom been applied in the context of university students and is yet to be critically examined with respect to prioritizing the SWOT analysis of new university students career choices. According to Savickas (2002), Career decision making processes are shaped by different life experiences, so individuals are bound to develop over the course of their lives. Although, life experiences of new university students are extremely individualized, each student's career construction is bound to reflect a different process. The theory of career construction highlights that as individuals dynamically respond to their environmental and life transitioning factors, their career decision making experiences tend to occur. Haslerig and Navarro (2016) espouse that experiences relate the development of a particular career uniqueness. Congruently, Barna and Mircea (2015) argue that career related experiences deals with a sequential phase of university student's lives, as their respective careers tend to progressively unfold. However, Savickas (2005) strongly postulate that careers do not unfold but are constructed as individuals make choices which exhibits concepts of themselves and authenticates their goals in a social perspective of life's reality. Career choices made, reflect decisions which are built on the grounds of personal inputs, interests, choice of actions, performance attainments and goals choice (Rajabi et al., 2012). According to Savickas (2002) career plans are constructed and subsequently established as individuals cope with transitions of life, navigate life experiences as well as negotiate future risks.

In retrospect of Rajabi et al. (2012) career decision making intention study; the theory of career construction of Savickas (2002) fail to also consider an in-depth analysis of prioritizing the multiplicity of career choices which in this study's context, are encountered by new university students. This is in view that new university students face a lot of different challenges regarding making career choices decisions (Care, 1984; Correll, 2001; Crisan et al., 2015). Since careers do not unfold but are constructed as individuals make choices along the course of their lives (Savickas, 2005); it is logical to relate that over the years, various experiences may produce several estranged career related thoughts in the minds of new university students. These thoughts further reflect diverse desired pathways for new university students, as they struggle to navigate through a web of multiple career choices. This is rationally a very confusing period for new university students who consequently face the risks of making the wrong career choices, due to poor prioritization of multiple career choices (Laughland-Booy, Mayall, & Skrbis, 2015). Studies (Barna & Mircea, 2015; Bilon, 2013; Care, 1984; Crisan et al., 2015; Eliasa & Iswanti, 2014; Ruokonen, Kiilu, Muldma, Vikat, & Ruismäki, 2011) reflect convincingly that poorly prioritized career choices could engender individuals to choose inappropriate careers. Making a wrong career choice decision may lead to unfulfilled aspirations, unidentified and unexploited potentials, strengths and abilities. It might even lead to subsequent psychological breakdown. These consequences might be observed from a lens of gross dissatisfaction with experiences emanating from making wrong career choices. It could also be viewed from a perspective of regrets from past memories and losses regarding future aspirations (Bilon, 2013; Care, 1984; Haslerig & Navarro, 2016; Rajabi et al., 2012; Savickas, 2012).

SWOT Analysis and New University Students

The SWOT analysis is considered one of the oldest and prevalent management organizing frameworks (Bell & Rochford, 2016). It often results in a strategic planning list employed for examining a construct(s). This is in order to obtain a methodical approach which facilitates effective decision making (Kajanus et al., 2012). In view of a growing pool of knowledge regarding the SWOT application, it has also consequently been employed to examine even the individual. It thus, reflect four factors which are vital for both present and future analysis of a defined phenomenon (Pucciarelli & Kaplan, 2016). Studies report that a major objective for the SWOT application is the development and adoption of a decision making strategy(s) (Bell & Rochford, 2016). This could be achieved through a critical analysis of new university student's internal factors (Strengths and Weaknesses) in relation to the external factors (Opportunities and Threats) respectively. It relates a good fit between the university student's internal capabilities, limitations and resources; with the external options from probable opportunities and threats (Kajanus et al., 2012). It reflects a window for new university students to identify and examine their self-capabilities and resources. Likewise, the self-capabilities and resources are observed as strengths, if they effectively and efficiently aid to respond to opportunities or even threats from within new university student's external environment (Ardelean, Titan, & Druica, 2015; Kajanus et al., 2012). New university students may also perceive trends from a wider environmental scope as opportunities if they identify and exhibit necessary self-capabilities and resources in order to exploit identified opportunities.

University Student's Self and Environmental Assessment

Making a career choice thus hinges on a variety of critical considerations. Such considerations for example, may appear as questions of the importance of social, personal and family influences. Other considerations could be how educational system, financial considerations and formulated preferences influence decision making in career choices (Langlands, 2005). Nevertheless, most of these considerations could also be highlighted and addressed during an in-depth examination of new university students SWOT analysis. Table 1 above, reflects a process by which the overall SWOT analysis of university students may be examined. It constitutes new university student's self (university student's internal factors) and environmental (university student's external factors) assessment questions. The highlighted questions are related to help access and explore university student's strengths and weaknesses, in order to produce an adequate process for identifying plausible career choices. Through a thorough examination of self, as it relates to new university student's SWOT analysis; the plausible career choices could be identified.

Similarly, current and probable opportunities might also be further determined as well as threats which could directly impact defined career choices of university students (Pucciarelli & Kaplan, 2016). However, by initiating a critical analysis of the Political, Economic, Social, Technological,

Ecological and Legal (PESTEL) environment surrounding a defined career choice option; current and potential threats may be further identified and examined. Therefore, future threats which are capable of impacting career choice options could also be forecasted, as strategies are subsequently developed to mitigate or nullify them (Dimitrios, 2013; Morris, 2005; Pucciarelli & Kaplan, 2016).

Table 1. University Student's Self and Environmental Assessment.

STUDENT INTERNAL FACTORS	
STRENGTHS	WEAKNESSES
What skills and values can I identify in myself?	What required skills or values do I not yet have?
What activities do I love to do?	How much do I get along with people?
What do I do better than others?	What required experience do I need but don't yet have?
What have others identified as my best skills, interests and values?	Do I lack sufficient financial resources for my career choice?
What tasks gives me the most satisfaction?	What skills have others identified that I lack?
Do I have adequate resources (financial) for my career choice?	What personal interests of mine have been highlighted by others?
What tasks have others highlighted that I am good at?	What personal interests of mine am I not yet good at executing?
What qualifications or certifications do I need but don't yet have?	
STUDENT EXTERNAL FACTORS	THREATS
OPPORTUNITIES	What current and projected changes of the PESTEL environment analysis can influence my career choice?
Is there any room for career growth?	To what extent can my career choice be influenced by current and projected PESTEL environment analysis?
In what situations can I fully use my skills and expertise?	What are the probable disadvantages of this career choice?
What related trends could make my career very interesting?	
What are the probable advantages of this career choice?	
Are there any strengths and weaknesses of current pioneers in my related career choice?	
What obstacles have current pioneers faced and what novel gaps can be further explored?	

Source: Developed based on the literature.

It is interesting to note that the SWOT analysis tool is not without limitations even in determining career choices as well. This is in view that it yet remains at a merely identifying level of its components (Helms & Nixon, 2010). It also lacks a prescriptive mechanism for systematically guiding its components towards effective prioritizing of defined career choices (Kajanus et al., 2012). This is congruent to the claim that new university students may also not be able to richly explore the constituents of their strengths and weaknesses, absent knowledge of the external environment. Likewise, new university students may also not be able to richly identify and explore the environmental trends as opportunities or threats, absent the knowledge of self-capabilities and resources to exploit the opportunities as well as nullify the threats (Morris, 2005). Moreover, studies convincingly espouse that SWOT analysis allows new university students to compare new information with prior perceptions of resources, capabilities and limitations of self (Crisan et al., 2015; Vidal, Smith, & Spetic, 2015). This is also to facilitate effective decision making regarding an appropriate career choice.

It is not a surprise that the concept of career choice is increasingly becoming a contentious debate (Hughes, 2002). Studies argue that from a human capital perspective, career choices are made based on mostly current or potential financial benefits (Correll, 2001). Moreover, from a sociological view point, career choices are made based on university students interactions with the societal demographics (Correll, 2001; Crisan et al., 2015). Similarly, a deeper view into the psychological perspectives reflect that career choices are made from consideration of university student's dispositions towards work types and self-identity perceptions (Grubb et al., 2006). These diverse perspectives may yet impact what career choice is made and even what career choices may be possible for respective university students.

Studies also reflect on the degree of certainty of university students of medical related disciplines in deciding their career choices (Barna & Mircea, 2015; Puertas et al., 2013). These studies share similarities in view of appropriateness of career choices of university students. It is thus highlighted that over the course of years in pursuing their majors in schools, most university students still have conflicting views of their career choices, even when they graduate (Crisan et al., 2015). Other studies accentuate several underlying factors influencing university student's career choice decisions (Rababah et al., 2016). Some of these factors are fringe benefits, convenience of working conditions, quality and relationships of superiors, security, relative decision making authority, nature of responsibilities (Schmidt et al., 2016). Although it has been opined in the findings of another study that long term career prospects prove to be a core influence in the decision making of career choices (Moy & Lee, 2002).

Another study also investigated the concepts of personality, academic major and even gender (Grubb et al., 2006). This has been to examine the relationships between these variables as they relate to preferred career choices of employment with Small and Medium Enterprises (SME) and Multi-National Corporations (MNC). It is found that preference of career choices to work in SME's originate from university students majoring in management disciplines. Conversely, the career choice preferences of university students who have majored in marketing, accounting and finance disciplines, have been in MNC's. Similarly, gender influences reflect career choice preference of female university students in MNC's. Moreover, male university students prefer SME's (Grubb et al., 2006). According to another study, security or financial benefits are frequently perceived as vital determinants of university student's career choices (Szamosi, 2006). It is however opined that new university students may end up making career choices which consequently provides less satisfaction for them (Crisan et al., 2015; Szamosi, 2006). Thus, the making of efficient decisions which are congruent to new university student's career choices may tend to differ in the appropriateness to each new university student. In light of this, it is advocated that normative referents such as teachers and career development professionals also play a major role in influencing career choices of university students (Montgomery et al., 2014; Rababah et al., 2016). New university students yet face the challenge of deciding an appropriate career choice due to diversity of related career choices endemic in recently evolving careers. This further spurs confusion as to the appropriate choice of a defined career (Puertas et al., 2013).

Moreover, studies also stress on the importance of considering career opportunities while making career choices decisions (Ng, 2008). Results of a study on needs assessment of students' career guidance, suggest that new university students exercise poor abilities in decision making processes and career explorations (Crisan et al., 2015). Career decisions might have been made without prior holistic understanding of self. Therefore, a comprehensive understanding of strengths and weaknesses of new university students is vital for evading major pitfalls in career choice decision making processes (Barna & Mircea, 2015; Correll, 2001). Studies also reflect that just understanding the use of SWOT analysis is not enough to effectively navigate the conflicting perspectives of multiple related career choices (Barna & Mircea, 2015; Kajanus et al., 2012). Although university students may be cultured to find a major in their respective disciplines, they however struggle between efficiently prioritizing between multiple related career choices (Correll, 2001).

A Re-Engineered Career Choice Prioritizing Technique

The re-engineered career choice technique consists of various compositions which could be replicated in various career choices. It is structured to help identify and make effective decisions regarding a defined career choice (s). The compositions are thus;

- CC = Career choice option
- S = Total number of defined career related strengths
- W = Total number of defined career related weaknesses
- O = Total number of defined career related opportunities
- T = Total number of defined career related threats
- WTS = Weaknesses which could be possibly turned into strengths
- TTO = Threats which could be possibly turned into opportunities
- ACC = Appropriate career choice (based on the career choice which has the highest total of strengths and opportunities from overall compared sets of defined career choices)

The reengineered career choice prioritizing technique (Fig 1) reflects a chosen career choice option (CC) of a new university student. It shows distinct processes vital for prioritizing several career choices. It involves the identification of related career choice options, contingent upon a critical SWOT analysis of the university student. It also highlights the career choice related strengths, weaknesses, probable opportunities and threats. It is to be employed over several career choices that are directly congruent to new university students' values and interests. This technique is to be employed repeatedly over several CC until a specific CC is identified as most appropriate. To employ this technique, new university students may have to explore, identify and compare the various internal and external factors through which rich experiences related to their values, skills, aspirations and interests could be examined. This is to ascertain and further create a platform for highlighting multiple career related choices. In view of prioritizing each career choice from a range of multiple career choices, a new university student may further investigate the SWOT analysis related to each career choice (See Table 1). This is in view of identifying and assessing personal internal factors (strengths and weaknesses) as well as the external factors (opportunities and threats) which influence or are capable of impacting their career related thoughts, goals and aspirations.

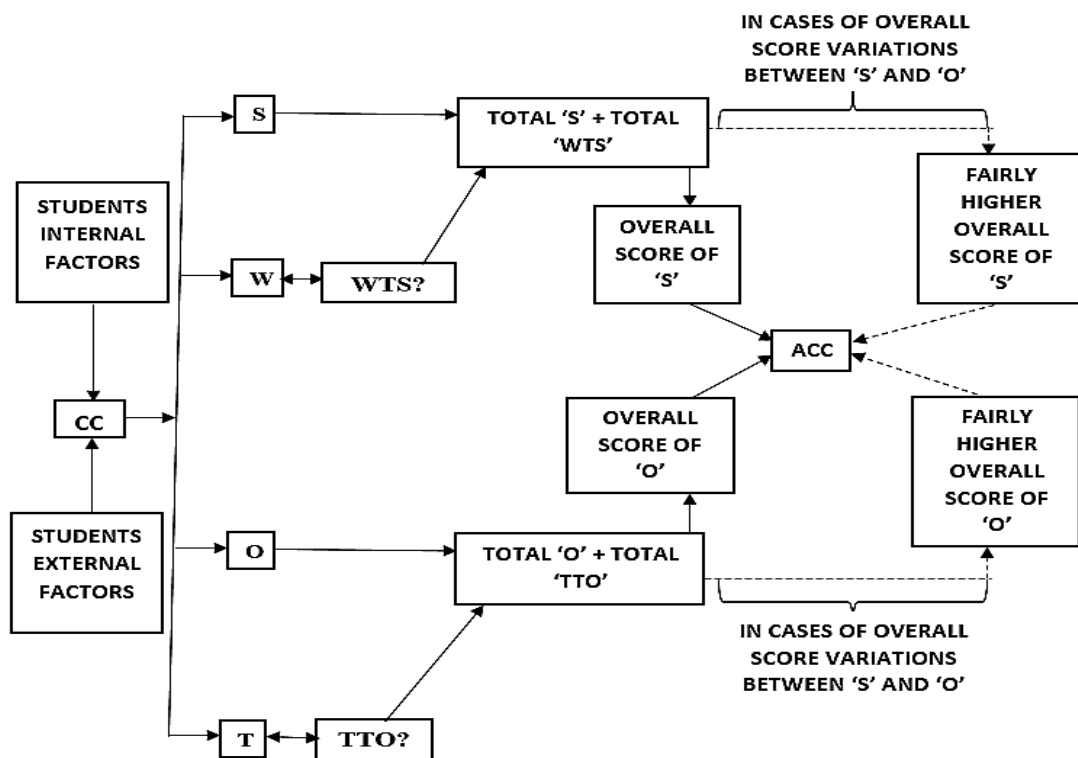


Figure 1. A re-engineered career choice prioritizing technique.
 Source: Developed based on the literature.

Sequel to Figure 1, the total number of weakness and threats in a given CC are computed separately. Weaknesses are also analysed in order to examine which could possibly be further evaluated in the light of been turned into strength(s). Weaknesses could be addressed by identifying what measures are necessary to be initiated upon each weakness, so that they are either efficiently curbed or adequately controlled (See Table 1). This is in view of progressively transforming the identified weaknesses into strengths as much efforts are given accordingly to effect such processes. Thus, in this study the WTS relates a total score of weaknesses which could be possibly turned into strengths within a defined CC.

Similarly, total number of threats are also analysed in order to examine which could be possibly turned into opportunities. Threats could be addressed as well by identifying what measures are necessary to be initiated upon each threat, so that they are either efficiently mitigated, nullified or adequately controlled (see Table 1). This is also in view of progressively transforming the identified threats into opportunities as much efforts are given accordingly to effect such processes. Likewise, TTO reflects a total score of threats which could be possibly turned into opportunities

within a defined CC. Although, in employing this technique, university students may have to identify defined career choices that are often sequel to the impacts of their experiences from both internal and external factors. It is also vital to ensure that experiences which reflects career related memories and thoughts are congruent to their acknowledged strengths, weaknesses, opportunities and threats. Also, to arrive at an ACC, a total of WTS is added to the sum of strengths to obtain an overall total of new university student's strengths. Likewise, a total of TTO is added to the sum of opportunities to obtain an overall number of probable opportunities.

The entire processes are subsequently repeated for all highlighted career choices options, respectively. This would help to obtain the distinct overall scores of strengths and opportunities of respective career choice options that may have already been identified by the new university student. By initiating this process, the appropriate career choice option which is most relevant to the university student is thus identified. Therefore, the study makes a proposition to reflect the appropriate career choice.

Proposition 1. The career choice option with the highest scores of strengths and opportunities is the ACC.

This is because the ACC reflects the identified CC with the highest scores of strengths and opportunities. This is also based on an assumption that the perception of having high strength scores in a defined CC may depict that plausible opportunities could be further created by the strengths of the new university student. It is also due to long-run presumptions of being able to exceed expectations by utilising highly developed strengths in a defined CC. With respect to the career construction theory, strengths are bound to become more effective over the course of university student's career development. They tend to become more efficient as they are constantly employed within a defined CC. Thus they could be utilized to further explore and exploit old and new opportunities.

Moreover, there could be cases where all the CC's reflect different variations in their overall results of strengths and probable opportunities. Such variations may either appear as a CC reflecting very high strengths score and a low or very low opportunities score. There are cases where a CC could appear vice versa among other career choices options. If faced with either highlighted variation; there might be a need for careful considerations when prioritizing between multiple CC. This is in view of variations in the overall results of respective CC strengths and opportunities. If new university students choose a CC with a very high opportunity score but with a low or very low strength score; they may end up utilizing only the number of strengths and opportunities in congruence with just that CC. Although by doing this, university students could be neglecting another CC which may reflect a very high strength score. In this regard, other identified CC strengths which could otherwise be very useful for managing and exploiting CC probable opportunities; might thus remain dormant and or redundant. This may be regardless of the respective CC they fall into. This may subsequently inhibit the possibility of exploiting and utilizing the full potential of strengths of new university students.

On the other hand, by choosing a CC with very high strength score and a low or very low opportunity score, a new university student could also be neglecting another CC which may clearly reflect a very high opportunity score. New university students could thus forfeit other identified opportunities in other CC. Some of the opportunities that might otherwise be quite useful for increased career choice developments; may thus remain unexplored, dormant and or redundant, regardless of the respective CC they fall into as well. This could subsequently inhibit the possibility of exploiting and utilizing both current and potential opportunities of the respective CC, given that the total number of opportunities highlighted may be very high.

Variations in the overall scores of strengths and opportunities of several CC may lead to conflict in decision making of the ACC. This is in view that new university students might encounter major difficulties in making effective decisions regarding the ACC. Likewise, new university students may tend to make the wrong decision of CC, with respect to choosing the CC with the highest strength score but a low or very low opportunity score and vice versa. This further presents a challenge of identifying an optimum score level of strengths and opportunities within respective defined CC. However, in order to utilize an optimum level of strengths and opportunities in cases of variations; a second proposition is made in this study.

Proposition 2. The CC with the fairly higher scores of both strengths and opportunities would be the recommended ACC.

This is in view that new university students could be opportune to utilize a fairly high number of strengths as well as, exploit a fairly high number of opportunities respectively. Given a wide range of CC to choose from, new university students may consider making their choices based on the CC which reflects the higher scores of both strengths and opportunities. Nevertheless, there could also be cases of high variations in situations where either (S, W, O, or T) of the SWOT analysis components, is perceived to reflect the most value to a new university student. This is in terms of the degree to which a component score (S, W, O, or T) is considered by the student to be able to exact the most influence on a given CC. Congruently, variations may usually be bound to occur due to the complexity of university students' aspirations and hopes. Hence, plausible situations of variations may be inevitable when prioritizing new university students SWOT analysis of a defined CC. A detail analysis of this study's second proposition is also further examined in the subsequent discussion section. This is in terms of variations in prioritized SWOT analysis of a Defined CC of new university students.

DISCUSSION

In this section, this study highlights and addresses the various variations endemic within the prioritised university students SWOT analysis of a defined CC. First an overall variation is examined to reflect different changes in overall scores and the factors influencing the changes. Secondly, variations of prioritized university student's strengths, weaknesses, opportunities and threats are also analysed.

Variations in Prioritized University Students SWOT Analysis of a Defined CC

Concerning a defined CC, Haslerig and Navarro (2016) opine that new university students often make decisions based on various considerations. New university students may decide to choose a defined CC due to presumptions or perceptions of high scores of identified strength or opportunities within respective CC's. They may otherwise choose a defined CC with regards to perceptions or presumptions of low threats and weaknesses. A defined CC could also be ignored by university students if the overall scores of strengths and or opportunities are low or very low. A defined CC may also be rejected should it reflect very high overall scores of threats and or weaknesses. It is argued that respective career choices are chosen based on the high levels of strengths available to engender an effective and efficient CC plan (Yilmaz, Ilce, Cicek, Yuzden, & Yigit, 2016). It is also espoused that a defined CC could be chosen based on high perceptions of actual or probable opportunities related to the defined CC (Schmidt & Cooper, 2016). Laughland-Booy et al. (2015) also report that career choices are made based on the extent to which future risks mirroring as threats are negotiated. Moreover, it is vital to note that the choice of a defined CC may not necessarily be a consequence of just presumptions or perceptions of strengths. For example, Laughland-Booy et al. (2015) further opine that choice of a defined CC could be based on social norms. As an example, social norms relate to the external values of family, peers or teachers which are capable of influencing new university students' decision in prioritizing the SWOT analysis of a defined CC. These external values may appear as factors which could be further categorised to reflect either opportunities or threats for new university students (Eliasa & Iswanti, 2014; Correll, 2001; Kajanus et al., 2012).

Variations in Prioritized Strengths of a Defined CC

University students may choose a defined CC based on identified high strength scores. The perception of having high strength scores in a defined CC may depict certain positive assumptions of plausible opportunities for new university students. Consequently, university students might decide to make decisions based on their convenience of assumptions of strengths. Similarly, Romero-Gutierrez et al. (2016) stress convincingly on the importance of analysing the strengths of a given phenomenon, with a view of exploring and exploiting probable opportunities. Hence new university students may give more considerations to the level of strength scores, that could appear much vital than other SWOT components. Choosing a defined CC based on this could very well be due to the belief in self-strengths. It could also be due to long-run presumptions of being able to exceed expectations by utilising highly developed strengths in a defined CC. This is also in view that new university students may perceive the overall strength score in a defined CC

as the component with the most advantage for them. However, choosing a defined CC which reflect low or very low strength score might further impact the career path of new university students. Recall that overall strength scores reflect a thorough assessment of self, interests, values, capabilities, skills and even resources of university students (Care, 1984; Hirschi & Lage, 2007). Therefore, a low strength score of university students for a defined CC might be due to several reasons. Some examples could be insufficient resources, underdeveloped capabilities, certain phobia for defined CC related tasks, unidentified potentials or interests, low self-esteem and low self-efficacy or confidence to exact innate influence and talents, or even limitations endemic within self-psychometric analysis. This may engender a perception of high difficulty of further exploring and exploiting a defined CC. Consequently, university students may deter from choosing a CC with low strength score since a low strength score might appear as a constraint or disadvantage to their respective thoughts, hopes and aspirations. A low strength score may thus inhibit effective exploitation of opportunities and efficient mitigation of threats in a defined CC (Correll, 2001; Moy & Lee, 2002).

Variations in Prioritized Weaknesses of a Defined CC

Before choosing a defined CC, new university students may consider demonstrating a certain degree of reflexivity towards CC prioritizations (Laughland-Booy et al., 2015). This is with regards that the making of decisions may often be contingent upon the effective prioritizing of the SWOT analysis of available CC's. A new university student therefore, may be more concerned about the overall weakness score obtained from a defined CC and be less concerned with the other SWOT components. Within a defined CC, the weakness score may be very high and this could inhibit/limit ability to combat threats, explore and exploit opportunities (Bell & Rochford, 2016; Dimitrios, 2013). However, should the overall score of weakness appear to be low or very low; it could otherwise mean a high level of strength for a defined CC. Consequently, to make CC decisions, new university students may be more inclined to react to the weakness scores found in a defined CC. Hence, that could be a determining factor for new university students to make a choice concerning a defined CC.

Variations in Prioritized Opportunities of a Defined CC

The choice of a defined CC is likewise contingent on the probable opportunities which new university students can identify. University students may be more concerned with the identified opportunities related to their aspirations and bare less considerations for other SWOT components within a defined CC. Correll (2001) highlight that high opportunities for career choices yet remains a focal external driver which influences CC decision making. In this regard Hartung, Porfeli, and Vondracek (2008) support that it could engender the provision of appropriate platforms in which identified strengths may be further explored and exploited. New university students tend to perceive that high opportunities relate a window which spurs the utilisation and practical development of strengths. Consequently, new university students may be more encouraged to give less consideration to weakness, threats or strengths in this case. New university students may grow with the ideology that more opportunities could facilitate the developments of new strengths. This is in view that their CC related strengths would become more effective when employed consistently in tasks found within CC related opportunities. With knowledge of a long-run increase of levels of a defined CC strength, new university students may consider high opportunities first before making CC decisions. This may also be based on the assumption that developed CC strengths may be further employed to help combat and nullify both current and or future threats (Correll, 2001; Dimitrios, 2013; Morris, 2005). However, new university students may be deterred from choosing a defined CC with low opportunities score. This is in view that the decision to choose a defined CC based on its opportunities, usually reflects the various goals, aims and objectives of each new university student (Morris, 2005). Hirschi and Lage (2007) espouse that often, a defined CC has to be in congruence with the identified interests, skills and values which brings the most satisfaction. Thus, a low opportunity score would relate a less degree of availability of appropriate platforms necessary for achieving specific goals, optimum satisfactions as well as further exploitation of strengths (Niles & Harris-Bowlsbey, 2013).

Variations in Prioritized Threats of a Defined CC

According to Pucciarelli and Kaplan (2016), threats in a defined CC may appear in a considerable number of ways. As either potential risks or present challenges, threats identified in a defined CC relatively play a vital role in influencing the decisions of new university students (Laughland-Booy et al., 2015). In view of prioritizing between multiple careers choices, new university students CC

decisions are usually guided by the different developmental experiences obtained as they grow in life (Rababah, 2016). In making a CC decision, new university students may first consider the threat score of a defined CC as a measure to ascertain whether or not the defined CC is an appropriate career choice for them. Given that a defined CC has a high threat score, university students may tend to refrain from choosing such defined CC. This may be due to insufficient knowledge or experience, insufficient resources or underdeveloped capabilities relating to a defined CC or just a certain phobia for risk taking in a defined CC related task (Rajabi et al., 2012; Ruokonen et al., 2011; Savickas, 2012). It might also be as a result of an analysis of political, economic, social, technological, ecological or legal instability issues influencing the related opportunities of defined CC (Dimitrios, 2013; Morris, 2005; Schmidt & Cooper, 2016). Consequent upon a guided influence of the fear of facing or mitigating identified threats, new university students may perceive the threats to be the determining factor for prioritizing between multiple choices and making CC decisions. This is in view that a high threat score may reflect a high limitation on the extent to which opportunities are explored and exploited. However, a low threat score of a defined CC might be perceived to reflect an increase in the degree to which opportunities could be explored and exploited. Threat scores are thus vital for guiding new university students in making effective decisions when prioritizing career choices.

CONCLUSION

The chosen career choice of new university students is often a consequence of good fit between the SWOT components and should be congruent to the university student's central objectives of interests, values, skills and aspirations. The SWOT analysis of university students could be employed as a tool to prioritize and highlight an appropriate career choice among multiple related career choices. Although, the prioritized and highlighted career choice is tailored in congruence with already identified strengths and weaknesses, opportunities and threats influencing the career choices of new university students; it is not without some limitations. Development of the re-engineered career choice prioritizing technique is yet to be applied in a varied cultural context, hence it's originality. Future studies may thus engender its application in diverse cultural contexts and even initiate investigations of cultural contexts across national perspectives. This would also help to further improve the adaptability of this study's methodological undergirding. In this study, the SWOT tool has been examined and employed to help new university students to effectively and efficiently prioritize defined career choices and thus make effective decisions. However, very little consideration is given to the PESTEL analysis of new university students in this study. Therefore, future studies could consider examining and prioritizing the PESTEL analysis of the university students career choices, as this study mainly focused on the SWOT analysis tool. SWOT analysis remains a reliable tool which could also be efficiently employed in future studies to further examine university student's career development or projections. This is with respect to the fact that the focus of this study's scope limits it from investigating university students career developments and projections.

Developing a re-engineered career choice prioritizing technique based on a comprehensive review of the literature reflects a significant contribution to the field of career development, educational psychology as well as career counselling. This study would therefore aid university students to efficiently prioritize between multiple career choices. It would also further help to evade making the wrong or less appropriate career choices decisions. This study would also bring to mind the various SWOT analysis variations which may be encountered while prioritizing between multiple career choices. The re-engineered career choice prioritizing technique would therefore be useful as a benchmark and guide to academicians and career development professionals, for eliciting adequate prioritization of new university students career choices. Similarly, it would also aid policy makers to strategically realign career choices initiatives in a way that they become more congruent to new university students career choice development and projection trajectories.

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ENGENDERING AFRICAN INNOVATION: AN AFRICAN UNIVERSITY EDUCATION PERSPECTIVE.

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Abstract

Across the globe, universities play a significant role on economic and social development. Universities involved in Research and development (R&D) have helped to trigger increased innovations, entrepreneurship, and job creations even in developed countries. Unlike developed countries, developing countries, particularly African countries, are still lagging behind in their level of innovations. Likewise, global rankings of most African universities also reflect low innovation levels that might have otherwise mirrored a positive light on African innovations. Due to a growing dependence on oil and gas and insufficient focus on innovation-centered considerations given to university-industry collaborations, the economy of several African countries are thus vulnerable to adapt to changes caused by constant innovation advancements. Extant research has argued that university education plays an important role in engendering national level innovation. Thus, university education helps to increase high-technology exports that in turn generates capital resources for the economy. This in turn supports R&D institutes and universities to generate and implement new creative ideas. This study therefore employed a panel data analysis for 12 African countries from 2001 to 2016 to investigate the role of university education in promoting African innovation. The analysis has been conducted using the STATA 14 software programme package. Sample data provided by UNESCO and The Global Economy have been collected from 2011 to 2017. Our results show that university graduates exert significant differing impacts on innovation, high technology export and information technology export. While university graduates positively impact innovation and high technology export, information technology is negatively impacted by university graduates. We also find that university expenditure negatively impacts innovation and high technology export, but positively influences information technology export. Equally, our results indicate that corruption dampens the positive impacts of university graduates on innovation and high-tech exports, and reinforces the negative impact of university graduates on information technology. Furthermore, we find that corruption reinforces the negative impacts of university expenditure on innovation and high-technology export, and attenuates the positive impact of university expenditure on information technology. Implications and limitations are discussed.

Keywords: Innovation, Education, Corruption, High Technology Export, Information Technology Export, Panel Data, Africa, University Graduates.

INTRODUCTION

It is a conventional fact that innovation is an integral function and driver of national economic growth, and this fact even stretches beyond the business and economics disciplines. Developed countries like the United States, Australia, United Kingdom, France or Canada that are more focused on increasing innovation prospects tend to exhibit higher economic growth (DiRienzo & Das, 2015; Gonzalez-Sancho & Vincent-Lancrin, 2016). Studies (Ghosh, 2015; Gilson & Litchfield, 2017) espouse that innovation mirrors the implementation of the output and processes of creative ideas. It is the actual and final manifestation of novelty. Morck and Yeung (2002) stressed that innovation constitutes new products creation, better technology and processes that are associated with economic, social and scientific advancement. The authors opined that increase in innovation subsequently aids a nation to gravitate towards national economic prosperity and growth. Innovation is becoming an imperative necessity for growth and survival in today's knowledge-based and very competitive global economy. Thus, a primary drive for several African countries, is to be the first to innovate, by enhancing their university educations systems and capabilities. University education serves three imperative functions such as services to

community, teachings and R&D, across several countries in Africa (Atuahene, 2011). University education services to community and teaching functions are often tailored towards formation of human capital and social cohesion building. R&D on the other hand, provides knowledge creation opportunities, development, diffusion and innovation of creative ideas. These university education functions operate in tandem for the knowledge economy of African countries (Altbach, 2007). Likewise, even though manufacturing organizations, non-governmental agencies, and research institutes may play a vital role in scientific and social research, the university education remains the heart of innovation creation and diffusion. This is also due to the university education's provision of formal and rigorous training schemes, and credentials for generations of future scholars, teachers and researchers respectively (Altbach, 2007; Knight, 2011).

Atuahene (2011) stressed that among the developing nations of Africa, economic and political considerations have ensued in a high rate of difficulty for African universities to successfully adopt, adapt, and engage in active and transformative innovation initiatives. As far as innovation is concerned, African universities are still striving to deal with several core issues, one of which is corruption (Molla & Cuthbert, 2016b). Corruption is argued to have a strong influence in even university student's enrollment, rate of university graduates, and education expenditure in terms of R&D (Atuahene, 2011; Matsolo, Ningpuanyeh, & Susuman, 2016; Molla & Cuthbert, 2016a, 2016b). While past research (Matsolo et al., 2016; Molla & Cuthbert, 2016a, 2016b; Obiakor, 2004) has found that university student's enrollment, university graduates (undergraduates, Masters, and PhD levels), and university involvements in R&D relate positive and significant contributions towards promoting national level innovations; studies (Ades & Di Tella, 1999; Wei, 1999; Zhao, Kim, & Du, 2003) have found that corruption disrupts foreign investments and trade that promotes innovations diffusion, harms development in private sectors such as manufacturing organizations, promotes misallocation and inefficient utilization of resources expedient to further engender national innovation. According to De Maria (2008), the influence of corruption costs African economies more than US\$148 billion per year and this gravitates to a 50 percent loss in tax revenue and subsequently increases cost of African goods by almost 20 percent. This result infers the notion that corruption has a negative effect on national innovation. Nevertheless, DiRienzo and Das (2015) advocate that the role of corruption in influencing national innovations is yet to be comprehensively investigated. Mahagaonkar (2008) also supported that the empirical nexus between corruption and innovation is still highly underexplored.

Studies (DiRienzo & Das, 2015; Mbaku, 2008) have posited that corruption is an act or a process that reflects a deviation from the practices or customs of current bureaucracy. It mirrors practices like bribery of public officers, and abuse of authority for pecuniary or status benefits. Corruption relates to the violation of regulations in order to create opportunities that allow for extortion and bribery (Aguilera & Vadera, 2008). Within and across African countries, corruption distorts the rule of law, negatively impacts country's institutional frameworks, dampens citizen's trust to commit to national economic development and has it's growing claws in African universities education experience. It is therefore identified as one of the greatest obstacles to innovation that weakens rapid social and economic development (DiRienzo & Das, 2015; Mbaku, 2008). Figure 1 supports the aforementioned existing literature that have espoused that several African countries are still suffering from a strong presence of corruption. Figure 1, shows Sudan, Zimbabwe, Cameroun and Kenya (followed by other African countries), as highly corrupt countries in Africa, compared to a relative few like Botswana, Mauritius, Rwanda that mirror low levels of corruption.

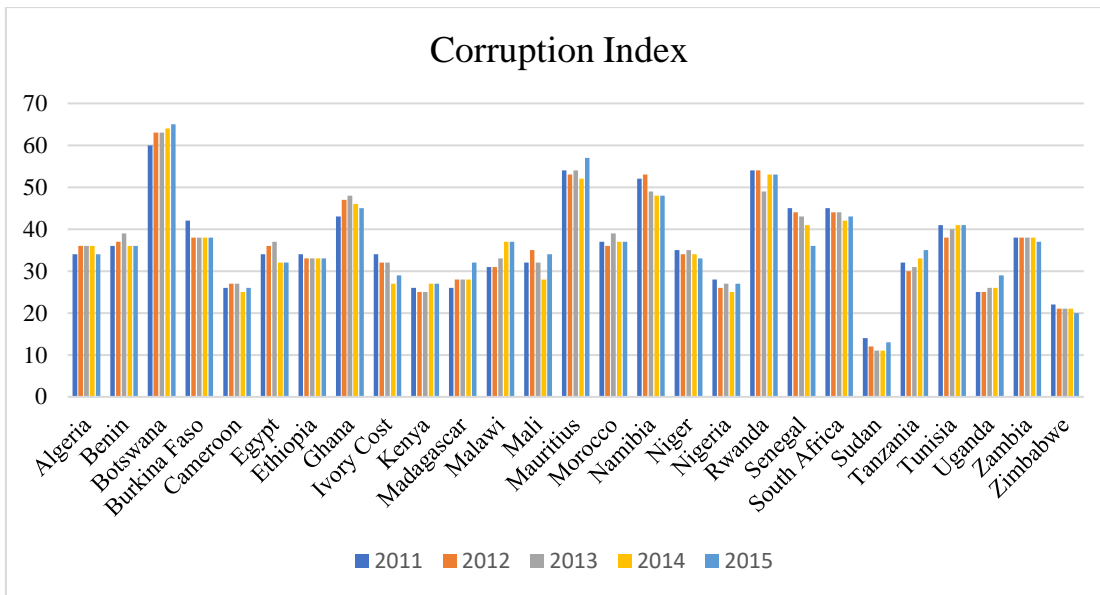


Figure 1. Level of Corruption in 27 African countries.
 Source: Based on Transparency International (2016).

Similarly, DiRienzo and Das (2015) also posit that corruption can have a harmful impact on national innovation initiatives. Insights of a five years' period, from collated innovation index of 28 African countries (Figure 2), also suggests that African innovation is still at its infant stage. Countries like Mauritius, South Africa and Tunisia are few of the African countries that reflect high levels of innovation compared to Sudan, Niger and Nigeria which reflect low levels of innovation across a 5 years' period.

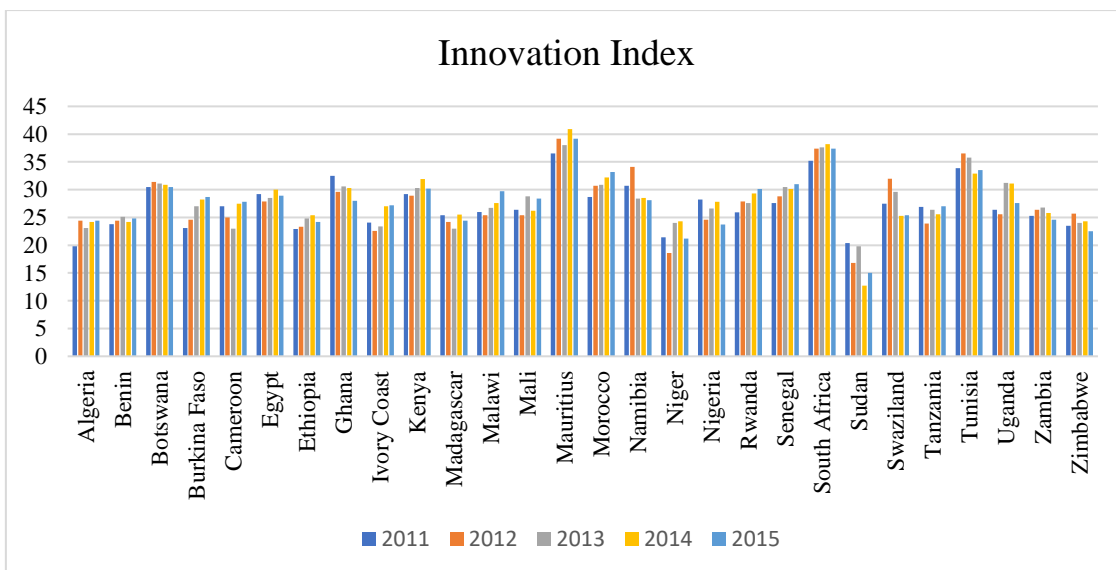


Figure 2. Innovation Levels across 28 African Countries.
 Source: Adapted from Cornell University, INSEAD, and WIPO (2016).

With a growing fluctuation and decline in the level of national innovation across several African countries from 2011 to 2015 (Figure2), it is only logical to infer that much is yet to be done to engender African innovation. Therefore, studies (Atuahene, 2011; Molla & Cuthbert, 2016b) suggest a reflection on improving the academic prowess of the African university education system as a means to remedy the growing deterioration that is prevalent among several African countries. Being the heart and driver of sustainable long term innovation and contributor to national economic development, African universities aid to engender national innovation in several ways (Knight, 2011). By ensuring a constant inflow of new students into the universities, through student's enrolment schemes, African countries can be able to mitigate for scarcity of

novel ideas relevant for addressing future uncertainties (Ndabeni, Rogerson, & Booyens, 2016). Likewise, increase in the number of enrolled university students may subsequently help to expand the network of a knowledge-centered economy and provide ease in accessing perpetual inflow of creative ideas. It could also aid to control for constant supply and availability of human capital (Ndabeni et al., 2016; Parziale & Scotti, 2016).

However, not all African countries are able to benefit from this experience as Figure 3 shows that only Egypt has so far had the highest number of university students' enrolment since 2011 to 2015. Egypt is not even closely followed by Algeria, which is actually the second country with the highest rate of university student's enrolment. Apart from South Africa, it is clear that several African countries yet have low levels of university student's enrolment. Despite the promising benefits of high rate of university student's enrolment as espoused by studies (Ndabeni et al., 2016; Parziale & Scotti, 2016), it is interesting to also note that it may not always lead to increase in innovation. Insights from Figure 3 relate that, despite the very high rate of university student's enrolment in Egypt, it yet did not lead to very high national innovation levels (Figure 2). This is in comparison with very high innovation levels of Mauritius and South Africa which had lower university student's enrolment rates. This contradicts the discourse of aforementioned extant literature that have accentuated on the importance of university student's enrolment on innovation. It could therefore be rational to deduce that a very high enrolment rate of university students may not necessarily mean a very high rate of innovation. Thus, one of the contributions of this study is to examine the roles of university student's enrolment on African innovation.

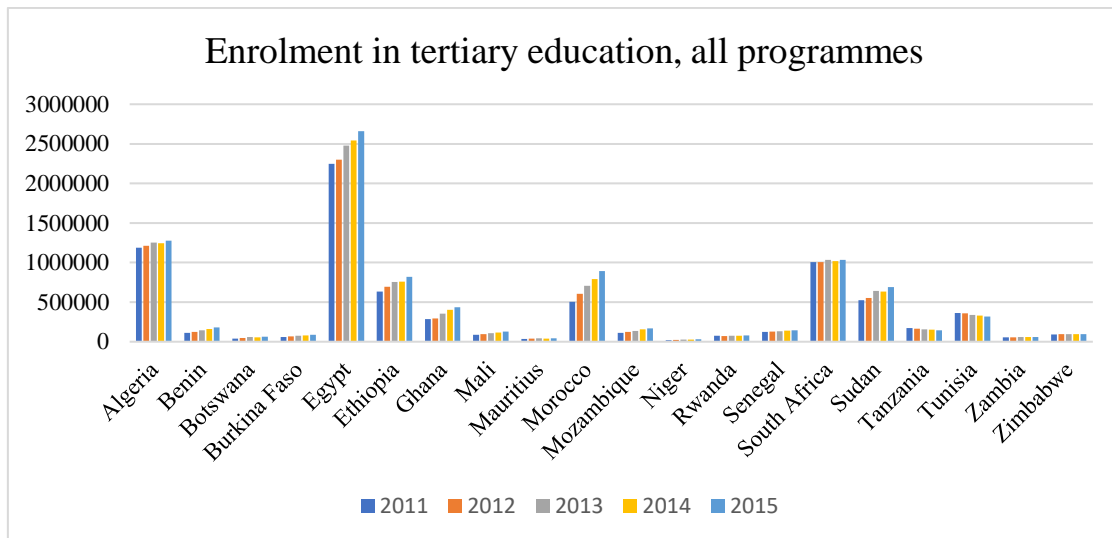


Figure 3. African University Enrolments levels.
 Source: Adapted from Cornell University, INSEAD, and WIPO (2016).

Another medium by which African universities aid to engender innovation is through the production of graduates that have been trained to become adept at several innovation centric disciplines (Chand & Misra, 2009). These graduates highlight degrees ranging from for example: bachelors of sciences, Masters of philosophy and even doctors of philosophy, as the case may be. These graduates tend to play vital roles in contributing to growth of national economic development through their engagements in several innovations prowess (Chumbley, 2016). Innovative results of their creative ideas and efforts are often experienced in several manufacturing industries across distinct African countries (Molla & Cuthbert, 2016a). Significant innovative concepts in today's global changing business environment are often attributed to substantial contributions of university graduates, and this is mostly a consequence of the acquisition of extensive knowledge gotten from university education (Kumar, Ochieng, & Onyango, 2004). Insights from Figure 4 shows that in Africa, Egypt has so far produced the highest number of graduates, followed by a similar increasing trend in Algeria. However, despite the increase in the number of graduates produced each year (Figure 4); in terms of national innovation, Figure 2 suggests that Egypt and Algeria still ranks below other countries like Tunisia and South Africa that has so far produced less number of graduates. This contradicts the discourse of extant literature (Chumbley, 2016) that has accentuated on the necessity of increased rates of university graduates and their substantial contributions towards national

innovation and subsequent economic development. As another contribution, this study, therefore seeks to investigate the role of university graduates on national innovation.

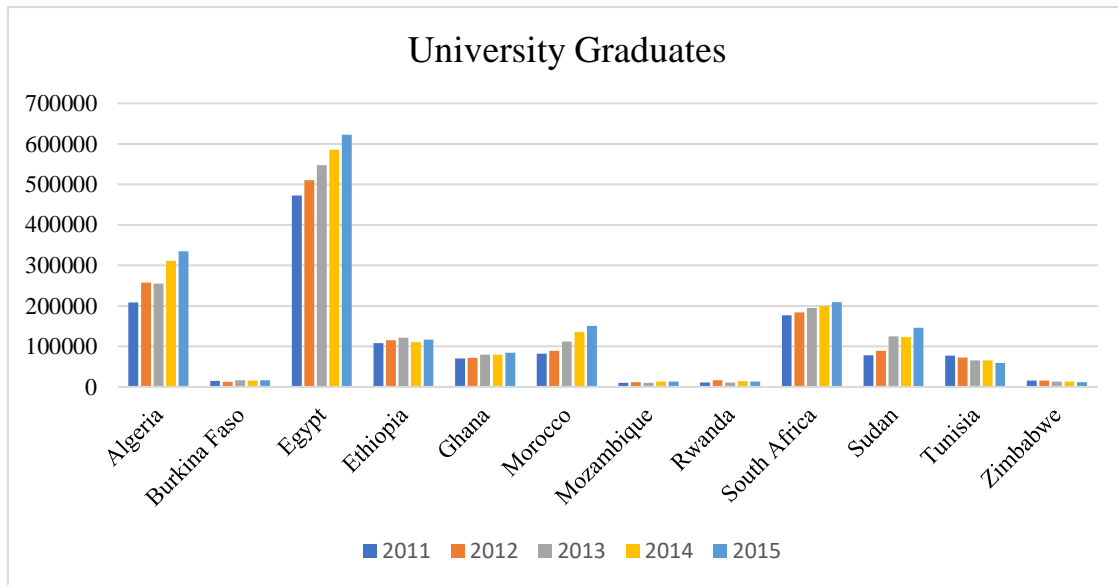


Figure 4. Number of African Universities' Graduates from Several African Countries.
 Source: Adapted from Cornell University, INSEAD, and WIPO (2016).

A third medium by which African universities aid to engender African innovation is via their commitments and contributions towards intensive R&D schemes. This is often reflected in African universities expenditures experience, collaborations with several manufacturing organizations and innovations centered agencies across national boundaries (Atuahene, 2011; Moruku, 2013). Due to the grave importance of establishing and fostering R&D culture and spirit within university education systems, more funds are often required to further several R&D initiatives (Toner, 2010). This subsequently leads to increase in spending or expenditure rates of African universities' education system (Knight, 2011). The African university education is a driver of creative ideas generation and implementation, and this is a focus of any R&D initiative. As a well-known fact, the processes of generating and actually implementing creative ideas is a wheel that drives innovations even beyond the walls of academia (Macdonald, Assimakopoulos, & Anderson, 2007). It is the same wheel that drives the need for academic and industry collaborations (Herman, 2013). Hence, as supported by Parziale and Scotti (2016), one may consequently infer that increase in R&D initiatives by African universities could mean an increase in innovations. Increased innovations also aid to increase the rate of patents applications, information technology exports and even high-technology exports (Atuahene, 2011; DiRienzo & Das, 2015; Gonzalez-Sancho & Vincent-Lancrin, 2016; Parziale & Scotti, 2016). This is also because, a supposed decline in the R&D rate of universities due to several impediments like for example; insufficient, misappropriation and or misallocation of funds, or even increased corruption levels may mean a decline in innovations levels.

Likewise, a logical inference would be that a decline in innovation could mean less applications of patents, lower degrees of information technology exports and even lower technology (manufactured) exports as well. Figure 5 further supports this notion in that, only Niger have reflected a country with the highest level of high technology (manufactured) exports from 2011 to 2015. Several African countries have been seen to still struggle to invert the downward slope that their technology (manufactured) exports are experiencing. This could also be strongly attributed to their dwindling innovation growth rates and high corruption levels of several African countries over the years (See Figure 2). As another contribution, this study seeks to examine the role of African university education expenditure on innovation. This is from the lens of African university education spending on R&D and its role on the underlying proxies of national innovation index, which are; high-technology exports, information technology and patent application (DiRienzo & Das, 2015). As an overall aim, this study seeks to engender African innovation via the lens of African university education perspective.

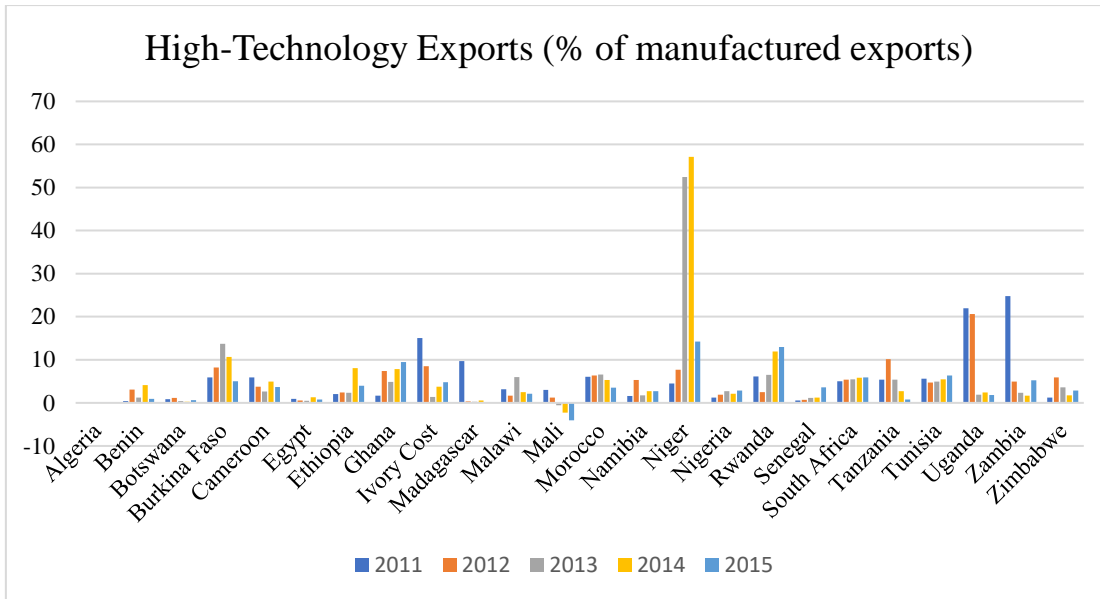


Figure 5. High-Technology (Manufactured) Exports
 Source: Adapted from Cornell University, INSEAD, and WIPO (2016).

THEORETICAL FOUNDATION AND HYPOTHESIS DEVELOPMENT

This study draws from the insights of the Human Capital Theory (HCT) to guide its analysis. The HCT is a widely recognized theory that examines human affairs from a wide spectrum which stretches beyond just economics and business (Tan, 2014). HCT considers university education as a focal premise and approach to understanding its phenomenon. It considers university education as a source of economic development (Moruku, 2013). HCT refers to a measure of productive wealth that is embodied in knowledge, skills, and labor. It is understood to reflect the innate or acquired potentials of an individual or stock of knowledge of a nation that contributes to economic productivity (Tan, 2014). The theory suggests that university education is an investment, in that it increases the productivity and earnings of both individuals and the nation at large. It also assumes that because individuals are rational, they will rather invest in education should they perceive the marginal benefits as exceeding or would be equal to marginal cost. Consequently, individual decisions concerning commitment, tends to be influenced or limited by cultural or social factors (Parziale & Scotti, 2016).

Surely, HCT is not a new phenomenon. There are several conflicting approaches and views for its examination. As developed by Becker (1964), the HCT reflects a nature of latent factor that comprises of emotional and cognitive skills. This is evidenced in university education systems. Hence, university education is perceived by Fershtman, Murphy, and Weiss (1996) as an investment or commodity. Tan (2014) posit that several scholars consider HCT from a functionalist frame such as a technological innovation perspective. In Parziale and Scotti (2016), the Marxist and credentialism perspectives relate three criticisms of HCT. The authors argue that the will or capacity of organizations to actually innovate and require a skilled labor force, is not considered by HCT. Likewise, power dynamics among capitalistic labor market classes are underestimated, and lastly, the direct nexus between technological innovation and economic development is also overestimated.

The lack of confluence and consensus surrounding the HCT phenomenon has left a growing fragmentation in its yet conflicting underpinnings. Even some of its proposed or conceptualized indicators are often not easily empirically measured (Tan, 2014). This is also due to insufficient data required to statistically examine the HCT on a national scale, and the issue of insufficient data is often based on explicit differences of cross-national socio-economic backgrounds (Hoyman & Faricy, 2009). A few indicators that are actually measurable are often tailored towards specific contexts that does not give sufficient insights and opportunity for replications or in-depth investigations on a cross-national scale (Moruku, 2013). Hence, they reflect very selective measures with less replicable or generalizable capabilities. Thus, when examining the HCT, measurement variables employed, often tend to vary across diverse research contexts, scopes

and disciplines (Parziale & Scotti, 2016; Welpel, Lutz, & Barthel, 2007). Therefore, in this study, three variables have been highlighted and examined due to the available data for their analysis. This is also in view of lack of homogeneity of the HCT undergirding, and a dire need to examine the HCT in line with the scope of this study. The HCT is thus examined from the view point of the university education enrollment, university graduates, and university education expenditure and their roles on national innovation.

The role of African university education on African innovation.

The university education plays a significant role in engendering national level innovation growth. Since it reflects a very substantial investment in human capital, it could help to increase both national and individual earnings (Nimubona & Vencatachellum, 2007). By allowing for more university students enrolment opportunities, African universities assist in creating a resource mobilization system that fosters a knowledge-based economy and expands innovation centered networks (Matsolo et al., 2016). Being driven by the need to create social and economic value, African university education helps to instill, cultivate and foster innovative values in students who may be undergoing undergraduates, masters or PhD level trainings. Regardless of their respective disciplines, students mirror diverse human capital potentials needed to engage in innovation initiatives that contributes towards national economic development (Chand & Misra, 2009). Several African universities also show support for university-industry collaboration. This is another imperative avenue to engender innovation through collaborations that promote intensive R&D initiatives (Herman, 2013). The nexus here is that, universities require industry platforms and manufacturing technologies to cultivate practical knowledge and experiences in students, while the industry seeks to continue to develop innovations by allowing university students to exploit their creative potentials and provide innovative solutions (Sobaih & Jones, 2015). Despite what seem to be a conventional believe, Rossberger and Krause (2015) lament that a country's level of education does not necessarily signify, cause nor lead to innovation. The authors stress that turning creative ideas into innovations often requires just more than university enrolments and graduates. It is also contingent upon the availability of financial resources that is evidenced in university education expenditures on R&D, in most cases relating to engendering innovation initiatives (Atuahene, 2011; Matsolo et al., 2016; Sobaih & Jones, 2015). Hence this study postulates that African university education is positively associated with, and actually predicts African innovation.

Hypothesis 1. African university education enrolment has a positive impact on African innovation.

Hypothesis 2. African university graduates have positive impacts on African innovation.

Hypothesis 3. African university expenditure is positively associated with African innovation

Corruption as a moderator

The HCT presents a theoretical view that allows for much stringent attention to be accorded towards perceiving and advocating university education as the pinnacle of national innovation excellence. Nevertheless, this may subsequently relay certain unintended consequences on national economic development. As contended by Coffield (1999), the expectations laid on university education would become so high, such that it would be expected to function and deliver in multiple ways. The author further opined that this could lead to a deflection of attention from the need to examine probable national threats that combats economic reforms in general. It could also provide the grounds for political officials to draft policies that mainly justifies corrupt practices stemming from the call to improve university education systems (Aguilera & Vadera, 2008). Likewise, it could also aid in legitimizing increased expenditures on education which might often be an antecedent or a consequence of the need to exploit, misappropriate and or misallocate funds by education ministers. Since an underlying assumption of HCT is that education is good and is a survival tool to cope with economic uncertainties; it could be perceived to reflect an illusion that it can solve any kind of relative issue, independently (Tan, 2014). The HCT has thus espoused on the significance of education on national level innovation without giving considerable attention to the probable consequence of corruption that has been found to actually inhibit its promising imagery of increased economic development (Mahagaonkar, 2008). DiRienzo and Das (2015) therefore advocated that corruption can play a dangerous role on a nation's innovation initiatives. Thus, it is opined to have a negative effect on national innovation by dampening the climate expedient for fostering innovation initiatives.

Considering that developing countries yet struggle to enjoy the benefits of low level of corruption, a marginal rise in corruption ought to have a disadvantageous effect in a national level innovation. Supported by Figure 1 and 2, this notion thus reflects some degree of truth, therefore, interaction effects between African university education and African innovation ought to be examined to determine the moderating roles of corruption. Therefore, as another contribution, this study, seeks to investigate the moderating roles of corruption on the impact of African university education on African innovation.

Hypothesis 4. Corruption negatively moderates the impact of African university education enrolment on African innovation.

Hypothesis 5. Corruption negatively moderates the impact of African university graduates on African innovation.

Hypothesis 6. Corruption negatively moderates the impact of African university expenditure on African innovation

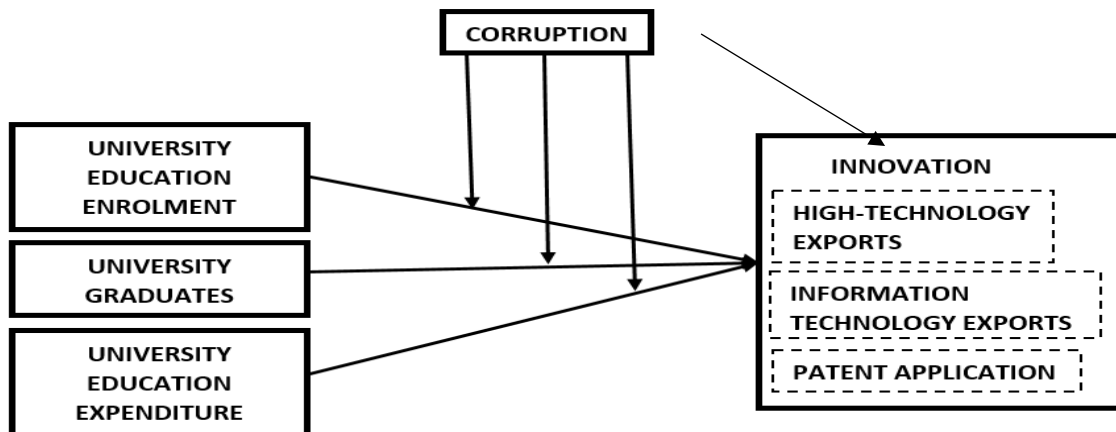


Figure 4. Conceptual Framework

METHODOLOGY

This study investigates the impact of education on innovation in 19 selected African countries namely, Algeria, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Egypt, Ethiopia, Ghana, Madagascar, Morocco, Mozambique, Namibia, Niger, Rwanda, Senegal, South Africa, Tunisia and Zimbabwe. The period of the study is from 2011 to 2017. Data is collected from different sources as follow: Innovation, High technology Export, Information Technology Export from the global Economy at <https://www.theglobaleconomy.com/>; University Graduates, University Enrolment and University Expenditure are collected from UNESCO Institute for Statistics at <http://data.uis.unesco.org/>, Corruption is collected from Transparency International at <https://www.transparency.org/cpi2018>.

Variable Measurement

Innovations index (0-100): The Global Innovation Index includes two sub-indices: the Innovation Input Sub-Index and the Innovation Output Sub-Index. The first sub-index is based on five pillars: Institutions, Human capital and research, Infrastructure, Market sophistication, and Business sophistication. The second sub-index is based on two pillars: Knowledge and technology outputs and Creative outputs. Each pillar is divided into sub-pillars and each sub-pillar is composed of individual indicators (The Global Economy, 2019).

Information technology exports (Percent of total goods exports): Information and communication technology goods exports include computers and peripheral equipment, communication equipment, consumer electronic equipment, electronic components, and other information and technology goods (miscellaneous) (The Global Economy, 2019).

High technology exports (million U.S. dollars): High-technology exports are products with high R&D intensity, such as in aerospace, computers, pharmaceuticals, scientific instruments, and electrical machinery. Data are in current U.S. dollars (The Global Economy, 2019).

Corruption (CPI Index, 0 - 100): CPI draws on 13 surveys and expert assessments to measure public sector corruption in 180 countries and territories, giving each a score from zero (highly corrupt) to 100 (very clean).

University Enrolment (Tertiary): Percent of Gross (Gross enrollment ratio is the ratio of total enrollment): Gross enrollment ratio is the ratio of total enrollment, regardless of age, to the population of the age group that officially corresponds to the level of education shown. Tertiary education, whether or not to an advanced research qualification, normally requires, as a minimum condition of admission, the successful completion of education at the secondary level (UIS, 2019).

University Graduate: measured as the number of graduate (10000) from tertiary education, both sexes (UIS, 2019).

University Expenditure (current \$1B): Current expenditure is expressed as direct expenditure in public educational institutions (instructional and non-instructional) of the specified level of education. Financial aid to students and other transfers are excluded from direct expenditure (UIS, 2019).

DATA ANALYSIS METHOD

Since the present study attempts to investigate the effect of education on African innovation for 19 African countries, a pooled method is considered the appropriate tool which could provide an effective analysis, considering both the space (country) and time dimension (year) of the data. To fulfill the objective of the study, a simple model of education enrolment (UNIENROL), university graduates (UNIGRAD), and university expenditure (UNIEXPEND) influencing innovation (INNOV), high technology export (HighTech) and information technology (InfoTech) as well as corruption (CORRUP) as the moderating effect on the relationship between the DVs and IVs is undertaken. In this model, poverty reduction is related to governmental social protection strategies as follows:

$$\begin{aligned} (\text{INNOV}) &= f(\text{UNIENROL}, \text{UNIGRAD}, \text{UNIEXPEND}, \dots\dots\dots(1) \\ (\text{HighTech}) &= f(\text{UNIENROL}, \text{UNIGRAD}, \text{UNIEXPEND}, \dots\dots\dots(2) \\ (\text{InfoTech}) &= f(\text{UNIENROL}, \text{UNIGRAD}, \text{UNIEXPEND}, \dots\dots\dots(3) \end{aligned}$$

To model Innovation, High Technology Export, and Information Technology Export exclusively as a function of various forms of educational factors is invalid. Moreover to evaluate the educational factors effect on innovation and how corruption could moderate the relationship between the educational factors and innovation, corruption variable is added to the equation. Thus the link between educational factors and African innovation is evaluated by using the following model:

$$\begin{aligned} (\text{INNOV}) &= f(\text{UNIENROL}, \text{UNIGRAD}, \text{UNIEXPEND}, \text{CORRUP}, \text{M1}, \text{M2}, \text{M3} \dots\dots\dots(4) \\ (\text{HighTech}) &= f(\text{UNIENROL}, \text{UNIGRAD}, \text{UNIEXPEND}, \text{CORRUP}, \text{M1}, \text{M2}, \text{M3} \dots\dots\dots(5) \\ (\text{InfoTech}) &= f(\text{UNIENROL}, \text{UNIGRAD}, \text{UNIEXPEND}, \text{CORRUP}, \text{M1}, \text{M2}, \text{M3} \dots\dots\dots(6) \end{aligned}$$

WHERE M1 = CORRUP* UNIENROL
 M2 = CORRUP* UNIGRAD
 M3 = CORRUP* UNIEXPEND

By using Panel Data Analysis methods, Equations 4, 5 and 6 could be written as follows:

$$\begin{aligned} \text{INNOV}_{xt} &= \beta_0 + \beta_1 \text{UNIENROL}_{xt} + \beta_2 \text{UNIGRAD}_{xt} + \beta_3 \text{UNIEXPEND}_{xt} + \beta_4 \text{CORRUP}_{xt} + \beta_5 \text{M1}_{xt} + \beta_6 \text{M2}_{xt} + \\ &\beta_7 \text{M3}_{xt} \\ &+ \varepsilon \dots\dots\dots \\ &\dots\dots\dots(7) \end{aligned}$$

$$\text{HighTech}_{xt} = \alpha_0 + \alpha_1 \text{UNIENROL}_{xt} + \alpha_2 \text{UNIGRAD}_{xt} + \alpha_3 \text{UNIEXPEND}_{xt} + \alpha_4 \text{CORRUP}_{xt} + \alpha_5 M1_{xt} + \alpha_6 M2_{xt} + \alpha_7 M3_{xt} + \varepsilon_{xt}$$

(8)

$$\text{InfoTech}_{xt} = \lambda_0 + \lambda_1 \text{UNIENROL}_{xt} + \lambda_2 \text{UNIGRAD}_{xt} + \lambda_3 \text{UNIEXPEND}_{xt} + \lambda_4 \text{CORRUP}_{xt} + \lambda_5 M1_{xt} + \lambda_6 M2_{xt} + \lambda_7 M3_{xt} + \varepsilon_{xt}$$

.....(9)

Where (β_i) , (α_i) and (λ_i) indicate the parameters, (x) the country and (t) is time.

Choosing between the fixed and random effects in analyzing the pooled data, the Hausman test which is the most accepted tool is used. The results from Table 1 rejects the null hypothesis and confirmed the alternative one. Therefore, the fixed effects model is used to analyze the data set.

DATA ANALYSIS

The impact of corruption on Innovation, High technology Export and Information Technology Export

Despite the negative role corruption plays in devaluing the structure of university development, the findings indicate a statistical insignificant relationship between corruption and Innovation, (High-technology export and Information Technology export). Freitas, Marques and Silva (2013) emphasized that, even though corruption has no direct effect on innovation, in the long run corruption does affect the progress of innovation (High-technology export and Information Technology export).

According to the table 1, the result shows that the relationship between University Education enrolment and Innovation, High-technology export and Information Technology export is statistically insignificant. In other words, in spite of any changes (either increase or decrease number of student enrolment) the Innovation, High-technology export and Information Technology export remains unaffected because there is no significant relationship. Swanger (2016) supported the discussion by indicating that, with a considerable amount of resource allocation, there should be any significant changes unless the input is more.

The impact of University Graduates on Innovation, High technology Export and Information Technology Export

a) University graduate has significant impact on innovation

The findings again show that, the number of university graduates and innovation are statistically significant. Implying that, a rise in the number of university graduates will have a positive impact of change in innovation. As future employees, university graduates are a major source of future innovations in organizations. Before undertaking the labour market challenge, it is in the prescribe context of higher education curriculum to enhance potential innovators (Martín, Potočnik & Frás, 2017). Studies have shown that, some graduates initiate their own individual innovation to establish a business. However, with such potential, other graduates join companies and become innovators by helping to introduce a new method, idea or product. In other words, more university graduates promote innovation (Mykhailyshyn, Kondur & Serman, 2018; Martín, Potočnik & Frás, 2017).

b) University graduate has significant impact on High-technology export

The number of university graduates and high-technology export are statistically significant. Showing that, there is a positive impact of change in high-technology for an increase in the number of graduates. The relationship explains that, university graduates who are well equipped with high technological ideas and skills fall on a high demand by other countries such as Japan, Korea, Singapore, etc. when the number of technological innovators increase, technological exports will increase. Hence, an increase in labour export and eventual increase economic revenue. Drydakís, (2016) discussed that, in some case, graduates with high technological abilities are employed by companies who manufacture high-tech products such as electronic devices (like laptops, cell phones etc.). In the end, these products will then be exported to

overseas countries. In other words, more university graduates eventually promote more labour export.

c) University graduate has significant impact on Information Technology export

The number of university graduates and information technology export are statistically significant. Showing that, there is a negative impact of change on information technology export, for an increase in the number of graduates. In the Morden labour market, it has become significantly challenging to secure a job. However, when an economy is growing, more opportunities such as jobs are created. Therefore, the more university graduates increase, more people will get jobs in order to foster their daily socioeconomic responsibilities. This event will subsequently reduce information technology export, since more innovative opportunities are created for the local graduates to build their innovativeness skills locally instead of abroad (Mata-López & Tobón, 2019; Drydakis, 2016).

The impact of University Expenditure on Innovation, High technology Export and Information Technology Export

a) University education expenditure has significant impact on innovation

The results indicate that, university education expenditure has significant impact on innovation. Indicating a negative impact of change on innovation. Hence, University education expenditure plays a vital role in helping to improve the structural development of an institution. Studies have shown that, In order to improve the performance and development of any institution, excessive expenditure must be reduced and efficiency must increase in order to uplift productiveness. When there is a considerable amount of fund to foster the innovativeness of potential individuals, priorities and quality will be accomplished accordingly. And potential individuals will be more capable in handling organizational settings such as improving product and services (Alagöz, Akar & Akar, 2016; Meo et al. 2013). According to Meo et al. (2013) universities are producers of innovation in the area such as improving products and services, supplying training, expertise and human resources, to societies and organizations. As a stepping stone to the reality of the labour market, Higher Education Institutions are the engines of countries' growth and development because of the innovation they nurture. Therefore, there is a need to reduce expenditure and increase efficiency in helping to nurture the individual's innovativeness to be ready for the future endeavours (Meo, Usmani, Vohra & Bukhari, 2013).

b) University education expenditure has significant impact on High-technology export.

The results indicate that, university education expenditure and high-technology export are statistically significant. Consequently, sighting a negative impact of change on innovation. Meo, Usmani, Vohra and Bukhari (2013) stated that research in science, social science and technological innovation activities are essential to improve economic performance and the main driving forces to an advance technological capabilities. However, reducing excessive university expenditure prevents several unethical human practices such as corruption. Moreover, when excessive expenditure are reduce and ethical human practiced, efficiency can be achieved (producing potential technological innovators). Potential high-tech export will be in high demand from abroad. Hence, this outcome may reduce import and increase export of high-tech products (Meo & Usmani, 2014)

c) University education expenditure has significant impact on Information Technology export.

University education expenditure has a significant impact on Information Technology export. The finding shows a positive impact on information technology export. When there is a proper investment in the educational sector (R&D), new ideas and discoveries will be achieved which will help enhance potential graduates (IT field) to excel in the oversea companies. In the prospect of rapidly changing the world economy, the attention is turned to education. Hence, through teaching and researching, universities spread knowledge and improve the stock of human capital (Meo & Usmani, 2014). with a good provision of resources, universities maybe able to use education, skilled people and new ideas to transfer knowledge to the rest of the society by exporting potential graduates from various academic disciplines (such as IT and Business), work with industry and create the seeds that lead to new companies (Veugelers & Del Rey, 2014).

Moderating effect of corruption the relationship between University enrolment and innovation, high technology export, information technology export:

The findings indicate a statistical insignificant relationship between corruption and Innovation, (High-technology export and Information Technology export). Hence, even though corruption has no direct effect between university enrolment, university graduates, university expenditure and innovation, but in the long run corruption do effect the progress of innovation (High-technology export and Information Technology export) (Freitas, Marques & Silva, 2013)

Moderating effect of corruption the relationship between university graduates and innovation, high technology export, information technology export:

a) Corruption dampens the positive impact of university graduates on Innovation.

There is a significant relationship between university graduates and innovation, and corruption reduces the positive influence of university graduates on innovation. Education has become the main priority for African families. Every year, hundreds of universities in African graduate over a million students in order to make a living to support their families. But a lot of the graduates with a potential innovativeness end up becoming food sellers, crime perpetrators, etc., due to the high level of unemployment phenomenon. This predicament subsequently creates a lot of crimes due to corruption (Martín, Potočnik & Fras, 2017). As a result of unethical practices by people in power, corruption continue to breathe in African society. When a huge number of potential innovators become food venders and crime perpetrators due to corruption, the potential innovativeness among companies, organizations, countries, etc., will significantly reduce, endangering the continent innovation capabilities. This is because, when companies do not get the chance to employ the potential innovators, the companies will have limited innovativeness to establish a new and different prospect of ideas (Mata-López & Tobón, 2019).

b) Corruption dampens the positive impact of university graduates on high-tech exports.

As universities produce more graduates annually, the demand for jobs in the labour market increases with lesser graduates been able to secure job positions annually. This leaves a higher number of university graduates without jobs and been unable to secure one. University graduates tend to get very desperate to secure a good paying job under constantly uncertain environment and the dire need to meet their respective socio-economic responsibilities and targets. Under such financial uncertainty, university graduates, potential for innovativeness which may have otherwise been employed towards engendering high-tech exports, are more likely to be employed in unethical practices which reflect corruption (As per the operational definition of the term in this study). Since this trend may have been repeatedly the case in recent years, the number of innovative graduates will very likely face a decline, hence impeding sustainable growth in high-tech exports. Furthermore, a decline in high-tech exports is consequently inevitable (Martín, Potočnik & Fras, 2017).

c) Corruption strengthens the negative impact of university graduates on info-tech.

With a very uncertain financial future, stringent measures on resource allocation for fostering info-tech in the economy may inhibit university graduates from being able to execute innovative behaviours relevant for bolstering information technology. Likewise, with an annual influx of more university graduates into an economy that is yet to institute timely and effective measures for engendering university graduates innovative potentials, there is bound to be less output from info tech. This could be a likely outcome as insufficient resource provision may tend to drive university graduates into corrupt practices whilst they struggle to meet up with the dynamic socio-economic demands of the country (Drydakis, 2016).

Table1: Panel data results

	Innov				Hightech				Infotech			
	Coef.	Std. Err.	z	P>z	Coef.	Std. Err.	t	P>t	Coef.	Std. Err.	z	P>z
CORRUP	0.063	0.074	0.850	0.397	2.927	3.082	0.950	0.344	0.004	0.019	0.220	0.829
UNIENROL	-0.003	0.183	0.020	0.987	2.782	7.009	0.400	0.692	0.060	0.044	1.370	0.170
UNIGRAD	0.486**	0.249	1.950	0.050	32.011***	9.655	3.320	0.001	-0.369***	0.058	6.410	0.000
UNIEXPEND	-	0.885	2.770	0.006	-164.667***	38.881	4.240	0.000	0.565**	0.223	2.530	0.011
M1 (Currp*Unienrol)	0.001	0.005	0.230	0.817	-0.276	0.178	1.550	0.124	-0.002	0.001	1.390	0.164
M2 (Currp*Unigrad)	-0.012*	0.007	1.780	0.074	-0.993***	0.256	3.880	0.000	0.010***	0.002	6.480	0.000
M3 (Currp*Uniexpend)	0.068***	0.023	3.020	0.003	5.133***	0.998	5.140	0.000	-0.013**	0.006	2.240	0.025
_cons	23.234	2.670	8.700	0.000	146.697	120.121	1.220	0.225	0.575	0.806	0.710	0.476
sigma_u	2.623				sigma_u	382.192			sigma_u	1.512486		
sigma_e	1.749				sigma_e	59.001			sigma_e	0.369836		
rho	0.692				rho	0.976			rho	0.943582		
Wald chi2(7)	29.210				Wald chi2(7)	61.490			Wald chi2(7)	70.32		
Prob > chi2	0.0001				Prob > chi2	0.000			Prob > chi2	0		
Hausman test chi2(7)	11.530				Hausman test chi2(7)	177.110			Hausman test chi2(7)	7.35		
Prob>chi2 =	0.117				Prob>chi2 =	0.000			Prob>chi2 =	0.3935		

Note: (***) , (**) and (*) refer to the level of significance at 1%, 5% and 10% respectively

Moderating effect of corruption the relationship between university expenditure and innovation, high technology export, information technology export

a) Corruption strengthens the negative impact of university expenditure on Innovation.

There is a statistical significant relationship between university expenditure and innovation through corruption. Corruption strengthens the negative impact of university expenditure on innovation. With the provision of university expenditure, universities are expected to foster its development in relation to effective innovation. But nevertheless, a significantly amount of resources may have a negative impact on innovation (Veugelers & Del Rey, 2014). In some cases, funds allocated to improve and enhance the innovativeness of institutions through R&D projects are misrepresented to other unassigned projects or personal affairs. The misrepresentation of resources will eventually diminish the progress of the innovation when there is no or little evidence of innovation outcome. Subsequently, the discontinuation of fund allocation due to corruption will submerge the progress of innovation. Therefore, a proper allocation of funds with a right supervision may reduce the misrepresentation of university expenditure in order to promote effective innovation (Meo, Usmani, Vohra & Bukhari 2013).

b) Corruption strengthens the negative impact of university expenditure on high-tech export.

Having more university expenditure may have a negative influence on the budget originally allocated to foster high-tech export, as universities might end up running out of budget to continuously pursue high-tech projects. This is sometimes the case in some R&D novel projects that are heavily funded for a long period of time, yet with little or no evidence of innovative outcome. It could thus, be argued that more expenditures by universities would adversely deplete resources and cause universities high-tech projects to become threatened by a cut or discontinuation of funds. In order to maintain the continuous inflow of funds, universities may become increasingly engaged in corrupt practices so as to maintain expenditures and sustain continuation of high-tech export related projects. Consequently, more funds would continue to support university expenditure regardless of the awareness of a potentially failing or unrealistic high-tech project (Meo & Usmani, 2014).

c) Corruption weakens the positive impact of university expenditure on info-tech.

Having abundance or limited resources could be argued to have an influence on the degree of spending by institutions. Nevertheless, it could be more challenging to foster information technology in the wake of corrupt practices. Corrupt practices often have the propensity to disrupt, deter, or even halt standard operating protocols set to engender socio-economic progress. An otherwise positive effect of university expenditure on info-tech may not be readily achieved if the processes by which universities execute their expenditures have been stifled by corrupt practices. This may likely be the case when university leaders engage in corrupt practices, or when middle line managers/executives decide to divert info-tech research funds to other purposes that do not align with the tenets stipulated under the standard operating procedures. This could lead to cuts of project fund allocations, delays in project completion, or even a final halt of information technology projects. In addition, it could lead to loss of talented human capital as university grads or undergrads with innovative potentials would otherwise be forced to abandon projects that could have conversely fostered info tech projects (Alagöz, Akar & Akar, 2016).

POLICY IMPLICATIONS

In this paper, data for a panel of 19 countries was studied for the period 2011-2017. The result shows important impacts of university graduates and university expenditure on innovation, high technology export and information technology export. In relation to the African countries, the weak hi-tech export performance of the region can be explained by innovation capabilities. Even countries such as Nigeria, Zambia and Uganda can be considered leaders in high-tech export, progress is required by other African countries if the latter want to advance along the technological ladder. The same conclusions can be drawn for physical and social infrastructures for high-tech export. The African countries need to make a more effort to increase investment in infrastructure. Advances in the political stability and the economic activities will also bring a significant impact.

For knowledge-based societies, the interaction among a Triple Helix of university-industry-government is the source of innovation and development (Etzkowitz & Dzisah, 2017); the university has to undertake internal reform in partnership with various segments of society towards a university-led development for Africa. Given the significant findings reported in this study, it is recommended that policymakers should endeavour to implement effective and efficient strategies tailored towards anti-corruption. Policy-makers should ensure that government policies encompassing the institutions of higher learning and their graduates are revisited. In order to minimize the corruption's moderating influences on innovation, hi-tech exports and information technology, policy-makers should develop suitable initiatives.

First, formation of standard operating procedures to ensure procedural foundations and awareness against elements of professional misconducts in education (Braxton & Bayer, 1999; p. 137) such as accepting of material rewards in exchange for positive grades, assessments or selection to education programs and biasedly assigning of grades or assessments. Second, provide transparent criteria to ensure transparency in allocation of the university expenditures. Third, promote anti-corruption education and training to encourage university staff to perform tasks correctly and university graduate can join to fight corruption. Fourth, universities have to immerse experiential-learning outside the classroom into their curricula to link directly with the industries. These links will be especially important for universities to form an essential pillar of the community. Fifth, promote private knowledge-intensive business establishments to increase the university graduate employment in knowledge-intensive production and services activities to encourage innovation, involvement in information technology and hi-tech export. Sixth, promote private growth of investment in innovation and increase competitiveness. Thus, the growth of information technology and high-tech products exports can lead to a growth in competitiveness. Sixth, one of the main teaching missions of innovation universities is to translate ideas into goods and services through business formation. Financial support such as youth innovation funds could be channeled to help realization of ideas from university graduates into new export-oriented ventures.

CONCLUSION

The result of this study is thus, of great importance as it would aid the African governments. University graduates and expenditure are the major predictors of innovation, hi-tech export and information technology export. The findings have deepened prior theoretical insights into the predictors and significant conditions that are likely to innovation, hi-tech export and information technology export. The data shown that corruption is likely to exert significantly negative influence on university graduates and expenditure to innovation, hi-tech export and information technology export. It exemplifies that a negative influence is possible in circumstances where increased corruption has caused reduce in innovation, hi-tech export and information technology export. In globalized competition, countries have to increase high-technology exports. Capability of innovative capability is important for a country to export high technology products. Governments have to focus in facilitating conditions to improve the innovative capability of the countries.

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AN EMPIRICAL STUDY OF PROJECT COMPLEXITY FACTORS IN MALAYSIA CONSTRUCTION INDUSTRY

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Abstract

The present work attempts to develop a complexity evaluation framework of development projects by considering specific culture and environment in Malaysia. In order to demonstrate the applicability of this evaluation framework, it has considered different types of projects and collected the viewpoints from industry and academic with regard to their perception on 48 complexity related variables. A five-point Likert scale was used as a response format for different variables. Exploratory factor analysis was applied to the collected data which gave rise to an instrument consisting of 43 items representing seven factors. The finding further reveal that the items constituting these seven factors essentially represent seven key complexity factors namely size, diversity, context, belonging, autonomy, connectivity and emergence. The relative influence of each factors towards overall complexity of construction projects shows that size of the projects is the most important measure followed by diversity of the project while emergence comes last in order of important in the complexity evaluation in construction projects. The findings of this study have significant bearing on other similar kind of development projects undertaken in developing countries.

Keywords: Project complexity, construction industry, complexity evaluation framework, factor

INTRODUCTION

The construction industry is widely influenced by project complexity. However, limited of the nature of project complexity especially in Malaysia construction industry. The term of "Complexity" is not well defined in the literature. Therefore, it is necessary to clarify the definition in order to precisely measured project complexity in the construction industry. Construction projects, especially mega projects, involving large number of parties and their interconnections tend to generate complexity with defined characteristics. Project complexity bring a great challenge to Malaysia's construction sector. It is important to understand the complexity of the project context during the project process. Stakeholders in the project used to be aware of cases with problem of integration within their projects. By defining the project complexity measures, it helps to reduce the negative influence on project performance.

LITERATURE REVIEW

Complexity is one of the most important issues in project management. Even Project Management Institute (PMI), a leading body in the area, do not has a consistent view of complexity compare with the System of Systems (SoS) view, which is employed on most major defense and health projects in the Western world. Complexity are consisting of many varied interrelated parts and elements such as tasks, components and interdependence (Hornby and Wehmeier, 1995). However, there is no universal accepted definition of complexity (Ireland, 2013). According to Malaysia's researcher Abdou S.M. (2017), the reason of no universal accepted definition of complexity is because the bases of complexity are definite, various dynamic and uncertain which makes it difficult to define. By defining the complexity key drivers, the difficulty in defining complexity can be minimized, although there is difficulty in defining those key drivers (Koivu et. al., 2004, Sinha et. al., 2011).

Many researchers had come out some components that constitute the complexity. Helbing (2013) pointed out the components of "complexity" which display a variety of behaviors, including self-organization, emergent properties and non-linear behavior, and are often counter-intuitive. Project complexity consist of ambiguity and uncertainty, interdependency, non-linearity, unique local conditions, autonomy, emergent behaviors and unfixed boundaries (Javad Bakhshi, 2016). Correlation or relationship between elements in the project also an important part to consider in complexity. Javad Bakhshi (2016) said that complexity have high correlation interaction between

project components. Snowden and Boone (2007) emphasis on the cause-and-effect relationships between tasks and elements in the complexity projects. Based on the definitions above, complexity cause by many elements and parts and the relationships among them, it also cause by ambiguity and uncertainty of the conditions and unfixed boundaries. All the characteristics that included in complexity reveal in construction project especially mega projects.

There are several generally accepted definitions of project complexity listed in Table 1. Even though there are different in the definition but formal approaches shared limited commonality.

Table 1: Most Cited Different Project Complexity Definition in the Literature

Study	Industry	Project complexity definition
Turner and Cochrance (1993)	Construction	Degree of whether the goals and methods of achieving them are well defined.
Baccarini (1996)	General	Consisting of many varied interrelated parts and can be operationalized in terms of differentiation and interdependency.
Cicmil and Marshall (2005)	Construction	Invokes ambiguity, paradox and the dimensions of time, space and power of the organizing processes in project setting.
Maier (1998)	General	Operational and managerial interdependence of the elements – evolutionary development – emergent behavior – geographic distribution
Geraldi and Adlbecht (2007)	Plant Engineering	Complexity of fact, faith and interaction

(Sources: Number of citations is taken from Google scholar on 22/7/2019)

According to Project Management Institute (PMI) view, structural complexity and project complexity can be inferred based on integrity of communication, coordination and control. In the research conducted by Turner and Cochrance (1993), the uncertainty of objectives and methods of achieving project outcomes are also considered as important factors of contributing to a project complexity. Williams (1999) introduces a new description of project complexity which is based on the two factors of two structural uncertainties, such as numbers of activities and interdependencies of elements taken from the first definition, as well as uncertainty of objectives and methods based on the achievement of the second research (William, 1999). The Snowden and Boone (2007) approach to complexity further articulated in Kurtz and Snowden (2003), supports the System of Systems view of inclusion of autonomous and independent systems. Maier (1998) attempts to explain complexity in SoS in terms of characteristics, such as operational and managerial interdependence of the elements, evolutionary development, emergent behaviour, and geographic distribution. Autonomy and independence, belonging, connectivity, diversity, and emergence are foundations and characteristics of the SoS that have been considered by many researchers (Braha et al., 2006, Ireland et al., 2015, Sauser et al., 2009). Based on the research findings, it was found that differentiation between each project can be analyzed by context, autonomy, belonging, connectivity, diversity, emergence, and size which is tally to the PMI concept. Table 2 showed that matching of Snowden concept with PMI concept.

Table 2: Matching of Snowden Concept with PMI Concept

Snowden Concept	PMI Concept
Project context	System behavior
Connectivity	System behavior
Autonomy	System behavior
Size	System behavior
Diversity	Ambiguity
Emergence	Ambiguity
Belonging	Individual behavior

(Sources: Javad, Bakhshi, 2016. Clarifying the project complexity construct: Past, Present and Future. International Journal of Project management, pp. 1204.)

RESEARCH METHODOLOGY

The key issue in the present study is to examine the project complexity factors in Malaysia construction industry. Identified the potential key drivers for project complexity. This was followed by the design of a survey instrument and testing the reliability and validity of the same. Finally, the survey instrument was administered amongst the respondents.

Target population, Sample Size and Sampling

The targeted respondents were categorized into three groups according to the working experience; 40% of the respondent have working experience between 6 to 10 years. 30% respondents have working experience between 11-15 years, 20% respondents have working experience between 16-20 years and 10% respondents have working experience >20 years.

The common strategies for the adequate sample size for factor analysis include the sample size of 100 or more. It has been reported that results with the correlation coefficients of >0.80 involve a smaller sample size (Guadagnoli, 1988). Sapnas (2002) has indicated that a sample size of 50 cases could satisfactory for a factor analysis (Sapnas, 2002).

Table 3: Respondents' Profile

Experience		
< 5 years	20	15.4%
6-10 years	45	34.6%
11-15 years	38	29.2%
16-20 years	18	13.8%
>20 years	9	6.9%
Characteristic of project involve		
Public	41	31.7%
Private	89	68.3%
Yearly turnover		
Not exceeding RM200,000	1	1%
Not exceeding RM500,000	1	1%
Not exceeding RM1 million	16	12.4%
Not exceeding RM3 million	12	9.3%
Not exceeding RM5 million	1	1%
Not exceeding RM10 million	44	33.9%
Unlimited	55	41.4%

Table 3 shows that the lowest numbers of respondents that having experience more than 20 years only 9 (6.9%), followed by those between 16 years to 20 years working experience 18 (13.9%). The highest respondent rate was from group that have 6 to 10 years 45 respondents (34.6%) and between 11 to 15 years 38 respondents (29.2%). Most of the respondents (68.3%) have involved in private projects and only 31.7% respondents involved in public projects. Further, majority of the respondents worked in organisation that have turnover unlimited (41.42%) and not exceeding 10 million (33.89%), which sum of 75.3% in the total respondents.

Design of Survey Instrument

A list of project complexity related variables was derived from literature and shown to 5 experts comprising 3 practitioners in construction industry that involve in mega project for past 5 years and 2 professors who have more than 10 years of teaching and consulting experience for many construction projects in order to secure their viewpoints regarding the suitability of the project complexity measurement in Malaysia construction industry. Due to their rich experience, they were thought to be familiar with economic, socio-cultural and political environment surrounding various projects earmarked for this study. The three practitioners were senior project managers and project directors in listed construction company in Malaysia. The choice of these industry practitioners was based on their rich experience with construction projects in their respective regions. The experts confirmed that the measurement items identified were relevant to Malaysia construction industry.

Data Collection

All the respondents were identified as contractors and all respondents from Klang Valley areas. The contact number, e-mail address, postal address of respondents were collected from the database. Appointments were made through telephone calls and e-mails along with the date, time and venue from them. Based on the appointment, the investigator visited the designed place in person with hard copy of questionnaire with a view to eliciting responses from them through face-to-face interview. The response rate turned out to be moderate which is normally expected in survey research.

DATA ANALYSIS

At about a month time, the investigator were able to submit 150 completed questionnaire, out of which 20 questionnaires were found either incomplete or improperly filled. Thus the total number of effective response come out to be 130, indicating a valid response rate of 86.67%. These responses were found to be from different categories of stakeholders who worked on different types of projects. Once the data was received, it was checked for missing values, inconsistency and negatively framed responses. The scores on negatively framed questions were suitably reversed and all the scores were fed into SPSS software (version 20). We present an overview of the characteristics of the projects and respondents' demographic profile and the related descriptive statistics. Finally the results of exploratory factor analysis (EFA) carried out through SPSS (version 20.0) are presented.

Reliability of the Survey Instrument

In order to find out the reliability of the survey instrument, a pilot survey was carried out amongst 30 contractors, who were working on ongoing construction projects. These respondents were found to have over 5 years of experience in the construction industry and had been involved in the mega project for building and infrastructure work. In the first stage, the variability of responses on each measurement items amongst 30 respondents was checked through the scores of standard deviations. The standard deviations were all found to be greater than 1 except in two variables namely "Team transparency, empathy (the personal and intangible matter that improves cooperation)" and "Variety of the project management methods and tools applied". Despite their low standard deviations, these variables were not deleted because of theoretical significance in the measurement of construction project complexity.

In the next stage, scale reliability (internal consistency) was inspected using Cronbach's coefficient alpha. A scale is said to be reliable, if Cronbach's coefficient alpha of the scale is well above the threshold value of 0.700 and the acceptable minimum of 0.600 (Hair et al., 2006). In this study, the Cronbach's coefficient alpha for the entire scale consisting of 46 measurement variables was 0.802. Investigation of individual variables shows that deletion of three variables, namely "Number of the project management methods and tools applied (0.763)", "Number of different occupational specializations (0.757)" and "Cultural variety (0.765)", would slightly improve the value of Cronbach's alpha as indicated in the brackets of the above variables. However, the above variables were not discarded at this stage due to some plausible reasons. Firstly, the improvement achieved through the deletion of the above variables as mentioned in the brackets was marginal. Secondly, the inclusion of above three variables does well maintain the Cronbach's coefficient above 0.7 threshold value. Finally, this being a pilot study and the variables being important in theoretical sense.

Descriptive statistics of Project Complexity

The responses on 48 variables relating to project complexity provided by the respondents were included in the present study. The mean and standard deviations of the scores on responses are presented in Table 4 as shown below. The minimum and maximum values were 1 and 5 respectively, in general, respondents used the entire 5 point survey scale. The mean score ranged between 2.34 (Goals/ interests alignment) and 3.89 (Number of activities). Standard deviations were found to be above 1 except in eight variables; "degree of obtaining information"(0.899), "Team/ partner cooperation and communication"(0.961), "Clients with unrealistic goals"(0.855), "Diversity of tasks"(0.861), "Cultural variety"(0.895), "Numbers of activities"(0.966), "Number of different occupational specializations"(0.942) and "Number of stakeholders"(0.845). However, the standard deviation values of these eight questions varied considerably amongst the respondents.

Table 4: Descriptive Statistics of Complexity variables

Complexity Variable		Minimum score	Maximum score	Mean score	Std. dev
CV1	Unusual type of design process	1	5	2.25	1.422
CV2	Demand of creativity	1	5	2.52	1.145
CV3	Decision making process	1	5	3.04	1.252
CV4	Cultural configuration	1	5	3.13	1.371
CV5	Local law and regulations	1	5	2.93	1.269
CV6	Environment of changing technology, economy and nature	1	5	2.86	1.367
CV7	Degree of obtaining information	2	5	3.26	0.899
CV8	Quality requirements	1	5	2.95	1.362
CV9	Specific requirement/ Standards	1	5	3.12	1.275
CV10	Technical capability of team	1	5	2.98	1.285
CV11	Trust in stakeholders	1	5	3.03	1.183
CV12	Team transparency, empathy (the personal and intangible matter that improves cooperation)	1	5	3.21	1.363
CV13	Technological degree of innovation	1	5	2.81	1.052
CV14	Responsibility & accountability	1	5	2.86	1.298
CV15	Level of interrelation of between phases	1	5	3.18	1.146
CV16	Team/ partner cooperation and communication	2	5	3.63	0.961
CV17	Interdependencies between sites, departments and companies	1	5	3.30	1.204
CV18	Stakeholders interrelation/ interdependencies	1	5	3.21	1.100
CV19	Interdependence between components of the product	1	5	3.05	1.126
CV20	Resource and raw material interdependence	1	5	2.74	1.145
CV21	Dependencies between schedules	1	5	2.49	1.316
CV22	Face to face relationship between team members	1	5	2.83	1.043
CV23	Number of interfaces in the project organization	1	5	3.15	1.263
CV24	Relations with permanent organizations	1	5	2.58	1.291
CV25	Capacity of transferring information	1	5	2.86	1.247
CV26	Level of processing information	1	5	2.90	1.110
CV27	Goals/ interests alignment	1	5	2.34	1.138

CV28	Dynamic of the task activities	1	5	2.54	1.261
CV29	Uncertainties of scope	1	5	3.10	1.066
CV30	Uncertainty & clarity of objectives or goals	1	5	2.93	1.123
CV31	Uncertainty in technical methods	1	5	3.22	1.397
CV32	Information uncertainty	1	5	3.29	1.185
CV33	Clients with unrealistic goals	2	5	3.48	0.855
CV34	Market uncertainty	1	5	3.03	1.073
CV35	Variety of financial resources	1	5	2.96	1.245
CV36	Variety of the project management methods and tools applied	1	5	2.70	1.185
CV37	Diversity of tasks	2	5	3.38	0.861
CV38	Cultural variety	2	5	3.24	0.895
CV39	Variety of the technologies used during the project	1	5	2.92	1.189
CV40	Variety of technological skills needed	1	5	3.18	1.463
CV41	Variety of information systems to be combined	1	5	3.09	1.346
CV42	Duration of the project	1	5	3.32	1.304
CV43	Number and quantity of resources	1	5	3.79	1.226
CV44	Numbers of activities	2	5	3.86	0.966
CV45	Number of the project management methods and tools applied	1	5	3.31	1.230
CV46	Number of different occupational specializations	2	5	3.68	0.942
CV47	Number of stakeholders	2	5	3.52	0.845
CV48	Number of companies/ projects sharing their resources	1	5	3.29	1.167

Note: Responses collected on a five point Likert scale (1-Strongly Disagree; 5-Strongly Agree)

Assessing the factorability of Project Complexity Indicators

For assessing the factorability of 48 complexity measurement variables, we found out the correlation for each pair of 48 variables which is demonstrated with the help of a correlation matrix. The correlation matrix suggests that the sample is characterised by high degree of related variables which could be grouped together. This gives us an indication that exploratory factor analysis (EFA) could be carried out in the whole dataset.

However, before carrying out EFA, the overall significance of the correlation matrix and its factorability needed to be tested with the help of Bartlett's test of sphericity and Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy respectively. Bartlett's test statistics was found significant at 0.000 levels, which indicates the presence of non-zero correlations in the correlation matrix. Further the KMO measure of the sampling adequacy turns out to be 0.832. These measures indicate that the variables is appropriate for factor analysis.

Factor Analysis following Varimax Rotation

From the factor analysis, we were able to extract the appropriate number of factors which turned out to be seven. Therefore, while identifying the final factors underlying the Key Performance Indicators (KPIs), the process was subjected to four conditions: (i) the number of factors fixed at seven, (ii) deletion of items with loadings of less than 0.5 or cross loading of greater than 0.5, (iii) retention of only those factors with at least two items and (iv) the number of factors extracted should account for at least 60% of the variance (Field, 2005; Hair et al., 2006; Malhotra and Dash, 2011).

Table 5: Result of the Factor analysis

Code	Variable	Components						
		1	2	3	4	5	6	7
SZ1	Numbers of activities	0.873						
SZ2	Duration of the project	0.867						
SZ3	Number and quantity of resources	0.862						
SZ4	Number of companies/projects sharing their resources	0.772						
SZ5	Number of stakeholders	0.734						
SZ6	Number of different occupational specializations	0.638						
SZ7	Number of the project management methods and tools applied	0.572						
DVS1	Diversity of tasks		0.883					
DVS2	Variety of information systems to be combined		0.762					
DVS3	Cultural variety		0.743					
DVS4	Variety of technological skills needed		0.739					
DVS5	Variety of the technologies used during the project		0.703					
DVS6	Variety of the project management methods and tools applied		0.586					
DVS7	Variety of financial resources		0.508					
CTX1	Decision making process			0.922				

CTX2	Degree of obtaining information	0.845	
CTX3	Cultural configuration	0.806	
CYX4	Environment of changing technology, economy and nature	0.736	
CTX5	Demand of creativity	0.704	
CYX6	Local law and regulations	0.636	
BLG1	Trust in stakeholders	0.884	
BLG2	Team transparency, empathy (the personal and intangible matter that improves cooperation)	0.855	
BLG3	Specific requirement/ Standards	0.826	
BLG4	Quality requirements	0.810	
BLG5	Technological degree of innovation	0.638	
BLG6	Responsibility & accountability	0.534	
ATM1	Interdependencies between sites, departments and companies		0.933
ATM2	Stakeholders interrelation/ interdependencies		0.897
ATM3	Team/ partner cooperation and communication		0.858
ATM4	Interdependence between components of the product		0.750
ATM5	Level of interrelation of between phases		0.672
ATM6	Resource and raw material interdependence		0.586
CNT1	Number of interfaces in the project organization		0.835

CNT2	Face to face relationship between team members							0.817
CNT3	Capacity of transferring information							0.780
CNT4	Level of processing information							0.626
CNT5	Goals/ interests alignment							0.586
EMG1	Clients with unrealistic goals							0.900
EMG2	Uncertainties of scope							0.788
EMG3	Information uncertainty							0.867
EMG4	Uncertainty in technical methods							0.836
EMG5	Uncertainty & clarity of objectives or goals							0.765
EMG6	Market uncertainty							0.683

Eigen value	4.038	3.846	3.706	3.244	3.145	3.031	1.954
Percentage of variance explained	14.389	13.875	12.632	11.279	11.225	10.384	7.243
Cumulative percentage	14.389	28.264	40.896	52.175	63.400	73.784	81.027

KMO = 0.832; Bartlett's test sphericity = 4138.543; significance = 0.000

Factor analysis was iteratively repeated and items deleted sequentially resulting in a final instrument of 43 items. The 43 items 7 factor instrument accounted for 81.027% of the variance in the dataset. From the analysis, it is evident that six variables loaded under factor 1 seems to be associated with *context complexity*. The second factor comprises six variables which reflect the *belonging dimension* of project complexity. The third factor comprise six variables which reflect the *autonomy dimension* of the project. The five variables under factor forth represent *connectivity* between parties involve whereas the six variables under factor fifth attempt to *emergence* of uncertainty condition. The last two factor comprise of 7 variables which factor sixth represent *diversity* of the project and factor seventh attempt to *size* of the project.

Factor of 'size' is the most important measure of construction project complexity, having the highest eigenvalue of 4.038 and accounting for 14.389% of the variance in the dataset. This is followed by the measure 'diversity' with an eigenvalue of 3.846 which explains 13.875% of the total variance. The third most important complexity measure was found to be 'context' with an eigenvalue of 3.706 and explaining 12.632% of the variance while the fourth important measure turns out to be 'belonging' with an eigenvalue of 3.244 and contributing to 11.279% of the total variance. The fifth most important complexity measure was found to be 'autonomy' with an eigenvalue of 3.145 and explaining 11.225% of the total variance while the sixth important measure turns out to be 'connectivity' with an eigenvalue of 3.031 and contributing to 10.384% of the total variance. The last complexity measures in order of importance were 'emergence' with an eigenvalue 1.954 and contributing 7.243% of total variance. These seven constructs of complexity constitute the key factors of complexity in Malaysia construction industry.

Reliability for Project Complexity Factors

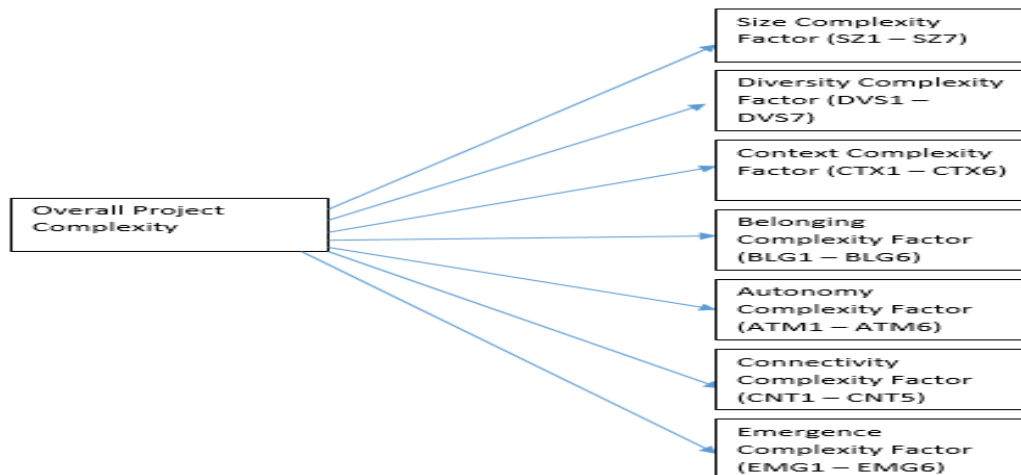
Reliability of the project complexity factors was established through Cronbach's alpha coefficient which tested internal consistency of the items. The 43 item scale had a reliability of 0.835 which is well above 0.70 recommended for similar studies (Hair et al., 2006; Malhotra and Dash, 2011). The Cronbach's alpha coefficient for each factor was as follows: Size complexity measure: 0.865; diversity complexity measure: 0.853; context complexity measure: 0.833; belonging complexity measure: 0.826; autonomy complexity measure: 0.818; connectivity complexity measure: 0.823; and emergence complexity measure: 0.798. This demonstrates that the factors extracted from the analysis are considered adequate in the complexity measurement for Malaysia construction projects.

Theoretical Framework

Project complexity factors that determined through factor analysis of complexity variables and validated through appropriate tests enabled us to develop a theoretical framework of project complexity for Malaysia construction industry.

This framework demonstrates that the project complexity can be described in terms of Size variables (SZ1...SZ7), Diversity variables (DVS1...DVS7); Context variables (CTX1...CTX6); Belonging variables (BLG1...BLG6); Autonomy variables (ATM1...ATM6); Connectivity variables (CNT1...CNT5); Emergence variables (EMG1...EMG6). A brief description of the factors constituting the above variables is given below.

Figure 1: PROJECT COMPLEXITY FRAMEWORK FOR MALAYSIA CONSTRUCTION INDUSTRY



CONCLUSION AND DISCUSSION

This paper reviews existing perspectives on project complexity three different views of complexity and the differences between these three schools of thought, these being the PMI view, the SoS view, and the view developed from the research papers analysed. The research explores the historical development of project complexity in Malaysia construction industry.

The main contribution of the paper is in the insights gained in the attempt to clarify the project complexity constructs while in parallel, also considering different aspects of complexity. Other complexity factors like complicated complex and chaotic also is important and must take into consideration. The research results show that these concepts are not always consistence in using and sometime interchangeably. Furthermore, some project complexity factors identified in the literature cannot be part of complexity as mentioned in previous sections. For example, technological aspects of the project and special requirements can be seen as the lack of knowledge related to complicated projects.

The study has limitation as the analysis is not organised or differentiated by the different types of projects (e.g. engineering, construction, IT, industrial, business, defence, etc), this level of examination can serve as a potentially valuable topic for future research. It is an advantages to developing a greater understanding of the behaviour of various types of projects required further exploration.

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USE OF ICT IN EDUCATION AMONG SECONDARY SCHOOL TEACHERS IN MALAYSIA

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Abstract

Malaysia has embarked on various programmes to incorporate the use of Information, Communication, and Technology (ICT) in education. ICT has been stipulated in the latest Malaysian Education Blueprint (2013-2025) and has become one of the main elements in education transformation plan. The aim of ICT integration is to create a better environment for teaching and learning processes and to encourage students in developing critical thinking, problem solving and independent learning skills. This shift initiative has placed teaching into a more challenging profession. Teachers are required to use the technology-based teaching and learning tools in conjunction with their conservative teaching methods. To successfully integrate ICT into pedagogy requires teachers' willingness and commitments, and for that it requires the access to good infrastructures and supports. However, a closer look at the usage rate of ICT in public schools unveils the shortcomings of this education transformation plan when the usage of ICT facilities by teachers remains remarkably low. Through the lenses of Unified Theory of Acceptance and Use of Technology (UTAUT) model, this research attempted to examine the factors that influence public secondary school teachers' intention and behaviour to use ICT facilities in education. A cross-sectional study was conducted and self-administered questionnaires were distributed to government secondary school teachers in Penang. Results show that all indicated factors have significant influence on teachers' intention and usage behaviour of ICT in their teaching. For future research, there is a need to expand the investigation by including larger target respondents involving both private and public schools from other states in Malaysia.

Keywords: ICT, Education, Behavioural Intention, Use Behaviour, Public Schools

INTRODUCTION

Application of Information and Communication Technology (ICT) has become an important agenda for every country including developing countries. Align with this phenomena, advancement of technology has resulted in an increase use of ICT in all sectors including education (Meenakshi, 2013). Simin and Sani (2015, p. 1) defined ICT in education as "the use of computer-based communication that incorporates into daily classroom instructional process." As a result of the integration of ICT and education, an educational innovation will be realised which can lead to a new development that would enhance the learning process. The use of ICT could assist teachers to inspire the students' interest in learning and gaining knowledge, it enables cooperation and allows various forms of interaction and communication between teachers and students (Kubricky & Castkova, 2015). Besides, it could also reduce the time consumed by the students in obtaining knowledge and skills (Vega-Hernandez, Patino-Alonso & Galindo-Villardón, 2018). In the United Nations Educational, Scientific and Cultural Organization (UNESCO) review, Malaysia is seen as the first few countries in the world that has initiated the use ICT in its education system. This is because the government of Malaysia has already implemented the use of ICT in education as early as in the 1970s (Simin & Sani, 2015).

The latest Malaysia Education Blueprint (2013-2025) highlighted that the main elements in transforming education in Malaysia is by focusing on quality education which can be achieved through the use of ICT in teaching (Simin & Sani, 2015). Parallel to this objective, the Ministry has in the past two decades intensively invested approximately RM6 billions in building ICT infrastructures for government schools. On top of that, the Smart School Roadmap and the policy on ICT in education were established in 2010. Not only that, the 1BestariNet project that focuses on giving broadband access to every public school in Malaysia and the Virtual Learning Environment (VLE) initiatives which were implemented in 2011, are the support of ICT into daily teaching practice. These projects were

the evidence that the government is promoting the use of ICT in education (Ministry of Education, 2013).

Despite the government's initiatives, a study by Ministry of Education in 2011 revealed that the usage of ICT is rarely seen in which about 80% of teachers spent less than one hour a week in using ICT. The review conducted by UNESCO (2012) (as cited in Malaysia Education Blueprint (2013-2025)) had supported that even if ICT is being promoted in teaching, teachers only used PowerPoint as an instructional tool and nothing goes beyond that. This is because majority of the teachers in Malaysia had just an average knowledge in ICT (Simin & Sani, 2015). Besides, teachers were not confident to apply technology in classrooms, and they felt inferior to teach Gen-Y students who are tech-savvy (Mustafa, 2016).

Prior research conducted by Singh and Chan (2014) involving the secondary school teachers in Penang indicated that majority of the teachers agreed that the use of computer does give them pressure. The research also proved that 84% teachers are unsure whether the use of ICT in teaching and learning motivates them or not. Consistent with this issue, the study on the factors that influence the intention to use ICT in education among secondary school teachers should be explored further. This is because statistic shows that there are low percentage of ICT usage in teaching by secondary school teachers as compared to primary school teachers (UNESCO, 2016).

Past studies on the acceptance and usage of ICT in education were mainly focused on the application of Technology Acceptance Model (TAM) (Teeroovengadam, Heeraman & Jugurnath, 2017) and Theory of Planned Behaviour (TPB) (Norbu & Salleh, 2014). Although there were some previous researches that looked into the application of Unified Theory of Acceptance and Use of Technology (UTAUT) model on the usage of ICT in teaching (Chen & Chen, 2015; Cheung, Chan, Brown & Wan, 2016), but there is still a scarcity of empirical findings that mainly concentrated on secondary school teachers' perspective and their intention to use technologies in giving instructions (Zalah, 2018). This is proven by Attuquayefio and Addo's (2014) study which focused on factors that affect the students' intention and acceptance towards e-learning through UTAUT model in Ghana. In contrast, teachers' perspective of ICT needed to be investigated as teachers play an important role in use of modern technologies in instructional setting and educations field (Qasem & Viswanathappa, 2016). Furthermore, the existing research on the factors influencing the use of ICT by teachers using UTAUT model was conducted overseas such as in Saudi Arabia (Alshmrany & Wilkinson, 2017) but very little research was done in Malaysia. Thus, this study seeks to investigate the factors that influence the use of ICT in education among secondary school teachers in Malaysia.

This paper is organized as follows: the next section presents an overview of the relevant literature review and then proceeds to outline the proposed conceptual framework. The ensuing section describes the methodology used to conduct the research. Then, data analyses are presented. The final section discusses and concludes on the research findings and the implications of the study with directions for future research.

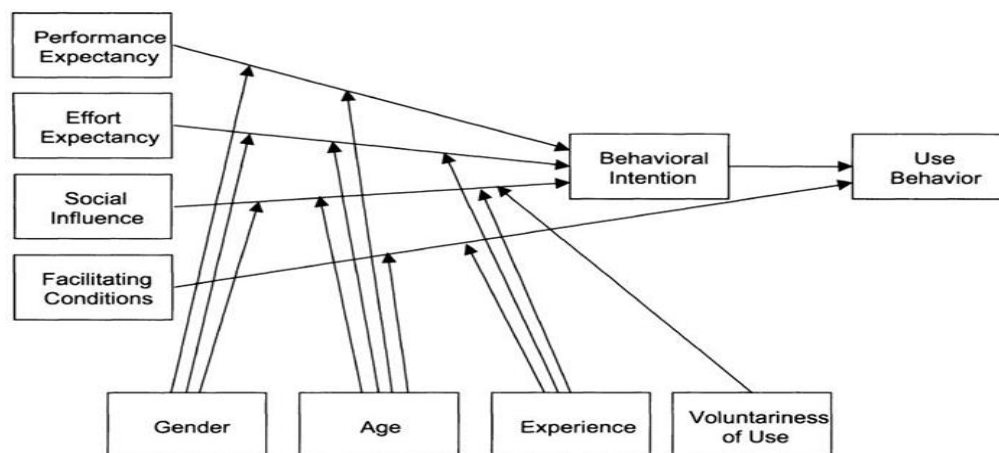
LITERATURE REVIEW

Unified Theory of Acceptance and Use of Technology (UTAUT)

The Unified Theory of Acceptance and Use of Technology (UTAUT) was proposed by Venkatesh, Morris, Davis and Davis (2003). UTAUT provided scholars a unified view of user acceptance on technology adoption and helped them understand the drivers of technology acceptance (Venkatesh *et. al.*, 2003). The original constructs of the UTAUT model consisted of Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Facilitating Condition (FC), Behavioural Intention (BI) and Use Behaviour (UB) [Figure 1]. UTAUT is a result of combining eight technology acceptance models and theories in order to counter the deficiencies in the prior technology adoption models. The eight models referred to were Theory of Reasoned Action (TRA), Technology Acceptance Model (TAM), Motivational Model (MM), Theory of Planned Behaviour (TPB), Combined TAM and TPB (C-TAM-TPB), Model of PC Utilization (MPCU), Innovation Diffusion Theory (IDT) and Social Cognitive Theory (SCT). In the past, UTAUT model has been applied in areas such as mobile banking

(Bhatiasevi, 2015), mobile microfinance (Warsame & Ileri, 2018) and mobile health services (Hoque & Sorwar, 2017).

Figure 1 – UTAUT Model



(Source: Venkatesh *et. al.*, 2003)

Throughout the years, UTAUT model has gained popularity due to its validity, stability and viability in technology adoption studies. Hence, this study adopted the UTAUT model to assess the use of ICT in education among secondary school teachers in Malaysia (all the moderators – Gender, Age, Experience and Voluntariness of Use have been excluded). In addition, a new construct – Computer Self-Efficacy (CSE) will be added as it is related to the scope of this study.

Review of Prior Studies

Performance Expectancy (PE)

PE is defined as “the degree to which using a technology will provide benefits to consumers in performing certain activities” (Venkatesh *et al.*, 2012, p. 159) or “the degree to which the user expects that using the system will help him or her to attain gains in job performance” (Venkatesh *et al.*, 2003, p. 447). From the study of Loh, Ahmad and Singh (2016), PE is found to have a positive impact on Behavioural Intention (BI) to use interactive whiteboard among teachers in Perak. A similar finding has been found in Tosuntas, Karadağ, and Orhan (2015), also a study involving the adoption of interactive whiteboard by academics in Turkey. Another study by Pullen, Swabey, Abadoo and Sing (2015) on the willingness of pre-services teachers to use mobile technology for their learning in a Malaysian university showed a similar positive relationship.

Effort Expectancy (EE)

Effort Expectancy (EE) can be defined as the degree of ease associated with the use of technology (Venkatesh *et. al.*, 2012). EE is found to have a positive relationship with BI. These are found in both Tosuntas, Karadağ, and Orhan (2015) and Pullen, Swabey, Abadoo and Sing (2015). However, EE is found to have a negative relationship with BI in Ouedraogo’s (2017) study on the determinants of acceptance and educational use of ICT by teachers in Sub-Saharan African countries. These teachers somehow felt that a significant investment in time and money was needed in order to digitize the course materials and prepare presentation slides.

Social Influence (SI)

A past study by Alshmrany and Wilkinson (2017) indicated that SI had a negative relationship with BI among Saudi Arabian teachers in primary schools. SI is defined as the extent to which one perceives that important others (for example, family members and friends) believe they should use a particular technology (Venkatesh *et. al.*, 2012). In Saudi Arabia, the teachers opined that from societal point of view, ICT is more useful for older children, not the primary school children, hence, the negative outcome. In contrast, Nandwani and Khan (2016) in a study on the factors that influence teachers’

intention to use technology in higher education in Pakistan found that SI had a significant, positive influence with BI.

Facilitating Condition (FC)

Facilitating condition refers to “the degree to which an individual believes that an organization or technical infrastructure exists to support use of the system” (Venkatesh *et. al.*, 2012, p. 159). In the study of Alkharang (2014) involving the adoption of e-learning in higher educational organizations in Kuwait, the researcher found that FC is negatively related to e-learning use behaviour. This was caused by the unavailability of e-learning in most of the institutions even though the respondents believed that they had the required infrastructure and skill/technical knowledge to use e-learning. Furthermore, a research by Kocaleva, Stojanovic and Zdravev (2015) found that FC had a strong correlation with the behavioural intention and thus the most influence on the behaviour of participants (teaching staff) for acceptance and use of the e-learning system in a Macedonian university.

Computer Self-Efficacy (CSE)

According to Bandura (1997, p. 3), self-efficacy is “a belief in one’s capabilities to organize and execute the courses of action required to produce given attainments.” In this context, computer self-efficacy is specifically referring to “a judgment of one’s capability to use a computer” (Compeau & Higgins, 1995, p.192). Turel (2014) who studied the relationship between several perceptions of teachers in Turkey and their use of educational technology discovered that the result for teachers’ computer self-efficacy is positive. It meant that the teachers had good computer self-efficacy and they often use computers to perform their task. In another study that focused on various relationships between the teachers’ ICT self-efficacy in using ICT for teaching purposes and factors that affected teachers’ ICT self-efficacy in Norwegian schools revealed that their ICT self-efficacy and their use of ICT in teaching is moderately positive (Hatlevik & Hatlevik, 2018).

Behavioural Intention (BI)

Behavioural intention (BI) is referring to the individual willingness to use a technology system (Venkatesh *et. al.*, 2012). Based on Ouedraogo’s (2017) study, ICT acceptance by teachers will positively affect the adoption of some specific related software. In addition, BI to use Learning Management Systems (LMS) among higher education teachers turned out to be a good predictor of actual usage in Radovan and Kristl (2017).

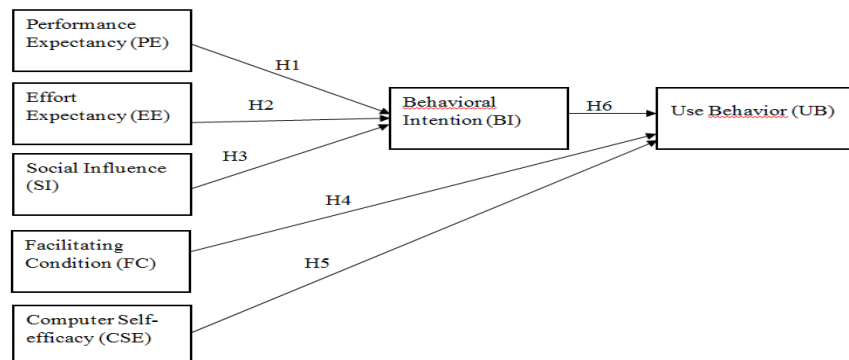
Use Behaviour (UB)

Use Behaviour (UB) measures the user’s actual usage of technology (Venkatesh *et. al.*, 2003). In other words, use behaviour indicates when the teachers turn their behavioural intention to an actual action or performance. Additionally, actual use behaviour can be predicted by behavioural intention (Agudo-Peregrina, Hernández-García & Pascual-Miguel, 2014).

PROPOSED CONCEPTUAL FRAMEWORK

Based on UTAUT model and Computer Self-Efficacy (CSE) construct, the proposed conceptual framework is presented in Figure 2 below.

Figure 2 – Proposed Conceptual Framework



Hypotheses Development

Next, six hypotheses have been developed and tested. They are as the following:

- H1 There is a positive relationship between Performance Expectancy (PE) and behavioural intention to use ICT in education.
- H2 There is a positive relationship between Effort Expectancy (EE) and behavioural intention to use ICT in education.
- H3 There is a positive relationship between Social Influence (SI) and behavioural intention to use ICT in education.
- H4 There is a positive relationship between Facilitating Condition (FC) and teacher use behaviour of ICT in education.
- H5 There is a positive relationship between Computer Self-Efficacy (CSE) and teacher use behaviour of ICT in education.
- H6 There is a positive relationship between behavioural intention and teacher use behaviour of ICT in education.

RESEARCH METHODOLOGY

Sampling Design

The sample of this study is among secondary school teachers in Penang. According to UNESCO Institute for Statistics (2016), teachers at secondary schools are using less ICT in teaching as compared to primary school teachers. Besides, government schools are selected in this study due to government schools have greater number of students than the private schools. Also, due to their numbers, they lack ICT facilities to provide a good learning environment to students than the private schools (School Advisor, 2017). Schools with the highest number of teachers in Penang were selected. Five schools that were chosen are: Sekolah Menengah Kebangsaan Jit Sin, Sekolah Menengah Kebangsaan Heng Ee, Sekolah Menengah Kebangsaan Chung Ling, Sekolah Menengah Kebangsaan Phor Tay and Sekolah Menengah Kebangsaan Perempuan Cina Pulau Pinang.

Research Methodology

The study employs a cross-sectional approach with a total of 333 questionnaires were distributed. The questionnaires were distributed after getting the approvals of the school principals. However, Sekolah Menengah Heng Ee did not give permissions for questionnaire distributions. The questionnaires were either directly (face-to-face) or indirectly (via school principals) distributed to the respondents. Respondents were required to answer 29 questions by giving their answers based on five-point Likert scale measurement. Out of 333 questionnaires distributed, 321 were collected back but only 293 questionnaires were usable for analysis. Analysis has been carried out by using Statistical Analysis System (SAS) software.

DATA ANALYSIS

Table 1 above summarised the demographic profile of 293 respondents who took part in this study. The majority respondents were female, 232 (79.18%) and only 61 (20.82%) respondents were male. Most of the respondents were between 31 to 40 years old (121 respondents, 41.30%) followed by 74 (25.26%) respondents at the age group of 41 to 50 years old, 61 (20.82%) respondents above 50 years old and only 37 (12.63%) respondents were aged from 20 to 30 years old. Most of the teachers participated in this study had a bachelor's degree (239 respondents, 81.57%), followed by master's degree and above (47 respondents, 16.04%) and only 7 respondents (2.39%) had diploma qualification. In addition, more than half of the respondents (189 respondents, 64.51%) had more than 10 years of experience in teaching.

Table 1: Demographic Profile of Respondents

Demographic Criteria	Frequency	Percentage (%)
Gender		
Female	232	79.18
Male	61	20.82
Age Group		
20 to 30 years old	37	12.63
31 to 40 years old	121	41.30
41 to 50 years old	74	25.26
Above 50 years old	61	20.82
Education Level		
High School	0	0
Diploma	7	2.39
Degree	239	81.57
Master and above	47	16.04
Teaching Experience		
1 to 5 years	39	13.31
6 to 10 years	65	22.18
11 to 20 years	108	36.86
Above 20 years	81	27.65
ICT Usage Experience		
Yes	293	100.00
No	0	0
Subject		
Language	104	35.49
Mathematics	38	12.97
Science	54	18.43
Accounting and Finance	15	5.12
Others	82	27.99

The percentage of respondents who had 1-5 years of teaching experience is 13.31%, followed by 65 respondents (22.18%) with six to 10 years of experience and 81 respondents (27.65%) had more than 20 years of teaching experience. Subjects taught by the respondents are mostly in language subjects (35.49%), followed by Science (18.43%), Mathematics (12.97%) and accounting and finance (5.12%). The remaining 27.99% were related to other subjects that were not listed in the questionnaire. All of these respondents had the experience of using ICT.

Table 2: Reliability Test

Variable	Constructs	Cronbach's Alpha	Number of Items
IV 1	Performance Expectancy (PE)	0.9120	4
IV 2	Effort Expectancy (EE)	0.9101	4
IV 3	Social Influence (SI)	0.9205	4
IV 4	Facilitating Condition (FC)	0.9149	6
IV 5	Computer Self-efficacy (SE)	0.9162	5
IV 6	Behavioural Intention (BI)	0.9476	3
Dependent Variable	Use Behaviour (UB)	0.8141	3

According to Sekaran and Bougie (2016), the acceptable threshold for one variable to be reliable is the cronbach's alpha exceeds 0.60. As shown in Table 2, the cronbach's alpha values range from 0.8141 to 0.9476. Hence, all items are reliable.

Table 3: Pearson Correlation Coefficient Analysis

Variable	r	p-value
Performance Expectancy	0.6975	<.0001
Effort Expectancy	0.6603	<.0001
Social Influence	0.6006	<.0001
Facilitating Condition	0.6707	<.0001
Computer Self-efficacy	0.6591	<.0001
Behavioural Intention	0.8192	<.0001

Based on Table 3 above, there is a positive moderate correlation between Performance Expectancy and Behavioural Intention to use ICT in education. Besides, there is a positive moderate correlation between Effort Expectancy and Behavioural Intention to use ICT in education. Moreover, there is a positive moderate correlation between Social Influence and Behavioural Intention to use ICT in education. Other than that, there is a positive moderate correlation between Facilitating Condition and teachers' Use Behaviour of ICT in education. Furthermore, there is a positive moderate correlation between Computer Self-Efficacy and Use Behaviour of ICT in education. On the other hand, there is a positive high correlation between Behavioural Intention and Use Behaviour of ICT among teachers in education.

Table 4: Summary of Model

	R	R ²	Adjusted R ²	Standard Error of the Estimate
BI	0.4992	0.5692	0.5647	0.2492
UB	0.4026	0.6983	0.6951	0.1621

In Table 4 above, 56.92% of teachers' Behavioural Intention to adopt ICT in education is explained by the three IVs and the remaining 43.08% can be explained by other factors that have not been discussed in this study. Besides, 69.83% of teachers' Use Behaviour towards the use of ICT in education (DV) is explained by the three Independent Variables (FC, CSE, and BI) and the remaining 30.17% can be explained by other variables not covered in this research.

Table 5: Parameter Estimates of Construct for Behaviour Intention

Construct	df	Parameter Estimate	Standardised Estimate	Standard Error	t	Pr > t
Intercept	1	0.4255	0	0.1858	2.29	0.0227
PE	1	0.4125	0.3786	0.0630	6.54	<.0001
EE	1	0.2958	0.2706	0.0618	4.79	<.0001
SI	1	0.2099	0.2105	0.0506	4.15	<.0001

Table 5 indicates that the results (p-value) for three IVs (PE, EE and SI) are less than 0.0001 and have positive effects on the secondary school teachers' intention to adopt ICT in education as the p-value is below 0.05. Therefore, H1, H2 and H3 are supported in this study. Besides that, the value of standardised coefficient for all the three IVs are 0.3786, 0.2706 and 0.2105 respectively. It can be concluded that PE is the most important predictor in this study, followed by EE and SI. Thus, the regression equation for three IVs is formulated as below:

$$BI = 0.4255 + 0.4125 PE + 0.2958 EE + 0.2099 SI$$

Table 6: Parameter Estimates of Construct for Use Behaviour

Construct	df	Parameter Estimate	Standardised Estimate	Standard Error	t	Pr > t
Intercept	1	0.4222	0	0.1405	3.01	0.0029
FC	1	0.1446	0.1384	0.0530	2.73	0.0067
CSE	1	0.1283	0.1266	0.0505	2.54	0.0117
BI	1	0.6142	0.6373	0.0463	13.26	<.0001

Table 6 designates the p-value of three IVs (FC, CSE and BI). The p-value for FC is 0.0067, CSE is 0.0117 while BI is less than 0.0001. All the p-values of the IVs are lesser than 0.05 (critical value). Thus, it is concluded that the relationship between the three IVs and teacher's Use Behaviour (DV) is positive and significant. In conclusion, the Multiple Linear Regression equation has been formulated as below:

$$UB = 0.4222 + 0.1446 FC + 0.1283 CSE + 0.6142 BI$$

CONCLUSION AND DISCUSSION

Findings had pointed out the dimensions that strongly influence the use of ICT in education among secondary school teachers in the Malaysian context. These would not only assist researchers and academics but also help government practitioners and school authorities to have an essential knowledge on the factors that successfully lead to the use of ICT in secondary schools. This study revealed that Performance Expectancy (PE) appears to be the most significant predictor on Behavioural Intention of secondary school teachers to use ICT in education. School authorities should look into aspects of the users' expectations that using ICT will help the user to carry out his or her duty in a more effective manner than using the traditional method. If these expectations are met, the efforts such as time and money spent by the teachers in class preparations will be worth doing. Hence, the use of ICT may also contribute into a higher sense of job accomplishment among these teachers.

However, there are some limitations in this study. First, this study is a cross sectional study in which the data collected can only describe current situation, it may not reflect the same outcome in the future. Second, the sample size is small. It only involves the government secondary school teachers in the state of Penang. Thus, the outcome of this study can only represent the view of respondents that may not represent the view of all secondary school teachers in Malaysia. Finally, the data was collected using survey questionnaires. It limits the respondents' thoughts and opinions as the questions are set beforehand. Respondents might have other opinions related to certain questions.

Future research can be carried out to advance the analysis by using the longitudinal study approach. Longitudinal methods may provide a more comprehensive approach to research, that allows a deep understanding of the degree and direction of change over time (Caruana *et al.*, 2015). Besides, future researchers should enlarge their more accurate results can be produced to represent the teachers' opinion. Future research could also conduct a qualitative study to complement the quantitative study in order to get a more sample size to include more Malaysian states. Thus, the quality of collected data will be improved and complete and accurate opinion from the target respondents (Salvador, 2016). This can be done through an interview as well as questionnaire distribution for them to obtain the as the researchers can reach the respondents directly.

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UNDERSTANDING THE DETERMINANTS OF BUSINESS INTELLIGENCE ADOPTION: AN EMPIRICAL STUDY OF IHLs IN MALAYSIA

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Abstract

This study aims to develop an integrated model of BI adoption in the institute of higher learnings in order to investigate determinants influencing BI adoption. The integrated model is based on Tornatzky and Fleisher's Technology- Organization-Environment (TOE) framework. The research model consists of seven determinants categorized in technological context (relative advantage, compatibility, and complexity), organizational context (absorptive capacity, and resource availability), and environmental context (competitive pressure, and vendor selection). In order to validate the research model, a quantitative method is used in this study. Questionnaire survey is conducted with 162 institutes of higher learnings in Malaysia for data gathering to test the relationships among three contexts in the research model by applying structural equation model (SEM). The results show that complexity, absorptive capacity, competitive pressure, and vendor selection have a significant effect on BI adoption among institute of higher learnings in Malaysia. Also, findings and implications in this study provide a contribution to extend understanding of the determinants affecting BI adoption in the institute of higher learnings.

Keywords: Business Intelligence, Institute of Higher Learning, Technology-Organization-Environment Framework, Structural Equation Model.

INTRODUCTION

In today's competitive organization setting, Information Technology (IT) performs a leading position. Adopting appropriate IT innovation can facilitate an organization attains higher enterprise competence, enhance enterprise efficiency, and guarantee that the organization maintains its rough-won competitive advantage (Dawson, Heathcote, & Poole, 2010; Puklavec, Oliveira, & Popovič, 2018). The importance of IT in the institute of higher learnings (IHLs) operation structure has recently been widely acknowledged. Increased IHLs competition for student admission because of globalization in conjunction with recent ICT trends has led to extreme IHL rivalries (Ong, 2016). The need to manage students, human resources, finance and the infrastructure which leads to gather vast amounts of data in IHLs have led to massive pressure on IHL administrators, mainly how they can increase effectiveness and enhance their performance (Wong, Li, & Choi, 2018). Also, to meet the information needs of the significant stakeholders in IHLs, it has been necessary to adopt and implement Information Systems (IS) to provide precise and reliable planning and decision making. Consequently, many IHLs have adopted and implemented some form of IS to increase efficiency and improving performance. Nonetheless, the type of IS embraced by these organizations was generally limited to information compilation and was acknowledged to be limited in terms of its capacity to evaluate vast information and add essential principles for effective decision-making (Chaurasia, Kodwani, Lachhwani, & Ketkar, 2018; Scholtz, Calitz, & Haupt, 2018; Zulkefli et al., 2015).

To tackle these difficulties, many institutions have adopted, implemented, and are presently using Business Intelligence tools to analyze their decision-making information, mostly in developed countries (Olszak, 2016; Richards, Yeoh, Chong, & Popovič, 2014). Consequently, a substantial quantity of study attention has been dedicated to the latest adoption and implementation of BI. While a variety of research has examined the main determinants that affect corporate organizations to adopt BI in distinct sectors, limited studies have stared at it from the administrative view of the IHLs (Owusu, Ghanbari-Baghestan, & Kalantari, 2017; Sujitparapitaya, Shirani, & Roldan, 2012). Besides, most of the studies focused primarily on developed countries with little regard for developing countries. Implicitly, BI adoption was devoted to limited research, especially from a perspective of IHLs, in the context of developing countries. Because the environmental, organizational, and technological factors of developing countries differ widely, the findings of such studies cannot be generalized to developing

countries without empirical support. There are a variety of factors for the analyzes on IHLs in Malaysia.

LITERATURE REVIEW

Business Intelligence

After a long era of investment in establishing a technological innovation that promotes business processes and enhances business structure effectiveness, most organizations have reached the stage where using IT to assist decision-making has become critical (Petrini & Pozzebon, 2009; Richards, Yeoh, Chong, & Popovič, 2017; Wong et al., 2018). Perceived as a reaction to increasing data requirements, BI can maximize the use of data and thus create or enhance competitive advantages (Puklavec et al., 2018). BI distinguishes itself from other IS from the perspective of organizational knowledge generation and the utilitarian view on IS, through the power for initiation and debate of the issue, and through data choice, addressing the diverse information requirements of decision-makers at distinct stages (Popovič, Puklavec, & Oliveira, 2018). Such BI capacities are strategic for organizations, where decision making is seen by strategic management as a critical success factor (Ahmad, 2015; Scholtz et al., 2018).

IT adoption

The field of IT adoption was influenced by various leading theories, frameworks and models in recent years, e.g., the technology acceptance model (F.D. Davis, Bagozzi, & Warshaw, 1989; Fred D. Davis, 1989), the theory of planned behavior (Ajzen, 1991), unified theory of acceptance and use of technology (Venkatesh, Morris, Davis, & Davis, 2003), diffusion of innovations (DOI) (Rogers, 2003), and the technology-organization-environment (TOE) framework (Tornatzky & Fleischer, 1990). Of the above, only the TOE framework and the DOI theory constitute the most prominent adoption models at the organizational level (Oliveira & Martins, 2010) and commonly employed as theoretical foundations for other organizational-level studies and theories (Chong, Ooi, Lin, & Raman, 2009). In discussing a specific IT adoption climate, various adoption models and ideas must be combined to provide a more comprehensive overview of the adoption situation (Oliveira & Martins, 2010). The Iacovou, Benbasat, and Dexter (1995) model, derived from the TOE framework and created in the environment of IT adoption in the organizational level, is a notable instance of upgrading a prominent theoretical basis for a study context.

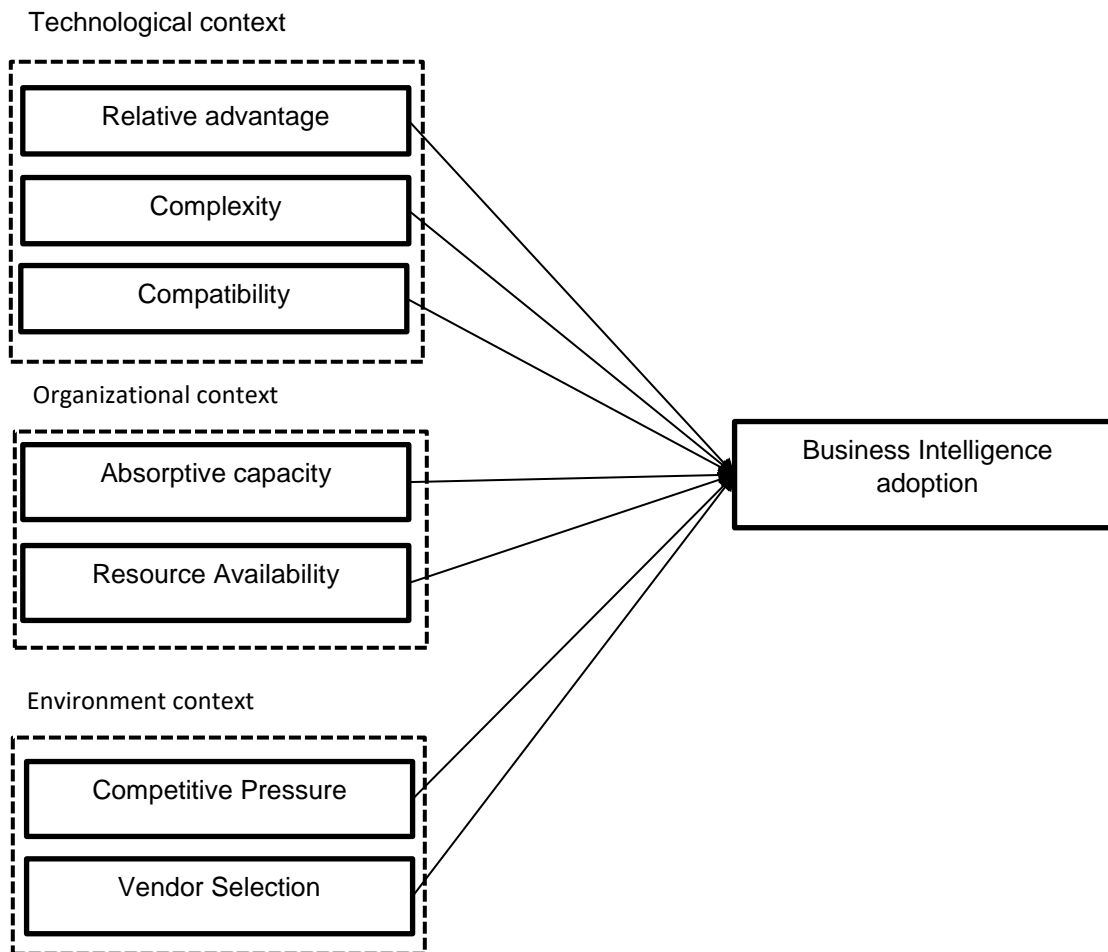
Technology-Organization-Environment (TOE) Framework

The TOE framework covers three contexts that influence the adoption of IT innovation by an organization: technological, organizational, and environmental (Tornatzky & Fleischer, 1990). The technological context is based on the availability and characteristics of the technology. It refers to all technologies that are relevant to the organization (internal or external). Next, the organizational context denotes the organization's characteristics, such as formal and informal linking structures, communication processes, size, and slack. Lastly, the environmental context concerns the possibilities and constraints of technologies, including the features of the sector and the business structure, technology support facilities, government regulation and the efforts of other actors that may affect adoption (Ahmadi, Nilashi, Shahmoradi, & Ibrahim, 2017; Dholakia & Kshetri, 2004; H. F. Lin, 2014; Tornatzky & Fleischer, 1990).

RESEARCH FRAMEWORK

Based on surveying BI studies in a higher learning context, there is still a lack of view on presentation of management. The presentation has considerably determined variables affecting BI adoption. This research is intended to suggest a model describing the determinants. The determinants used in this research were compared through a literature review of IT adoption for IHLs. This suggested model is categorized in the TOE framework by three contexts. Thus, all determinants are shown in three contexts composed of technological, organizational, and environmental.

Figure 1: Proposed Research Framework



Hypothesis development

The relative advantage refers to the extent of new technology innovation perceived benefits as being better than existing ideas or systems (Rogers, 2003). Rogers (2003) further clarified relative advantage articulated benefit in terms of social prestige, economic profitability, and other advantages such as cost reduction, time savings, and improved decision-making depending on the nature of the innovation. The higher the perceived advantages of technology innovation, the more probable its fast adoption rate (Ifinedo, 2011). Many studies reported about the relative advantage of BI to organizations which makes it a potential technology innovation highly favored to be adopted by organizations (Boonsiritomachai, McGrath, & Burgess, 2016; Hocevar & Jaklič, 2010). Previous studies have found the relative advantage of BI were significant, positively related or the best factors of BI adoption and its close associates in different industries (Malladi, 2013; Puklavec, Oliveira, & Popovič, 2017; Ramamurthy, Sen, & Sinha, 2008). However, other studies also found that relative advantage does not play a significant role in some adoption of technologies innovations (Sujitparapitaya et al., 2012; Thiesse, Staake, Schmitt, & Fleisch, 2011).

H1. The relative advantage of BI will have a significant effect on BI adoption.

The complexity refers to the extent of technology innovation is perceived to be difficult to understand or use (Rogers, 2003). Rogers (2003) clarified that while another technology innovation is evident to prospective adopters. Therefore, a technology innovation that more comfortable to learn more quickly adopted than those that require the adopters to empower new skills (Ifinedo,2011). Many researchers have found that complexity is a barrier to IT adoption (Boonsiritomachai et al., 2016; Bradford & Florin, 2003; Hatta, Miskon, & Abdullah, 2017; Sahay & Ranjan, 2008). A study by Ramamurthy et al. (2008) found that lower complexities in technology resulted in higher positive effects on the adoption of data warehousing solutions. Voicu, Zirra, and Ciocirlan (2010) confirmed the BI adoption is highly

complicated because they integrate mathematical functions to predict trends in organizational performance to provide solutions in a variety of situations. Therefore, users with a weak IT and computing knowledge require a stable and straightforward solution that will meet their needs in the shortest time. Nevertheless, other studies have found complexity to be a critical factor in IT adoption (Côte-Real, Ruivo, & Oliveira, 2014; Olexová, 2014; Ramamurthy et al., 2008; Sujitparapitaya et al., 2012; Thiesse et al., 2011).

H2. The complexity of BI will have a significant effect on BI adoption.

The compatibility refers to the extent of technology innovation is perceived to be constant with existing values, past experiences, and needs of possible adopters (Rogers, 2003). Compatibility also means that the idea of any technology innovation that is compatible with the standards, values, and practices of the organization can be adopted more quickly than those that are incompatible. Technology innovations are suggested more readily and easily distributed in cases where technology innovation seems to match the procedures of adopting (Ifinedo, 2011). Prior studies have all confirmed the existence of a positive relationship of compatibility and also as a significant factor of many IT adoption in different industries (Grandon & Pearson, 2004; Moore & Benbasat, 1991; Olexová, 2014; Ramamurthy et al., 2008). Still, other studies did not support this factor as a factor of BI adoption in organizations (Ifinedo, 2011; Thiesse et al., 2011).

H3. The compatibility of BI will have a significant effect on BI adoption.

The absorptive capacity defined as the ability of organization members to use present or pre-existing knowledge (Griffith, Sawyer, & Neale, 2003). This capacity enables organizations to become more aware of the importance of new and external data and therefore, can be implemented to boost the organization's financial advantages. Also, absorption capacity can be used as a predictor of the ability of the organization to IT adoption (Lal, 2007). BI requires its users' knowledge and comprehension. These demands can provide an opportunity for IT development within the organizational context (O'Brien & Kok, 2006). A study by O'Brien and Kok (2006) on telecommunication firms in South Africa and found that many organizations were not utilizing BI to the full potential due to the lack of knowledge, lack of training, and shortage of technical skills.

H4. Organizational absorptive capacity will have a significant effect on BI adoption.

The resource availability of an organization has also identified as a factor in IT adoption (Adler-Milstein & Bates, 2010; Oliveira & Martins, 2010; Soares-Aguiar & Palma-dos-Reis, 2008). Managers will promote IT adoption when capital, facilities, human resources, and organizational time are accessible to embrace (Chong et al., 2009). A study by Scupola (2003) on ERP adoption in Taiwan found that resource unavailability prevented SMEs from investing in ERP. In the BI context, adoption requires typically financial resources and skilled workers due to its complexity and high cost (Sahay & Ranjan, 2008).

H5. Organizational resource availability will have a significant effect on BI adoption.

Competitive pressure tends to stimulate organizations to look for new approaches to raise organizational efficiency and increase productivity, that leads organizations achieving competitive advantage (Themistocleous, Irani, Kuljis, & Love, 2004). Waarts, Van Everdingen, and Van Hilleberg (2002) found that competitors were the critical drivers in IT adoption. This is when competitive pressure significantly impacts on IT adoption (Iacovou et al., 1995; Premkumar & Ramamurthy, 1995; Premkumar, Ramamurthy, & Crum, 1997). For example, in a study by Alshawi, Missi, and Irani (2011) on SMEs found that competitive pressure was a significant influence on organizational CRM adoption. Another study by Hwang, Ku, Yen, and Cheng (2004) on data warehouse adoption found that environmental attributes, including the degree of competitive pressure and vendors selection.

H6. The competitive pressure will have a significant effect on BI adoption.

Vendor selection is another environmental factor affecting the adoption of technology (Chau & Hui, 2001; Ghobakhloo, Arias-Aranda, & Benitez-Amado, 2011; Hwang et al., 2004; H. Lin & Hsu, 2007). According to a study by Seyal, Awais, Shamail, and Abbas (2004), the variable 'vendor selection' can be grouped and measured by quantifying the following items: the vendors' reputation and successful experience possessed; vendors' technical competence with the specific BI system proposed, and the professional competence of the consultant. In general, vendors are responsible for providing software, hardware, user training, and technical support to customers in order to maintain their optimal performance (Moffett & McAdam, 2003). In the study by Hwang et al. (2004), the authors found a relationship between BI vendor selection and technology adoption. As BI is different from other enterprise information technologies, it requires a tailored solution to suit each firm and industry, and not just a total package (Hill & Scott, 2004).

H7. The vendor selection will have a significant effect on BI adoption.

RESEARCH METHODOLOGY

We create a questionnaire based on the suggested research model. The questionnaire includes the following constructs: relative advantage, complexity, compatibility, absorptive capacity, resource availability, competitive pressure, and vendor selection. These constructs were based on current literature (Hameed et al., 2012; Puklavec et al., 2014; Iacovou et al., 1995; Oliveira et al., 2014; Rogers, 1995; Tornatzky and Fleischer, 1990). The measurements applied a five-point Likert scale on an interval level ranging from "strongly disagree" to "strongly agree." Consistently with the respective literature, all constructs used were operationalized as reflective.

These structures were based on the current literature. We used an online survey service which allows online surveys to be created, executed, and briefly analyzed. To obtain a comprehensive list of survey respondents, namely, institutions that qualify for IHLs according to the official country classification, we obtained records from the Malaysia Qualification Register (MQR) with records of institutions entities from the database of the Malaysia Qualification Agency (MQA). The final list provided 769 IHLs from different public and private sectors eligible for study inclusion. The invitation was sent by e-mail to complete the survey. In order to increase the content validity, the participation of the most qualified IT personnel (i.e., CIO, IT Director, Head of IT Department, or IT Manager) was identified from the IHLs directory. Once the participant was identified, the participants were sent an e-mail explaining the nature of the research and requesting additional information about the participant. Everyone provided additional data about his/her position and qualification.

Data were collected in from January to June of 2019. A total of 162 usable responses were obtained, corresponding to a response rate of 21.06 percent. As we targeted all IHLs, the comparatively low response rate was anticipated, i.e., adopters and non-adopters, regardless of how familiar an individual institution was with BI. The IHLs profile of the sample is as follows: 27.8 percent of the respondents come from the private colleges, 24.7 percent from the private universities, 14.2 percent from the polytechnic, 13.0 percent from the public universities, 11.7 percent from the private university colleges, and 8.6 percent from the public colleges. We compare the distribution of early and late participants in the sample using the Kolmogorov-Smirnov test to test for non-response bias (Ryans, 1974). The distributions of samples of the early and late respondents do not differ statistically. (the p-value for all variables was above 0.10). Thus, the absence of non-response bias is confirmed (Ryans, 1974).

Also, we use Harman's single factor test to evaluate common method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). The test showed that the most significant variation in one factor was 32.8 percent, and none of the variables exceeded 50 percent of the threshold value proposed. Accordingly, in the data set, we confirm that there is no significant common method bias.

DATA ANALYSIS

The data analysis is conducted through partial least squares (PLS), a variance-based structural equation modeling technique. PLS is suitable for this research since some items in the data are not

distributed normally ($p < 0.01$ based on the Kolmogorov-Smirnov test); the conceptual model is considered as complex, and it has not been previously tested (Martins, Oliveira, & Popovič, 2014). To test the proposed research model, we use SmartPLS 3 (Ringle, Wende, & Becker, 2015).

Before testing the structural model, we first examine the measurement model in order to assess the construct and indicator reliability, internal consistency, convergent validity, and discriminant validity, all described in the following sections.

Results of measurement models

The measurement model was assessed to determine the validity and reliability of the measurement items by examining the individual loadings, internal composite reliability, and discriminant validity. The evaluation examined through indicator loadings, composite reliability (CR), and average variance extracted (AVE) (Hair, Hult, Ringle, & Sarstedt, 2017). The results presented in Table 1.

Table 1: Reliability and Validity of Constructs

Constructs	Items	Loading	Average Extracted (AVE)	Variance	Composite Reliability (CR)
Relative Advantage	TRA1	0.882	0.607		0.858
	TRA2	0.865			
	TRA3	0.594			
	TRA4	0.740			
Complexity	TC1	0.669	0.692		0.899
	TC2	0.839			
	TC3	0.906			
	TC4	0.892			
Compatibility	TCO1	0.972	0.801		0.922
	TCO2	0.965			
	TCO3	0.726			
Absorptive Capacity	OAC2	0.691	0.616		0.826
	OAC3	0.910			
	OAC4	0.737			
Resource Availability	ORA1	0.969	0.670		0.795
	ORA2	0.633			
Competitive Pressure	ECP1	0.836	0.846		0.956
	ECP2	0.926			
	ECP3	0.966			
	ECP4	0.945			
Vendor selection	EVS2	0.878	0.791		0.919
	EVS3	0.922			
	EVS4	0.866			
Business Intelligence Adoption	BIA1	0.784	0.609		0.857
	BIA2	0.898			
	BIA3	0.523			
	BIA4	0.861			

We assess the construct reliability, tested using the composite reliability (CR) coefficient. As shown in Table 1, all constructs have CR above 0.7, suggesting the constructs are reliable (Chau, 1999).

While for Indicator reliability is assessed using the criterion that the factor loadings should exceed the value of 0.5 (Henseler, Ringle, & Sinkovics, 2009a). As seen in Table 1, all loadings are above 0.5. Further, all items are statistically significant at 0.001. The model thus shows adequate indicator reliability. In order to test convergent validity, we use the average variance extracted (AVE). As shown in Table 2, all constructs show an AVE higher than 0.5, thus meeting the criterion that the AVE should be above 0.5, so that the construct explains more than half the variance of its indicators (Bagozzi & Yi, 1988; Henseler et al., 2009a). To achieve these criteria, we delete items BIA5, TCO4, OAC1, ORA3, ORA4, and EVS1.

Discriminant validity is evaluated based on the Fornell-Larcker criterion, cross-loadings, and Heterotrait-Monotrait Ratio (HTMT). The Fornell-Larcker criterion calls for the square root of the AVE to be higher than the correlations between the latent variables (Fornell & Larcker, 1981). Table 2 shows that the square roots of the AVEs (in bold) are higher than the correlation between each pair of variables. The criterion of cross-loadings suggests that the loading of each factor should be higher than all cross-loadings (Götz et al., 2010). Subsequently, as shown in Table 3, the patterns of the loadings are higher than the cross-loadings. Accordingly, both criteria are fulfilled. Finally, we analyzed the HTMT that is lower than 0.82 (results available by author request) that is lower than the recommended threshold of 0.9 (Henseler, Ringle, & Sarstedt, 2015) (see Table 4).

Table 2: Fornell-Larcker criterion

	BIA	ECP	EVS	OAC	ORA	TC	TCO	TRA
BIA	0.780							
ECP	0.128	0.920						
EVS	0.375	-0.218	0.889					
OAC	-0.457	0.120	-0.132	0.785				
ORA	0.424	0.110	0.424	-0.064	0.818			
TC	-0.409	0.526	-0.333	0.544	0.020	0.832		
TCO	-0.104	0.183	-0.199	0.222	0.413	0.511	0.895	
TRA	-0.409	0.156	-0.283	0.664	0.058	0.602	0.716	0.779

Note: BIA= BI Adoption, TRA= Relative Advantage, TC=Complexity, TCO=Compatibility, OAC=Absorptive Capacity, ORA= Resource Availability, ECP= Competitive Pressure, EVS= Vendor Selection.

Table 3: cross-loadings

	BIA	ECP	EVS	OAC	ORA	TC	TCO	TRA
BIA1	0.772	-0.110	0.300	-0.205	0.293	-0.462	-0.022	-0.238
BIA2	0.897	0.186	0.289	-0.346	0.472	-0.384	-0.180	-0.439
BIA3	0.523	0.097	0.099	-0.205	-0.006	0.050	0.049	-0.096
BIA4	0.868	0.175	0.393	-0.523	0.432	-0.313	-0.069	-0.372
ECP1	0.045	0.839	-0.327	0.016	-0.106	0.517	0.064	0.120
ECP2	0.066	0.929	-0.250	0.038	0.066	0.542	0.103	0.102
ECP3	0.185	0.964	-0.142	-0.052	0.103	0.460	0.226	0.151
ECP4	0.070	0.947	-0.258	0.038	0.073	0.537	0.145	0.182
EVS2	0.313	-0.251	0.877	-0.026	0.378	-0.163	0.049	-0.050
EVS3	0.303	-0.154	0.922	-0.253	0.456	-0.353	-0.158	-0.253
EVS4	0.377	-0.181	0.868	-0.200	0.493	-0.368	-0.374	-0.416
OAC3	-0.419	0.003	-0.184	0.900	-0.173	0.571	0.209	0.650
OAC4	-0.353	-0.024	-0.131	0.855	0.053	0.255	0.327	0.550
ORA1	0.455	0.069	0.502	-0.079	1.000	-0.091	0.325	-0.045

	BIA	ECP	EVS	OAC	ORA	TC	TCO	TRA
TC1	-0.390	0.480	-0.580	0.310	-0.148	0.673	0.594	0.569
TC2	-0.369	0.301	-0.103	0.493	-0.068	0.836	0.167	0.364
TC3	-0.274	0.447	-0.160	0.353	-0.011	0.904	0.404	0.438
TC4	-0.241	0.520	-0.166	0.420	-0.036	0.891	0.532	0.605
TCO1	-0.096	0.213	-0.263	0.223	0.306	0.557	0.972	0.652
TCO2	-0.089	0.120	-0.095	0.368	0.351	0.462	0.967	0.720
TCO3	0.016	0.069	-0.041	0.254	0.384	0.519	0.736	0.416
TRA1	-0.417	0.111	-0.366	0.750	-0.062	0.501	0.567	0.882
TRA2	-0.335	-0.070	-0.145	0.476	0.029	0.323	0.738	0.866
TRA3	-0.063	-0.153	0.247	0.171	0.304	0.280	0.672	0.596
TRA4	-0.292	0.434	-0.246	0.489	-0.149	0.732	0.431	0.738

Note: BIA= BI Adoption, TRA= Relative Advantage, TC=Complexity, TCO=Compatibility, OAC=Absorptive Capacity, ORA= Resource Availability, ECP= Competitive Pressure, EVS= Vendor Selection.

Table 4: Heterotrait-Monotrait Ratio (HTMT)

	BIA	ECP	EVS	OAC	ORA	TC	TCO	TRA
BIA								
ECP	0.198							
EVS	0.427	0.289						
OAC	0.590	0.275	0.231					
ORA	0.461	0.235	0.496	0.252				
TC	0.494	0.613	0.361	0.746	0.361			
TCO	0.128	0.125	0.268	0.318	0.722	0.620		
TO	0.142	0.702	0.601	0.198	0.379	0.494	0.469	
TRA	0.441	0.314	0.405	0.771	0.472	0.703	0.834	
TT	0.416	0.217	0.432	0.315	0.275	0.398	0.602	0.774

Note: BIA= BI Adoption, TRA= Relative Advantage, TC=Complexity, TCO=Compatibility, OAC=Absorptive Capacity, ORA= Resource Availability, ECP= Competitive Pressure, EVS= Vendor Selection.

Since the evaluations of construct reliability, indicator reliability, convergent validity, discriminant validity (reflective measures), content validity, and multicollinearity, are adequate, we confirm the constructs are suitable for testing the conceptual model.

Results of structural models

The predictive capacity of the structural model is evaluated using the level of significance of the path coefficients. The path significance levels are estimated using the bootstrapping method with 5,000 resamples (Chin, 1998; Henseler, Ringle, & Sinkovics, 2009b). The results of the analysis are summarized in Table 5, showing the path coefficients, standard error, t-value, and p-value results.

Table 5: Result of the hypothesis testing

Hypothesis	Relationship	Path coefficient	Std Error	t-value	p-value	Decision
H1	TRA → BIA	0.215	0.222	0.966	0.167	Not supported
H2	TC → BIA	-0.514	0.125	4.099	0.000	Supported**
H3	TCO → BIA	0.266	0.191	1.390	0.083	Not supported
H4	OAC → BIA	-0.294	0.165	1.782	0.038	Supported*

Hypothesis	Relationship	Path coefficient	Std Error	t-value	p-value	Decision
H5	ORA → BIA	0.123	0.098	1.257	0.105	Not supported
H6	ECP → BIA	0.349	0.177	1.974	0.024	Supported*
H7	EVS → BIA	0.202	0.114	1.776	0.038	Supported*

Note 1: *t-value> 1.65, p-value <0.05; ** t-value> 2.33, p-value<0.01

Note 2: BIA= BI Adoption, TRA= Relative Advantage, TC=Complexity, TCO=Compatibility, OAC=Absorptive Capacity, ORA= Resource Availability, ECP= Competitive Pressure, EVS= Vendor Selection.

DISCUSSION

The result of this study indicates that IHLs with technological context (complexity), organizational context (absorptive capacity), and environmental context (competitive pressure and vendor selection) have a significant effect on BI adoption.

Regarding technological context, the results of this research indicate that complexity of BI serves an essential part in the impact of HEI's BI adoption. Several previous studies also support the suggested hypothesis of this research, which noted the adverse effect of the complexity of IT innovation on the organizational IT adoption (Chang, Hung, Yen, & Lee, 2010; Jeon, Han, & Lee, 2006; Sophonthummapharn, 2009). According to Boonsiritomachai et al. (2016), complexity depends on how difficult technology is to be understood and used. Past surveys have shown that IT innovation with substantial complexity requires to improve technical skills and more excellent performance and organizational commitment to improving its likelihood of adoption (Alam & Noor, 2009; Bradford & Florin, 2003). Because BI was the more complex IT development than most other IT innovations, this complexity could present significant problems for HEIs to adopt BI. HEIs generally need to develop technological capabilities and additional competencies within the organization in an attempt to BI adoption (Puklavec et al., 2017; Sahay & Ranjan, 2008). In this study, the importance of BI is indicated through the institutional perception of BI-related to the complexity of adoption, learning difficulty, and resistance to BI adoption. Regarding with organizational context, the finding is at significant with other studies in which the absorptive capacity of organizations was significant on the IT adoption (Cohen & Levinthal, 1990; Khalifa & Davison, 2006; Lal, 2007; Lertwongsatien & Wongpinunwatana, 2003). This outcome is similar to the technology-organization-environment (TOE) theory and previous studies reporting that the absorptive capacity of an organization's members can drive their organizations for IT adoption (Cohen & Levinthal, 1990; Khalifa & Davison, 2006; Lal, 2007; Lertwongsatien & Wongpinunwatana, 2003).

Regarding with environmental context, the result is consistent with the previous studies that found that competitive pressure is a driving force influencing IT adoption (Alshawi et al., 2011; Duan, Deng, & Corbitt, 2012; Ghobakhloo et al., 2011). Recently, with fast IT development, HEIs are facing more difficulties than changing the organizational conduct of many organizations. These economic stresses mean that other HEIs have started to embrace IT development to enhance their organizational efficiency (Puklavec et al., 2017). The HEIs administrator cannot retain competitiveness based on their intuition (Hocevar & Jaklič, 2010; Puklavec et al., 2017). The decision-making method in HEIs has shifted due to new data needs, and decision-making needs to be focused on accurate figures (Wong, 2017). Since the HEI administrator's choices are generally focused on intuition and the policies created are focused on the manager's limited vital abilities, and therefore HEIs often struggle to satisfy and attain their enterprise goals, resulting in their failure of competitiveness (Wong, 2017; Wong et al., 2018). Therefore, HEIs could strive to compete if they do not embrace decision support systems (Ong, 2016).

One factor (Vendor selection) of environmental context is found to be a significant influence to the IT adoption among the SMEs, such as e-commerce (Ghobakhloo et al., 2011), the data warehouse (H. Lin & Hsu, 2007), EDI (Chau & Hui, 2001) and information technologies (Sarosa & Underwood, 2005). It is suggested that IT vendors have an impact on organizational IT adoption. The findings in this study provide support for the technology-organization-environment (TOE) model and are consistent

with previous studies. According to Chau and Hui (2001), SMEs focus on selecting software packages provided by vendors rather than developing information systems in-house, and SMEs rely more on packaged software than large enterprises. Therefore, if organizations decide to outsource the IT adoption, then they must be careful in selecting the vendors (Ghobakhloo et al., 2011). As there are many BI vendors in the business analytics market, the selection of a suitable BI vendor is very significant, as a right vendor can provide not only support ranging from technical assistance to training but also a source of information on the availability of solutions that fit their needs (Ghobakhloo et al., 2011). The professional abilities of the IT vendor can significantly compensate for the lack of internal IT experts and the difficulty in recruiting and retaining IT professionals, as well as affording the costs of providing IT training for employees which is a requirement in SMEs (Sarosa & Underwood, 2005).

CONCLUSION

This research is to construct an integrated model of BI adoption in Malaysian IHLs based on TOE framework for testing the relationships among technological context, organizational context, and environmental context. The research provides theoretical contributions by building knowledge in IT adoption that can identify the significant determinants of BI adoption. Moreover, the results of this research are found that complexity, absorptive capacity, competitive pressure, and vendor selection had a significant effect on BI adoption among IHLs in Malaysia. Also, the research shows that in assessing the model, an initial model of business intelligence adoption in Malaysian IHLs is validated. Finally, this approach shows that BI adoption model applied with TOE framework showing with the significant determinants of complexity, absorptive capacity, competitive pressure, and vendor selection provide more useful knowledge in providing valuable insights to practitioners and researchers.

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PURCHASING BEHAVIOUR OF ENVIRONMENTALLY FRIENDLY PRODUCTS AMONG GENERATION Y IN MALAYSIA

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Abstract

Environmental issues are no longer a blame game. It is “us” who caused these unfavourable circumstances leading to environmental issues such as pollution, global warming, climate change, deforestation and others. It is time for human beings to take action to save the earth from deteriorating. This study served to examine the factors affecting purchasing behaviour of environmentally friendly products among GenY consumers in Malaysia with ‘purchase intention’ as mediator. Target respondents are GenY working adults, residing in Selangor and Kuala Lumpur. A total of 300 questionnaires were collected and data were being analysed using Statistical Package for Social Science (SPSS) version 24.0. The results confirmed the mediating role of purchase intention and indicated that product attributes, attitudes, collectivism and knowledge is positively correlated with purchase behaviour of environmentally friendly products among GenY consumers.

Keywords: Purchase behaviour, environmentally friendly products, consumer behaviour, green products, Generation Y

INTRODUCTION

Environmental issues such as pollution, global warming, climate change and deforestation are not new to people nowadays (Bhate & Lawler, 1997). The rapid economic development is viewed as the main cause of environmental issues and exhaustion of natural resources (Joshi & Rahman, 2016). Punyatoya (2015) identified that consumers are getting aware of deterioration of environmental issues. These had caused consumers to change their behaviours by integrating environmental considerations into their lifestyle and the way they do business. In fact, businesses have also recognized the seriousness of the environmental issues, and starting to become more ecological especially international firms (Thieme et al., 2015; Joshi & Rahman, 2016). They view green developments as market opportunities instead of regulations to be complied (Cheah & Phau, 2011). Going green is able to enhance positive brand image of a particular business (Punyatoya, 2015). When consumers become more environmental conscious, they expect businesses to be the same like them (Rothenberg & Matthews, 2017). However, there are researches showing the potential limits of the environmentally friendly products industry's growth (Borin, Cerf & Krishnan, 2011). For example, some consumers still prefer to purchase regular products with low environmental quality due to lack of knowledge and trust. (Ottman, 1998; D'Souza et al., 2007) and consumers' actions are also inconsistent with their expressions (Thieme et al., 2015). Therefore, the society as a whole need to be aware of the environmental impacts that are related to their consumption patterns and then convert their awareness into actions (Joshi & Rahman, 2016).

This research addresses some research gaps. First of all, most relevant researches are done in the “Euro – American” context and these findings may differ in other country's context due to reasons especially on cultural difference (Bodur & Sarigollu, 2005; Cheah & Phau, 2011). Konuk (2015) and Yadav & Pathak (2016) stated that very limited researches have been done on green purchasing behaviour especially in developing countries, which including Malaysia. On the other hand, the theory of planned behaviour (TPB) which is commonly used in environmental research may be underserving because only the concepts of self – identity and ethical contributions are contributing to the prediction of behavioural intentions (Wang & Wang, 2016). Hence, it is necessary to incorporate some extra

elements into the TPB model so that it can provide a broader perspective of green behaviours, such as the product attribute of environmentally friendly products.

There is a need to study on the purchase behaviour of environmentally friendly products among the GenY consumers in Malaysia due to limited studies in the Malaysian (Konuk, 2015; Yadav & Pathak 2016). Furthermore, the Malaysian government is trying to implement various environmental policies which is believed to be able to raise awareness and educate the people, for instance enforcing a smoking ban at hawker stalls, restaurants and coffee shops nationwide from first of January 2019, as well as charting a zero-waste plan that aims to abolish single-use plastic by year 2030 (The Star, 2018; Zein, 2018). Besides, GenY group, which are born between the 1980s to 2000s are targeted as they are viewed as the potential green consumers and the future market participants (D'Souza, 2004; Cheah & Phau, 2011; Viswanathan & Jain, 2013). In fact, there are statistics which have proven that socio – demographic factors in terms of generation gap could be one of the factors that is considerably influential (Cheah & Phau, 2011). The purpose of doing this research is to understand GenY consumers' purchase behaviour on environmentally friendly products in Malaysia, through identifying the variables that have positive significant relationship with it. These include the consumers' collectivism value, knowledge, attitude, and product attributes, since they are found to be the few factors that supported by the most researches and scholars for these related topics.

LITERATURE REVIEW

Product Attributes

A product can be considered as environmentally sustainable as long it has low environmental impact (Cooper, 2000). Environmental attributes include recyclability, recycled content, fuel efficiency, toxic content reduction, and emission-related performance (Chen, 2001). Besides, environmental product attributes can also be integrated into various design decisions, material selection, package design, as well as energy and solvent usage. Integrating green elements in process improvement and adopting environmental standards are also part of the green innovation process (Xu et al., 2018).

Usually uncomplicated symbols, colour codes, labels with necessary information to detailed environmental information about product ingredients will be shown as environmental information on a product (Borin, Cerf & Krishnan, 2011). "Eco – labelling" and "environmental labelling" are both descriptors of the products information regarding the environmental effects related to the production or use of the products. In the study by Rashid (2009) it showed awareness of eco – label has positive effect on customers' knowledge and then lead to favourable customers' purchasing intention. In addition, Barber (2010) also mentioned that environmental packaging such as the recyclability of the packaging, which is a part of product attributes has become a concern to consumers in making their purchases. Some consumers will consider environmentally friendly products due to their environmental concerns but it is also crucial to determine whether the particular environmentally product can provide values to the consumers (Cheah & Phau, 2011; Punyatoya, 2015). Thus, the first hypothesis is formulated as:

H1: There is a positive relationship between product attributes towards GenY's purchase intention of environmentally friendly products in Malaysia.

Collectivism

Behaviours are influenced by values (McCarty & Shrum 1994). Collectivism is one of the values that are studied most frequently in ecological behaviour and environmentally friendly products (McCarty & Shrum, 1994). Laroche et al. (2001) proposed that collectivism value influences consumer behaviour. Collectivists do not emphasize on personal gratification but stressing in helpfulness, cooperation among people and group's goals considerations (Crane, 2000). Laroche et al. (2001) suggested that collectivists people tend to be friendlier toward the environment. Chan (2001) and Leonidou et al. (2010) also mentioned that collectivism is positively correlated with environmental awareness. Meanwhile, Kim and Choi (2005) as well as Sharma (2010) found that collectivists will often prioritize the goals of the groups, hence they will be more concern of the public wellness including the environment. The collectivists will feel more motivated to protect the environment so

that the others will be able to enjoy the benefits together (Cho et al., 2013). Hence, the following hypothesis is proposed as:

H2: There is a positive relationship between collectivism towards GenY's purchase intention of environmentally friendly products in Malaysia.

Attitudes

Dispoto (1997) defined the environmental attitude as a learned tendency to react constantly to the environment, either with a favourable or unfavourable way. There are many studies stated that attitude has influenced significantly on green purchasing intentions (Morris & Viswanath, 2000; Nysveen et al., 2005). Based on empirical studies in developed economies, the significance of attitudes in predicting ecological behaviours is emphasized (Carrete et al., 2012). When the consumers are closely involved with the environment, they will more likely to consume environmentally friendly products (Paco et al., 2009; Laroche et al., 2001). Moreover, Krarup and Russell (2005) mentioned that strong attitude towards social issues and product category can predict a person's willingness to purchase environmentally friendly products. They can pay more just to support environmentally friendly products (Chan, 2001). In addition, consumers who have positive attitude towards environment are strongly encouraged to consume environmentally friendly products (Carrete et al., 2012; Tanner & Kast, 2003). Balderjahn (1988) has confirmed that consumers' positive attitude towards the environment tend to have more tendency to purchase environmentally friendly products. Thus, the next hypotheses proposed as:

H3: There is a positive relationship between attitudes towards GenY's purchase intention of environmentally friendly products in Malaysia.

Knowledge

Environmental knowledge can be defined as a common knowledge of concepts, facts and relationships regarding the natural environment and its major ecosystems (Frycell & Lo, 2003). Environmental knowledge is crucial to create favourable attitude towards green consumption (Stutzman & Green, 1982). If a consumer has knowledge about the environment, pollution proliferation as well as the impact and causes on the environment, then their awareness will be enhanced and then encourage a positive attitude towards environmentally friendly products (D'Souza et al., 2007). Hence, it shows that consumers who are knowledgeable on environmental issues will tend to purchase green products (D'Souza et al., 2007). Peattie (1995) suggested that purchase behaviour is associated with consumer's knowledge on environmental issues. According to Noor et al. (2012) it is found that environmental knowledge has direct effects towards environmental attitude in Malaysia context. The level of acceptance of environmentally products will increase if the consumers understand on how these products can solve environmental problems (Ottman, 1992). Therefore, the hypothesis developed as:

H4: There is a positive relationship between knowledge towards GenY's purchase intention of environmentally friendly products in Malaysia.

Purchase Intention and Purchase Behaviour

Intentions are important in predicting consumers' actual purchase behaviour (Ko et al., 2013). Green purchase intention simply means the likelihood of purchasing environmentally friendly products, which have lower impact to the environment (Chen & Lee, 2015). According to Chandon et al. (2005) and Ajzen & Fishbein (1975) purchase intention is always been widely used in marketing academic literatures and treated as a highly crucial variable due to its nature as a good proxy of a consumer's actual purchase behaviour. Usually the greater the intention is, then the greater the possibility of a purchase will be made (Berkman & Gilson, 1978). Although there might be possibilities where differences between intentions and behaviour may arise, but there are many studies showing that these two variables are correlated (Ferraz, 2017). By evaluating consumer's purchase intention, businesses can adjust the positioning of their products and services by understanding the market trend better. Chan (2001) mentioned that purchase intention of environmentally friendly products can be measured by three items, which are considering to purchase green products, switch of brands due to environmental reasons, and switching to a greener version of product. Lee et al. (2011) further

added intention in the green context can be defined as the likelihood of purchasing and recommending green products to others.

The Generation Y are individuals born between the 1980 to the 2000 (Viswanathan & Jain, 2013). It is believed that the GenY consumers are particularly different from many aspects comparing to the Baby Boomers or Generation X (Pesquera, 2005). They are described as mature, sophisticated and structured (Syrett & Lammiman, 2003). Most importantly, their way of thinking and attitude are different with the previous generation (Kanchanapibul et al., 2014).

Various studies have shown that GenY consumers are the most environmentally conscious (Vermillion & Peart, 2010). According to Jang et al. (2011) the GenY consumers have the strongest opinions on environmental issues among all generational groups. In addition, they are more supportive to social causes and responsive to socially responsible companies (Furlow, 2011). The GenY is a powerful and large consumer segment (Bhaduri & Ha – Brookshire, 2011). Complementing with significant impact on purchase decisions of their acquaintances (Yoon et al., 2011) and sizeable purchasing power, the GenY group has become the target customer for many businesses (Parment, 2013). Yet, Lu et al., (2013) mentioned that the knowledge of the specific attributes that impact the GenY's intention in purchasing environmentally friendly products is still very limited. Hence, it is very important to investigate the purchase intention among the GenY consumers first then followed by purchase behaviour. Therefore, the hypothesis developed as:

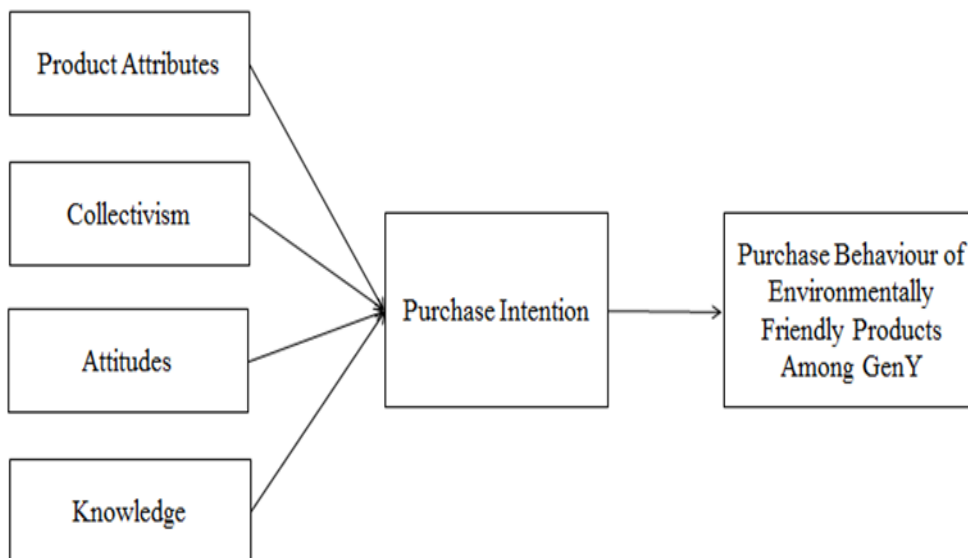
H5: There is a positive relationship between purchase intention and purchase behaviour of environmentally friendly products among GenY in Malaysia

Review of Theoretical Model: Theory of Planned Behaviour (TPB)

The TPB model can be considered as the evolution of the theory of reasoned action (TRA) with the same purpose of examining consumer's behaviour (Ajzen & Fishbein, 1980). TPB explains that individuals will engage in certain behaviour if they think that it will deliver positive results (favourable attitudes), able to gain social approval (subjective norms) and have greater control in performing the behaviour (perceived control). In the environmental context, consumer attitudes simply mean green consumerism (Albayrak et al., 2013). Favourable attitudes, subjective norms and perceived control will influence intention, which is seen to be the only direct psychological factor of a behaviour. Ajzen (1991) also stated that TPB is open to include additional predictors as long they can increase the explained variance in behavioural intentions.

CONCEPTUAL FRAMEWORK

Figure 1: Proposed Conceptual Framework



The independent variables in the proposed framework are product attributes, collectivism, attitudes and knowledge. These four factors are chosen to build the research framework because they are proven to have positive significant relationship by most researches and scholars in general. Besides, purchase intention will be tested as a mediating role as proposed in TPB.

RESEARCH METHODOLOGY

Sampling Design

A total of 300 questionnaires were distributed, and the response rate was 100%. This research is targeted on GenY consumers who are residing in Malaysia. The prerequisite of answering the questionnaire is the GenY individual must have stable income stream, able to make decision on their purchasing behaviour and then justify it. The questionnaires were distributed in Selangor and Kuala Lumpur. However, questionnaires were also distributed through the Internet to reach respondents residing in other states.

Research Procedure

The researcher separated the questionnaire into four parts, which were section A, B, C and D. Section A was asking the respondents' demographic profiles which are gender, age, marital status, education level and personal monthly income. For section B, the questions were related to independent variables (Product Attributes – PA, Collectivism - CV, Attitudes – A, Knowledge - K), while questions in section C were related to mediator (Purchase Intention - PI). Last but not least, questions in section D were related to dependent variable (Purchase Behaviour of Environmentally Friendly Products among GenY - PB).

The measurement items were adapted from previous studies in order to confirm the questionnaire is valid and reliable. "Product attributes" was measured with items conducted by Lee (2009) as well as Pickett – Baker & Ozaki (2008). For "Collectivism", it was adapted from Cheah & Phau (2011) and Yam -Tang & Chan (2008). After that, "Attitudes" were measured according to the modification of items by Chen et al. (2016), whereas "Knowledge" was measured based on the items conducted by Joshi & Rahman (2016) as well as Lee (2017). Items for both "Purchase Intention" and "Purchase Behaviour" were modified from researchers conducted by two groups of researchers, which were Chen et al. (2016) and Lee (2017) as well as Joshi & Rahman (2016) and Kumar & Ghodeswar (2015), respectively.

For Section A which consists of demographic related questions, nominal scale was applied. For Section B, C and D that consist of independent variables, mediator and dependent variables related questions, interval scale was applied. The researcher used "5 – Likert Scale" measurement in the questionnaire. The value 1 and 2 means strongly disagree and disagree respectively, value 3 means neutral, whereas value 4 and 5 means agree and strongly agree respectively.

DATA ANALYSIS

Among the respondents, the gender distribution were 57 % male and 43% female. Most of the respondents were 26 – 30 years old, which consisted of 70%. In terms of marital status, 53.7% of the respondents were single followed by 45.7% married and 0.7% for divorced. 80.3% of the respondents were holding a Bachelor Degree or having an equivalent qualification. Lastly, majority of the respondents consisted of 57.3% were earning RM 3,001 – RM 4,000. Internal Reliability Analysis was conducted. Zikmund (2003) defined reliability as the extent of consistency and the degree of a measurement is free from errors. When the reliability coefficient (Cronbach's Alpha) is closer to the value of 1.0, then the result will be more reliable and vice versa, especially when the results are more than 0.6. All the values of Cronbach's Alpha for each construct is more than 0.8, which means the reliability is good as mentioned by Sekaran (2003). The dependent variable "Purchase Behaviour of Environmentally Friendly Products among GenY" has the highest alpha value of 0.986 with 4 items. The second highest alpha value is 0.974 from the independent variable "Knowledge" measured by 6 items. It is then followed by the mediator "Purchase Intention" with the alpha value of 0.968 measured by 5 items. Next, the independent variable "Collectivism" has the alpha value of 0.946 with 5 items.

Last but not least, it is followed by the independent variables “Attitudes” and “Product Attributes” with the alpha value of 0.885 and 0.862 respectively, both measured by 4 items.

Linear regression analysis was used to examine the linear relationship between the independent variables, mediator and the dependent variable. Both simple linear regression analysis and multiple linear regressions analysis were applied. For simple linear regression analysis, the relationship of the mediator (Purchase Intention) will be tested with the dependent variable (Purchase Behaviour of Environmentally Friendly Products among GenY). For multiple linear regressions analysis, it allows the investigation of the effect between various independent variables (Product Attributes, Collectivism, Attitudes, Knowledge) and a single dependent variable (Purchase Intention, Purchase Behaviour of Environmentally Friendly Products among GenY) simultaneously. It is found that all independent variables have positive relationship with purchase intention and purchase behaviour, and so do with between purchase intention and purchase behaviour. In fact, “Attitudes” has the strongest effect with purchase intention. In this case, all hypotheses (H1, H2, H3, H4, H5) were supported as the whole regression model is significant with $p < 0.05$.

Table 1: The relationship between the Independent Variables and Purchase Intention

Independent variables	Dependent Variable (Purchase Intention)			
	Beta	t	p-value	Outcome
Product Attributes	0.134	2.307	0.022	Supported
Collectivism	0.182	3.377	0.001	Supported
Attitudes	0.662	9.741	0.000	Supported
Knowledge	0.175	4.279	0.000	Supported
R ²			0.731	
F			200.690	

Table 2: The relationship between the Purchase Intention and Purchase Behaviour of Environmentally Friendly Products among GenY

Independent variables	Dependent Variable (Purchase Behaviour of Environmentally Friendly Products among GenY)			
	Beta	t	p-value	Outcome
Product Intention	0.843	35.168	0.000	Supported
R ²			0.806	
F			1236.785	

Mediation analysis was conducted to examine the impact of the mediator on the relationship between one or more independent variables and the dependent variable. In this research, the researcher used a mechanism developed by Hayes (2012) named as PROCESS to perform the mediation analysis. Based on the mediation analysis performed, it is found that every independent variable shows a significant and stronger relationship with purchase intention. In other words, it means that the influence of the mediator (purchase intention) is stronger than the direct influence of the independent variables (product attributes, collectivism, attitudes, knowledge) while the effect values of every indirect effect testing done was within the lower and higher interval.

CONCLUSION AND DISCUSSION

All four independent variables (product attributes, collectivism, attitudes and knowledge) are showing a significant and stronger relationship with purchase intention as a mediator, which is supported by the TPB mentioning that an individual’s behaviour can be predicted from its intention. This research contributes to the body of knowledge since its conceptual model was amended by the TPB model in order to investigate GenY consumers purchase behaviour of environmentally friendly products in Malaysia as a developing country, by providing empirical evidence meanwhile supported by past studies from various researchers. It is a very fresh attempt, as most of such studies are done in developed countries. Besides, this research investigates the impact of several variables on environmentally friendly products’ purchase intention and behaviour which have significant theoretical implications. This research confirms the intention and behaviour to purchase environmentally friendly products (Kumar & Ghodeswar, 2015). To be more precise, the conscious evaluation of individual

portion is related to the factor of attitudes and knowledge, meanwhile the social evaluation is related to the factor of collectivism whereas the environmental evaluation is related to product attributes. Furthermore, this situation explains that the GenY consumers are looking satisfaction in terms of experience, functional and emotional in influencing their purchase intention and ultimately purchase behaviour, reflecting the relevance of environmentally friendly lifestyle with their consumption behaviours.

The result of this research is supported by the social cognitive theory. According to Bandura (1977) the social cognitive theory explains that human behaviour is dynamic, triadic and mutual interactions of individual factors, behaviour and the environment. As humans are both producers and products of the environment, hence a person's behaviour will influence the aspects of the environment they are exposed, and then the environment will change a person's behaviour (Bandura, 1977). In example, the information derived from the environment such as product knowledge is able to affect a purchase decision (Diamantopoulos et al., 2013) or vice versa, such as a collectivist personal behaviour will be influence by other collectivists as well, which is seen as the "environment".

Managerial Implications

Since attitudes were found to have the highest influence on both purchase intention and purchase behaviour of environmentally friendly products, marketers can develop a realistic pricing strategy on environmentally friendly products in order to make these products as a common product. According to Bezawada and Pauwels (2013) lowering prices is effective to encourage consumers to purchase environmentally friendly products. Besides, firms should consistently innovate and produce new environmental friendly products with better functions with lower costs, since the technological advancement is getting faster nowadays. In collectivists' point of view, peer influence is crucial in making purchase decisions as group conformance will give confidence and reinforcement of commitments (Khare, 2015). Therefore, firms are advised to use advertising appeals depicting "peer influence" and "green self – identity" to promote environmentally friendly products. In addition, marketers can share environmental knowledge through promotions, campaigns and other environmental related initiatives in order to create more awareness of the environment among the public. Firms may consider educating them by looking at regional and language diversity as well as problem of illiteracy in rural or semi – urban areas because that is important to convey the message that their contribution to the environment is significant despite it may look small.

Marketers can increase the purchase intention of environmentally friendly products by addressing both individual and environmental product consequences. It is important to emphasize on the product environmental consequences without generalizing its environmental consequences to stimulate consumers' intention. Lastly, marketers can design related strategies in encouraging the consumers to share their consumption experiences with other potential buyers with the purpose of increase the confidence of consumers on purchasing environmentally friendly products. Social media sites and blogs are very useful for this purpose, given the GenY consumers are very technological savvy.

Future Research Directions

Future researchers can develop a similar study by focusing on a particular type of product, as it is believed that different type of environmentally friendly product may lead to different purchasing intention and behaviour. Besides, researchers can conduct similar studies in the context of different countries. Selecting countries which environmental awareness is low provides a comparison between environmentally friendly behaviour of self – proclaimed green and non – green consumers, which will help researchers to understand the reasons of non – green consumers for not buying environmentally friendly products. Cultural differences among various countries from the perspectives of habits, preferences and situational factors can be investigated.

Other potential factors should be explored in future studies, for instance the influence of discounts, advertising as well as effect of demographic variables such as income, gender, education level and marital status can be tested on purchase intention and purchase behaviour. External forces such as environmental laws by the government and international regulations can be examined also (Punyatoya, 2015). Lastly, variables that have been tested before especially "knowledge" and

“attitudes” can be considered to be tested as a moderating role. This enables researchers to explore more explanatory and powerful frameworks.

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EXPLORING MOBILE SOCIAL MEDIA ADVERTISING TOWARDS PURCHASE INTENTION: THE ROLE OF DUCCOFFE'S WEB ADVERTISING MODEL, CREDIBILITY, AND INCENTIVES

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Abstract

With the proliferation of mobile social media, mobile social media advertising (mobile SMA) has become one of the most widely used promotional media among marketers. The purpose of this study is to determine the factors of mobile SMA that might affect consumers' purchase intention. The Web Advertising Model introduced by Ducoffe (1995) has been adopted as the framework for this research. Two more additional variables – credibility and incentives are added into the research framework. There are a total of five variables proposed to determine the purchase intention which consists of informativeness, entertainment and irritation, credibility and incentives. A total of 280 survey questionnaires have been collected from mobile social media users in the 5 major states of Malaysia. Based on the results obtained, it is found that all the variables are significantly affect consumers' purchase intention towards mobile SMA. Incentives have the strongest significance for purchase intention of consumers towards mobile SMA. Therefore, marketers could emphasize on incentives or rewards when developing business strategies to attract consumers to purchase through the platform of mobile SMA.

Keywords: Consumers, Purchase intention, Mobile, Social Media, Advertising, Ducoffe (1995) model, informativeness, entertainment, irritation, credibility, incentives

AN EXPLORATION OF MANAGING PROJECT UNCERTAINTY WITH AGILITY: A PILOT STUDY

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Abstract

In a volatile world characterised by uncertainty, being agile is vital to business survival. According to McKinsey, agility is the ability of an organization to renew itself, adapt, change quickly and succeed in a rapidly changing, turbulent, ambiguous world. The agility practices such as information transparency, fast project life cycle, continuous learning, flexible resources allocation, open working environment, opportunities sensing and seizing, technology integration, hands-on, and role flexibility. To increase the organizational agility, digital technologies have to be integrated with key processes in order to response to the changing business needs. The main objective of this pilot study was to explore the usage of digital technologies in project-based organization when managing different project areas and activities in Malaysian construction industry. There were 32 respondents participated the online survey. The questionnaire survey was divided into two sections. Section A was pertaining to the usage of technology, and section B was about demographic information. The data collected were being analysed using Statistical Package for the Social Sciences (SPSS) software. The result shown that the respondents ranked the usage of digital technologies during the project execution was very differently. Due to the significant variation in the usage of digital technologies, and probably it implied that the organizational agility level in Malaysian construction companies is believed relatively low and immature. Therefore, the study should continue to examine the awareness, dimension and importance of agility characteristics for construction companies in Malaysia.

Keywords: Uncertainty, Agility and Project-Based Organization

INTRODUCTION

In a volatile world characterized by uncertainty, being agile is vital to business survival. No longer can boards rely on the traditional command-and-control style of leadership, with the next generation of workers expecting input on decision-making and valuing purpose in their jobs. At the same time, technological innovation is changing how, when and where we work (Filfilan, 2019). According to McKinsey senior partner Aaron de Smet: "Agility is the ability of an organization to renew itself, adapt, change quickly and succeed in a rapidly changing, turbulent, ambiguous world. Agility is not incompatible with stability, quite the contrary. Agility requires stability for most companies. Traditional hierarchical structures and layers of management can impede progress towards agility that is needed for businesses to evolve. There's no point building a business for the 21st century with a management model stuck in a past age. But change is a slow process. McKinsey's 2017 global survey, How to Create an Agile Organization, shows that out of 2,500 businesses only 4 per cent had completed a company-wide agile transformation. However, three quarters believed organizational agility was a top-three priority and just under 40 per cent were in the midst of an agile transformation (Filfilan, 2019).

Progress in globalization and digitalization has shifted the work environment from relatively stable, transparent and predictable to more instable or inflexible, non-transparent and unpredictable. Constant transformation and uncertainty are the new norm, posing many new challenges to companies. The ability to quickly and flexibly respond to changing business environments and stakeholder or customer expectations in other words, being agile is a decisive factor in determining

an organization's competitiveness and long-term survival (Capgemini, 2017). At its core, the term "agile" refers to an iterative, incremental method of managing design and building activities with an aim of carrying out new products in a highly flexible and interactive manner. In this case "product" might be any kind of deliverable of an agile team such as software, customer product, process improvement, marketing campaign and so on (Capgemini, 2017). It requires capable individuals across different disciplines, openness to constant customer input and a non-hierarchical management form with a mindset that allows for failure.

A milestone in the coining of the term agile was the publication of the "Manifesto for Agile Software Development (Agile Manifesto)"² in 2001, which brought to print certain practices that had already been used in software development for more than a decade. It also has conceptual links to lean techniques including Kaizen and Six Sigma. These principles are management and business strategies which are used by companies for continuous improvement and effective processes while avoiding errors and risks and achieving greater benefits for the company as a whole. The Agile Manifesto is centred on four values: (i) Interaction and individuals are more important than standard procedures and tools; (ii) Delivering a working product is more important than extensive documentation; (iii) Fostering more customer collaboration over relying mainly on contract negotiations; and (iv) Being open to changes instead of needlessly clinging to your initial project plan (Capgemini, 2017). Little research has been carried out into project uncertainty management with agility in the case of Malaysia. Therefore, the main objective of the study was to explore the usage of digital technologies in project-based organization when managing different project areas and activities in Malaysian context. Construction industry was chosen only for this pilot study. Other industries such as information technology, financial, communication, pharmaceutical and so on would be explore in due course if necessary. This paper was organised as follows: Section one introduces the background of agile and agility, and the main objective of this research. Section two describes briefly about uncertainty in project-based organization and agility. Section three covers research processes and the design of questionnaire. Section four presents the results of statistical analysis by using Statistical Package for the Social Sciences (SPSS) software, and lastly Section five draws conclusions and recommendations from the findings.

LITERATURE REVIEW

Understanding of Uncertainty in Project-Based Organization

Researchers understand the project business as a business that provides large-scale capital goods and services and all its elements (Hellstrom, 2005). For example, Artto et al. (1998) define project business as all the activities of the company operated by the project company and deliver the project to the customer. Wikstrom (2005) argues that projects require adaptability and flexibility for various situations needs. Lindkvist (2008) argues that companies that invest in project organizations need to be flexible in their operations, adapting and supporting customer orientation. This is because the project is implemented under ever-changing conditions, even if it is not turbulent, as is the case today.

As Floricel and Miller (2001) point out, the cause of turbulence is the increasing complexity and uncertainty associated with the environment produced by technological change and competition. Therefore, strategic management has become uncertain. Companies need to adapt to change by establishing, developing and reshaping their core competencies by increasing flexibility and toughness (Floricel and Miller, 2001). Regarding project-based companies, Keegan and Turner (2002) convey the daily work of providing customers with bespoke designed products and services. The more complex of project business environment, the more innovation required in order to sustain in the highly competitive market.

Due to the specific conditions and environment of project implementation, the realization of project tasks is affected by uncertainty. The most common interpretation of uncertainty in the literature that still exists in the project is risk or uncertainty caused by untrustworthy information or lack of information (Chapman, 2006); novels, immature or unproven technology (Meijer, Hekkert and Koppenjan, 2007), project complexity (Williams, 2005) and other unpredictable factors. In the project, comprehensive knowledge of project managers and team members can be used to proactively address these risks based on empirical judgment and creativity (Perminova et al., 2008 (a)).

According to the study by Perminova (2011), there were four main uncertainties during project execution. First was technical uncertainty. Certain in-built faults associated with new technologies. Errors in technical solutions that are subject to good operating conditions or operator skill tests. Second was contract uncertainty. The warranty articles do not comply with and violates the general terms and conditions of the contract. This usually results in significant costs during the warranty period. Additional services are left out of the scope of the contract to reduce the price of the quotation. Agreements with sub-suppliers do not comply with the policies, terms and conditions used by the company in its business practices. Third was organization or management uncertainty. There is no proper handing over standard operating procedure during the project implementation phase. Important information in the form of the contracts, contract revisions, meeting memos and other standard documents may not necessarily be accessible for two reasons. First, authorization required to access this data. Second, data is often lost from the internal database. Root-cause analysis of the claim is rarely performed. Therefore, it is often difficult to understand the sources of risks and opportunities. In the long run, it increases the uncertainty and likelihood of unforeseen events. Poor documentation and claims statistics for different project categories. Last was the customer or owner and the operator or user related uncertainty. Lack of understanding of customer or owner and operator capabilities. Lack of communication with customers and their representative or contact. Lack of communication with project stakeholders outside of the customer.

According to Shenhar and Dvir (2007), project uncertainty model has four dimensions where the bases are labelled as novelty, technology, complexity and pace. Novelty base represents the uncertainty of the project's goal, the uncertainty in the market or both. It measures how new the project's product is to customers, users or to the market in general and thus how clear and well defined the initial product requirements are. There are three types of novelty: (i) derivative, (ii) platform and (iii) breakthrough. Understanding novelty helps us make decisions about: (i) the time required to freeze product requirements, (ii) how much (or little) we trust the accuracy and reliability of marketing data. Technology base represents the project's level of technological uncertainty. It is determined by how much new technology is required. There are four types of technology: (i) low-tech, (ii) medium-tech, (iii) high-tech, and (iv) super-high-tech. Understanding technology helps us decide: (i) the time required to freeze design (ii) the intensity of the technical activities, and, (iii) the technical skills required by the project manager and team. Complexity base measures the complexity of the product, the task and the project organization. There are three types of complexity: (i) assembly, (ii) system, and (iii) array or system of systems. Understanding complexity helps us decide: (i) the structure of the project organization, and (ii) how best to manage it such as finding the right level of bureaucracy and formality. Pace base represents the urgency of the project-namely, how much time there is to complete the job. There are four types of pace: (i) regular, (ii) fast or competitive, (iii) time-critical, and (iv) blitz. Understanding pace helps us decide: (i) how to do the planning, (ii) how and when to do reviews, (iii) the most useful degree of autonomy for the project team, and (iv) the most useful level of involvement of top management particularly the most urgent projects (Shenhar and Dvir, 2005).

Understanding of Agility

Doing agile is a series of activities; but being agile is a state of mind, sustainability and cultural adaptability. Agility is one of the strong pillars that drive digital transformation and enable companies to realize their full potential. Organizational agility will create and respond to change. It will consider any changes in the environment and change the way the organization to survive, grow and transform. It will respond to emergent events actively. It will change the entire organization to create an environment like Lego, which you can easily change as needed (Zhu, 2016).

The term "agile" comes from the "Development Software Agile Manifesto", which describes how collaborative work is based on a set of twelve principles that mark the early delivery of business value. The problem is that people do not have an in-depth understanding of the agile principles and concepts behind agile frameworks or tools. Most of the time, they use the word "agile" and they are actually discussing the development of agile software (Zhu, 2016). From "doing agile to being agile" is a difficult road, not a straight path: agile is a direction, not a destination. Transforming into "being agile" means that companies know where they want to move forward, when people start "wearing" agile thinking, finding new ways of working by coping with change and challenges, collaborating,

evaluating, checking and adjusting their journey. You need to do better things, so that agile is not just a way to manage a project, but to develop a principle into a healthy culture to do business more effectively (Zhu, 2016).

Moving from waterfall to agile is not a day's action. This is a journey. As long as the journey reaches where the organization is actually agile, waterfall and agile do co-exist. Some organizations stop moving and stay mixed, some organizations have just returned to the previous state of the waterfall, and only few organizations actually reach the destination of the agile world. Therefore, hybrid organizations are reality. Agile is not just a methodology or a set of practices (Zhu, 2016). Agile is a state of mind. Mindset change is difficult. Agile is first about doing the right things before doing things right: Agile is about people, not tools and processes. Tools and processes will definitely be added on in being agile, but they are not authorized to be flexible. In practice: On the one hand, an organization that focuses on artifacts, indicators, and rituals without understanding its internal causes will not go too far. On the other hand, an aggressive evangelist loses contact with business for his own benefit and does not even succeed in being agile. Agile is really constantly updated. Develop your relationship with values and principles - you will recognize those who don't. Often, agile practices are specific to the entire enterprise or environment. Agile practices make more sense to change ideas and run a set of principles for agile organizations (Zhu, 2016).

Agile transformation is a change in mindset. Agile mindset is about empathy, self-centeredness, and improvement. Agile is not free thinking or unstructured. Agile does not require less discipline, but requires more engineering and management fields, strives to develop transformational plans with initiating change to leadership, training across the organization, and piloting a team. You cannot rely on the radical change in mindset, so you have to start with agile philosophy and some preliminary practices that may reward and strengthen, and the mindset change is harder to change since it involves training, coaching and teaching and important discussion about what is agile among the team, department and company (Zhu, 2016). Agility is not only the ability to create change, but also the ability to adapt to changes. If doing agile is more about managing software projects that are still business plans that achieve business goals, then being agile is to follow a set of agile principles to conduct business, and business agility is a upper-level feature of organizational maturity. There are three "I" priorities between agile principles and leadership principles: interaction, incrementalism, and improvement. Agile principles can also be used by both individual and non-engineering teams. Agile helps achieve strong management through collaboration, transparency and feedback. It is important to realize that moving to agile can require major cultural change that affects the whole business (Zhu, 2016).

Many forward-looking organizations move from doing agile to being agile. Agile scale needs to be done in several ways. This is not just the number of developers. There are also number of teams, number of sites, number of time zones, number of products or value streams the developers work on, and so on. More importantly, how do you follow the principles and practices of agile, build a flexible leadership team or board of directors, and use agile ideas to run the entire organization? Agility of itself is a strategy (Zhu, 2016). Agility is not only the ability to create change, but also the ability to adapt to the changes. Agility is about the connections of points in building a creative work environment and forming a customer-centric organization. Agile is a shift in thinking. Agile uses the wisdom of the masses to increase and drive success. Agile point-connection practices can help anyone or any team to effectively focus and take precise action in the manageable parts of risk, uncertainty, unknowns and fast moving markets (Zhu, 2016).

Agile values and principles are measured by connecting the goals you want to achieve and the most important business goals. You have a set of values and clear principles based on the Agile Manifesto. Values and principles are about your beliefs and thoughts, therefore not suitable for direct measurement. And you will always need to combine these together to get a complete picture of your organization's agility. In agile, measure what you want to achieve, your organization's goals, like time to market, the cycle times to develop features, and whatever you want to see. Some key metrics for agile effectiveness are creating value, timely delivery, teamwork and productivity (Zhu, 2016).

"Being Agile" considers the entire company, not just projects. "Being Agile" is based on systemic principles: the discipline seeing "whole" and helps create rapid business value. "Being Agile" depends on the number of appropriate architectures. "Being Agile" recognizes and promotes the dynamics and characteristics of emerging projects, project teams and the environment. There are known-known, known-unknown, unknown-unknown, whether running an agile project or managing the entire business, does not consider agile to be a rigorous software management or engineering discipline (Zhu, 2016). The goal of agile transformation is as important as a healthy lifestyle goal. Mentality is the key. The goal of agile transformation must being agile, resilient, responsive, innovation, and continuous improvement. Changing the mindset is the most important thing. Without this change, practice will not work. Agile is a mindset based on a set of values and principles. Understanding that for agile to function, it must be a culture. Ultimately, all aspects of a company from strategic planning to most atomic-level tasks must accept agile to achieve optimal results (Zhu, 2016).

RESEARCH METHODOLOGY

Sampling Design and Research Procedure

This research was based on a pilot survey conducted using an online questionnaire. It was achieved through the following processes:

i) Sample Definition. This pilot study aims to explore the usage of digital technologies in project-based organization when managing project activities in Malaysian construction industry. Therefore, the target respondents are included construction practitioners: consultancy, construction business, property development, construction materials manufacturer and merchants, other related parties with certain working experience in the industry, and working in established construction related company, which involve in different types of construction projects such as commercial, industrial, infrastructure, residential, renovation or refurbishment, and others.

ii) Questionnaire Validation. In validating a survey, face validity was established. First was to have experts who understand the topic read through the questionnaire to ensure the question effectively capture the topic under investigation. Second was to have an expert on questionnaire construction to check the survey for common errors like double-barrelled, confusing, or leading questions.

iii) Questionnaire Design. The questionnaire was created by using Google Form. Google Form provides a fast way to create an online survey. Once the online questionnaire is created, invitation sent out by researcher to potential respondents for participation thru email. The survey instrument was divided into two sections. Section A consists of questions about general responses to the usage of digital technologies when managing different areas and activities of construction projects, and section B comprises questions concern to respondents' demographic information.

iv) Data collection. Data were collected from February 2019 to July 2019. The duration was about six months.

v) Data analysis. Analysis of data started in the month of August 2019. Statistical Package for the Social Sciences (SPSS) software was used to check and analyze the data.

RESULTS AND DISCUSSION

The online questionnaire was sent out to construction practitioners through email. Only 32 respondents out of approximately 250 construction practitioners or 12.8% answered the online questionnaire. Fryrear (2015) mentioned that external survey will generally receive a 10% - 15% response rate on average, and Hill (1998) suggested that 10-30 respondents for pilots in survey research will be sufficient for reporting the findings of the study. Table 1 summaries the respondents' demographics.

Table 1: Respondents' Demographics

Descriptions	Number of Respondents	Percentage (%)
Nature of business		
Consultancy	10	31.3
Construction business	9	28.1
Property development	11	34.4
Building materials manufacturer	1	3.1

Building materials merchants	1	3.1
Others	0	0.0
Working experience in construction industry		
Less than 2 years	10	31.3
2 – 5 years	6	18.8
6 – 10 years	4	12.5
1 – 20 years	7	21.9
More than 20 years	5	15.6
Number of company employees		
Less than 5	4	12.5
5 – 29	13	40.6
30 – 75	6	18.8
More than 75	9	28.1
Types of construction project		
Commercial	14	43.8
Industrial	1	3.1
Infrastructure	4	12.5
Residential	9	28.1
Renovation or refurbishment works	4	12.5
Others	0	0.0

Cronbach's Alpha Test

The Cronbach Alpha's test is to measure the reliability with concerned the internal consistency of a test or scale. Next, the internal consistency links to the inter-relatedness of the item in a test by describing the same concept or structure. There was no lower limit to the coefficient of the Cronbach's Alpha. However, Cronbach's Alpha reliability coefficient normally varies between 0 and 1. The closer the coefficient is to 1.0, the more the internal consistency of the items in the rating scale. Moreover, the reliability of the test provides the researcher to reveals the amount of measurement error within the test (Tavakol and Dennick, 2011). Table 2 shows the result of the reliability test on areas and activities of Malaysian construction industry using digital technologies. The Cronbach's Alpha for the "usage of digital technologies for construction projects areas" was 0.948 and "usage of digital technologies for construction projects activities" was 0.983. Obviously both values indicated high reliability of internal consistency. Concisely, the two categories of variables are reliable since all of the Cronbach's Alpha values were more than 0.700.

Table 2: Cronbach's Alpha Test

Usage of digital technologies	Cronbach's alpha	N of Items
Areas of construction projects	0.948	12
Activities of construction projects	0.983	35

Test of Normality

A lot of statistical tests require that the data are normally distributed and therefore checking always required if this assumption is violated. In this case, the null hypothesis is that the data is normally distributed and the alternative hypothesis is that the data is not normally distributed. There were two tests for normality was run. For dataset small than 2000 elements, the Shapiro-Wilk test is used; otherwise, the Kolmogorov-Smirnov test should be used (MST, 2019). For this case, since only have 1504 elements in total, therefore the Shapiro-Wilk test was used. From Table 3 and 4, most of the p-values were less than 0.050 and the null hypothesis was rejected. Hence it concludes that this dataset did not come from a normal distribution.

Table 3: Tests of Normality - Areas of construction projects

Areas of construction projects	Shapiro-Wilk	
	Statistic	Sig.
Contract management	.937	.061
Cost management	.926	.031*

Design management	.904	.008*
Document management	.937	.060
Equipment management	.861	.001*
Materials management	.876	.002*
Performance management	.935	.053
Productivity management	.928	.034*
Quality management	.912	.013*
Safety management	.874	.001*
Schedule management	.893	.004*
Stakeholder management	.923	.026*

Table 4: Tests of Normality - Activities of construction projects

Activities of construction projects	Shapiro-Wilk	
	Statistic	Sig.
Track/update contract-compliance checklist on mobile platform	.893	.004*
Track vendors details on mobile platform	.937	.062
Manage progress claims	.942	.083
Estimate project cost	.942	.086
Update change log on mobile platform	.943	.089
Track change log status on mobile platform	.942	.084
Approve change log	.869	.001*
Update project financial statement	.934	.051
Report materials wastage and excess	.908	.010*
Visualise construction drawings on mobile platform	.937	.061
Update drawing and design information on mobile platform	.911	.012*
Process construction drawings approval on mobile platform	.861	.001*
Share construction information on mobile platform	.933	.046*
Submit Request for Information (RFI) on mobile platform	.892	.004*
Process Request for Information (RFI) on mobile platform	.823	.000*
Search lessons learned information on mobile platform	.919	.020*
Share project information on mobile platform	.918	.018*
Track utilisation of construction equipment and machinery	.893	.004*
Deploy construction equipment and machinery	.891	.004*
Locate materials delivered	.877	.002*
Update site progress at real time	.880	.002*
Update current workforce at real time	.888	.003*
Track crew deployment at real time	.887	.003*
Track on-site productivity	.910	.011*
Inspect compliance of work progress/completed remotely	.923	.026*
Distribute defect lists on mobile platform	.883	.002*
Track rectification works on mobile platform	.916	.016*
Track safety compliance on mobile platform	.843	.000*
Report safety incidents on mobile platform	.909	.011*
Alert workers on safety procedures/precautions	.819	.000*
Issue work instruction on mobile platform	.930	.039*
Reschedule work at real time	.876	.002*
Alert team on critical items	.871	.001*

Inform upcoming key milestones	.898	.006*
Update stakeholders details on mobile platform	.879	.002*

Kendall's Coefficient of Concordance

Kendall's Coefficient of Concordance (sometimes called as Kendall's W) is a non-parametric statistic. It's used to assess agreement between different respondents, and ranges from 0 to 1. Zero is no agreement at all between respondents, while 1 is perfect agreement. The statistic is calculated either on an interval scale or on an ordinal scale (SHT, 2019). In SPSS, Kendall's W Test is done by selecting "Nonparametric Tests" from the analyse menu, and then by clicking on "K Related Samples." After this, select "Test Variables," and then under the option test type, select "Kendall's W" (SS, 2019). From the Table 5, the Kendall's W was 0.249 showed that the respondents' answered the list of usage of digital technologies for construction projects areas were quite differently. Similarly to Table 6, the Kendall's W was 0.118 indicated that very differently when the respondents ranked the list of usage of digital technologies for construction projects activities. Due to the significant variation in the usage of digital technologies, and probably it implied that the organizational agility level in Malaysian construction companies is believed relatively low and immature.

Table 5: Areas of construction projects

N	32
Kendall's W(a)	.249
Chi-Square	87.516
df	11
Asymp. Sig.	.000

Table 6: Activities of construction projects

N	32
Kendall's W(a)	.118
Chi-Square	128.525
df	34
Asymp. Sig.	.000

CONCLUSION

Based on the literature review and the empirical analysis, uncertainty in projects is the individual's lack of knowledge or understanding of the relevant project elements, its environment and their interrelationship, so that no conclusion can be made as to if and how any of these can impact the project success. It is associated with the unforeseen, unplanned events that take place at different stages of the project, which do not necessarily affect projects in a negative way. As for uncertainty, it can be described as a context for risks and opportunities within projects. Uncertainty brings instability, which can be seen as a ground for flexibility. In order for it to be transferred into certainty risks and opportunities that is; it needs to be acted upon. Uncertainty management is defined as a reflective process of considering all of the elements of a current evolving event from different angles to find acceptable actions to resolve the situation for the benefit of the project Perminova (2011). In a volatile world characterised by uncertainty, being agile is vital to business survival. Being agile means constantly being adaptive to change. It constantly raises the question what we can do better in order to succeed. Agility is a company's ability to sense and respond to change adequately and in due time. Agility as a business concept has been used in IT and other development work for over 20 years, but the application of this methodology has been largely limited to the project world. Agility is a key aspect of a healthy operating model, which serves as an organizational blueprint and lays the foundation for the detailed design and implementation of a strategy. Being agile is not really new, but with the new focus on this there are more opportunities to improve operations by constant innovation (Capgemini, 2017).

The main objective of the study was to explore the usage of digital technologies in project-based organization when managing different project areas and activities in Malaysian context. Construction industry was chosen only for this pilot study. The result shown that the respondents ranked the usage of digital technologies during the project execution was very differently because according to the study by Capgemini (2017), technology was one of the main four dimensions, namely culture, leadership and structure of the organization to increase agility of the company. Due to the significant variation in the usage of digital technologies, and probably it implied that the organizational agility level in Malaysian construction companies is believed relatively low and immature. Therefore, the study should continue to examine the awareness, dimension and importance of agility characteristics for construction companies in Malaysia.

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FACTORS AFFECTING BEHAVIORAL INTENTION TO USE BIKE-SHARING SYSTEM: A STUDY ON INTEGRATION OF SELF-EFFICACY THEORY AND THEORY OF PLANNED BEHAVIOUR IN MALAYSIA

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Abstract

This study is to investigate the factors affecting the behavioural intention (BI) to use bike-sharing system in Malaysia. The study adapted Theory of Planned Behaviour (TPB), integrated with Self-Efficacy (SE) construct as proposed conceptual framework. The conceptual framework independent constructs consist of attitude (AT), subjective norms (SN), perceived behavioural control (PBC) and Self-Efficacy (SE) that lead to dependent construct of behavioural intention (BI). Cross section study will be conducted. Survey questionnaire will be the primary data collection instrument. Mobile users are the targeted population as bike-sharing system users need mobile devices. Survey questionnaire will be distributed among mobile users in Malaysia. Expected finding is provide factors that affects behaviour intention to use bike-sharing system in Malaysia. The findings can assist bike-sharing service provider to focus on the determinants that will affect users to use bike-sharing system.

Keywords: Theory of Planned Behaviour (TPB), Behavioural intention, Self-Efficacy, Bike-Sharing System, mobile user

INTRODUCTION

Bike-sharing system is public transportation to an individual for short distance traveling from one point to another point (Sotero, 2015). An individual can self-collect and return the bike from the bike stations; thus, it would make an individual more convenient in self travelling (Guo, Zhou, Wu & Li, 2017). Bike-sharing system can promote the transport to increase the local connectivity among the community and university (Gardner & Gaegauf, 2014). According to Australia's state government, there are a lot of benefits for regular biking such as to stronger bones, more flexible joints, reduce the stress and anxiety levels, and better cardiovascular fitness (Martucci, 2018). Malaysia has introduced the bike-sharing system which is oBike in Bandar Sungai Long in 2017 (Foo, 2017). However, during the trial stage of the adoption of oBike, it did not get active support from the public even though the system already implemented for three months. The public may lack of awareness on the adoption of oBike (Foo, 2017). Moreover, there is also lacking of cycling culture in Malaysia. It is supported by Ng (2017) who indicated that much of the citizens in Kuala Lumpur are prefer to use a car than a bike.

Majority of the earlier research on bike-sharing system has been conducted in the West, examining the relationship among TPB and factors influencing behaviors on bike-sharing system in countries such as Taiwan and China, while little research has been conducted in Malaysia. The previous study on bike-sharing system adoption has been conducted in China by Yu, Yi, Feng and Liu (2018). This study investigated the adoption of bike-sharing system through by integrating Technology Acceptance Model (TAM) and TPB. According to this study, both TAM and TPB alone can contribute to better clarification and behavioral prediction. Therefore, the study integrated both theories together to explore the motivator of commercial bike-sharing system. However, their studies were mainly targeted on students in university, which affect the generalisation of the findings. Most of the researchers used TPB in their studies especially in product adoption, services adoption or any newly introduced technology advancement. Example of the past studies which used TPB are public transport (Kamarudin, Kanesh, Basil, Joewono & Ahmad, 2015), e-learning (Manal, Fong, Wun & Sultan Alshourah, 2015), tourism (Mamdouh & Ziadat, 2015) and healthcare awareness (Yap,

Othman & Wee, 2013). They applied TPB to determine and explain the behavior of targeted respondents toward their research topics.

Prati et al. (2018) study on university students cyclist's behavior and acceptance toward bike safety system. However, sample size in this study was small (n=25) and lack of sample variability (gender and social status). This study can be improvised by inclusion of multiple control variables such as the cycling skill and self-efficacy in order to determine the behavior of the cyclist toward bike safety system. Therefore, there is imperativeness to conduct research to determine factors affecting mobile users' behavioral intention to use Malaysia bike-sharing system. Our research focuses on integration of self-efficacy construct with TPB to measure the behavioral intention among the population of Malaysia mobile users on bike sharing system usage. Hence, the objective of this paper is to investigate whether integration of self-efficacy construct with TPB can influence behavioural intention (BI) to use bike-sharing system in Malaysia. Our study can contribute to future researches in determining the behavioral intention by applying TPB and Self-Efficacy Theory (ST) on using of Malaysia bike-sharing system. Moreover, there is lacking of past research apply the integration of the ST with the TPB in bike-sharing system area, it may assist researcher to better understanding on this construct and its effect in behavioral intention of using bike-sharing system. Thus, our finding may provides evidence to support integration of ST with TPB has impact on the behavioral of using bike-sharing system. Moreover, our study can provide meaningful information to bike-sharing services providers such as Public Bike Share, LinkBike, Mobike, and others. These providers can obtain further confirmation on factors affecting behavioral intention on bike-sharing system in Malaysia. This study enhances bike-sharing providers' knowledge on how TPB's constructs and ST would affect an individual to use the bike-sharing system. The study will enable bike-sharing providers to improve their services provided in order to increase the bike-sharing usage. Our findings can also assist marketer to develop effective marketing strategies which can attract more people to have intention to use bike-sharing system.

LITERATURE REVIEW

Theory of Planned Behavior (TPB)

TPB's father was Ajzen, and it was introduced in 1991 (Ajzen, 1991). TPB describes an individual's behavioral intention can be impacted by AT, SN and PBC (Zemore & Ajzen, 2014). TPB has three dimensions which are SN, AT, and PBC. TPB was born from the Theory of Reasoned Action (TRA), TRA assumed one's behavior can be controlled under their desires. (Ajzen, 2002). TRA model has determinants of attitude, subjective norm that use to forecast the intention of individual behavior in performing a task (Chen, 2016b). However, TRA has the limitation to deal with individual's deliberate intention control over behavior, therefore, TRA added-in perceived behavioral control as construct and formally became TPB (Ajzen, 1991; Ajzen, 2002). Milković and Štambuk (2015) applied TPB in their studies to examine intention of students in Zagreb to use the bicycle. TPB used to study in which related parties' intention to use public transportation (Sik Sumaedi et al., 2016; Kamarudin Ambak et al., 2015).

Self-Efficacy Theory (ST)

Albert Bandura implemented ST (Bandura, 1977; Bandura & Adams, 1977). Self-efficacy describes individual belief and ability are the keys to decide whether task or desired outcome can be achieved (Yesilyurt, Ulas and Akan, 2016). Perceived self-efficacy can influence an individual's activities and behavioral in term of effort, timeline for an individual uphold to the barrier faced and experiences (Bandura & Adams, 1977). Individual's belief about their efficacy can be derived from four sources of influence which are enactive mastery, experience, verbal discussion and emotional arousal (Bandura, 1977; Howardson & Behrend, 2015). It had been used as a construct in Social Cognitive Model (Sutton, 2001). Several studies examined how self-efficacy influence towards behavior and skills. Huang, Dannenberg, Haaland, and Mendoza (2018) study how child, parent self-efficacy and parent outcome expectations toward the bicycle commuting to school. Self-efficacy also used to study how it influences knowledge sharing (Endres, Endres, Chowhury & Intakhab Alam, 2007).

Attitudes (AT) And Behavioral Intention (BI)

AT is an individual's behavioral beliefs to adopt it depend upon good or bad perception in performing the behavior (Willis, Manaugh & El-Geneidy, 2015).

Maichum, Parichatnon and Peng (2016) implemented an extended model of TPB to investigate the purchasing of green products' intention. 483 respondents as the targeted sample sizes and Thailand as the targeted place. The findings showed that consumers' SN, PBC and AT have significantly positive effects on buying the green products' intention. One of prior research adapt TPB model to examine individual's attitude for cycling can make mind changes on cycle commuting barriers (Souza, Sanches & Ferreira, 2014). Data collection focused in a public college in Brazilian medium-sized city. Outcomes showed that the respondents have an open attitude to cycling with four characteristics, which were advantages on environmental, health, economy and feeling of independence. Since the majority studies showed AT has significant positive associations with the BI. Thus, proposition development between the AT and BI was developed.

P1: AT is positively affected by BI to use bike-sharing system.

Subjective Norms (SN) And Behavioral Intention (BI)

SN include individual viewpoint concerning the opinions and behavior of people around such as family, friends, colleagues and community (Kaplan, Manca, Nielsen & Prato; Lois, Moriano & Rondinella, 2015). The more positive of SN, the greater intention to act towards the behavior (Souza, Sanches & Ferreira, 2014). Huang and Su (2018) examined the relationship between the factors influencing the users' BI to reuse or recommend Kaohsiung's public bicycle in the future. There were three main dimensions of TPB which involves AT, PBC, and SN constructs. Main target respondents were public users in Kaohsiung City. They used 412 valid copies of survey questionnaire. The results showed that the public bicycles user's SN will positively and significantly affect BI. Past studies of Chen (2016a) examined the public respondents' feedback on green loyalty affected by "perceived pleasure to use", "perceived green usefulness", "perceived green value", PBC and SN on using the bike system. 261 valid questionnaires collected from the subscribers and non-users at YouBike sites. The results showed SN has greater impact on public bikes users' green loyalty.

Yu, Yi, Feng and Liu (2018) examined the antecedents and theorize specific relationships of commercial bike-sharing system usage. 286 online and offline surveys were assigned to students in Southern China's university and high-tech park's workers near the university. The results showed that SN does not have significant effect on users' intention on bike-sharing system. The respondents' family members, friends and colleagues would not exert social pressure as they inexperience about the commercial bike-sharing system during an introduction phase. Therefore, SN might not be significant predictor for system usage. Although the result of Yu, Yi, Feng and Liu (2018) showed SN and BI have no relationship. But majority studies shown significant positive relationship among SN and BI. An individual has potential to influence the respondents' perception through encourage or support in adopting of bike-sharing system, and it will directly influence the respondents' BI. Therefore, proposition development among the SN and BI was developed.

P2: SN is positively affected by BI to use bike-sharing system.

Perceived Behavioral Control (PBC) And Behavioral Intention (BI)

PBC might be defined as beliefs of individual skills in performing a behavior. Besides, it can be described as the ability of an individual in performing a behavior depend on two situations. These two situations are the ability of individual to control over the behavior and the ability of individual's confident level in performing a behavior or not (Bandura, 1997). Igbino and Osuchukwu (2018) examined the knowledge sharing intention among library personnel in Nigeria through PBC. 100 structured questionnaires were distributed to the person registered under "Library Association, Anambra State Chapter in Nigeria". There was significance positive relationship had shown between PBC and knowledge sharing intention. Bird, Panter, Baker, Jones and Ogilvie (2018) explored the predictor on walking and cycling behavior vary since extended TPB model is employed. The studied was targeted 3516 participants through the baseline surveys with first year and second year follow-

up data from iConnect study. PBC had significantly positive affected to participants' intention in walking and cycling for transport and recreation.

Yang and Wang (2015) explored the United States of consumers' online video sharing AT, intent, and behavior through the integrated of theory such as TPB, Technology Acceptance Model (TAM) and Viral Marketing Model (VMM). 3000 survey questionnaires had been distributed to U.S. college students and U.S. general consumer. PBC had no significant relationship to students' intention to pass along number of online videos to their friends. Although the result of Yang and Wang (2015) showed PBC had no significant relationship with BI. But majority results disclosed these two variables had significant positive relationship. Thus, PBC and BI were developed as proposition development.

P3: PBC is positively affected by BI to use bike-sharing system.

Self- Efficacy (SE) And Behavioral Intention (BI)

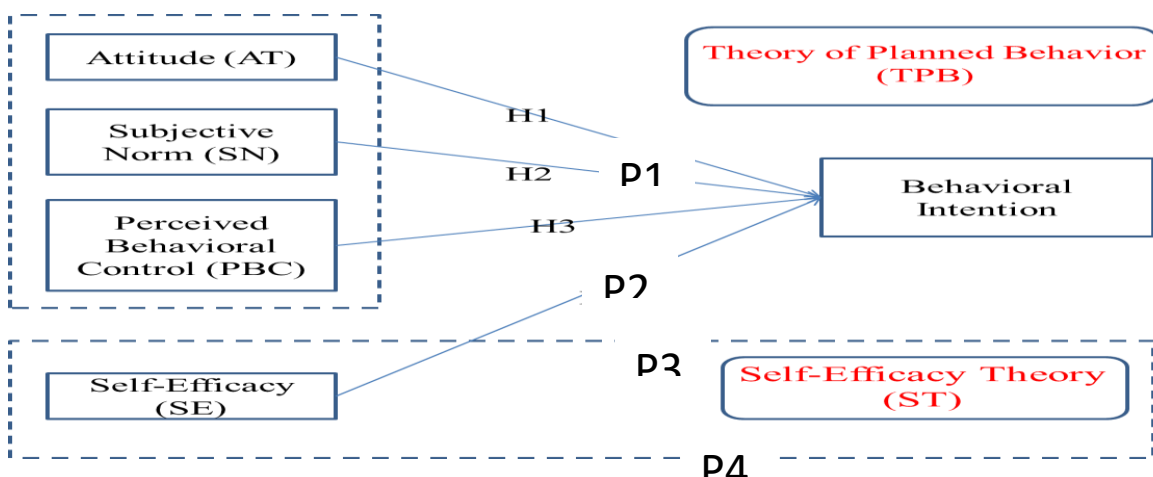
SE defined as an individual's capabilities to organize and execute an action in achieving the performance in order to make an individual's judgment. The outcome expectation refers to an individual's able to analyze consequences of a given behavior through different types of motivations which encourage changes in human behaviors (Bandura, 1986). Intention users will use the bike-sharing system rely on their judgments to judge whether they have capabilities to do so. Gravel, Gauvin, Fuller and Drouin (2016) explored the SE and intention through public bike-sharing program. 3978 data were collected through random digit dialing telephone survey from adults' citizen in Island of Montréal. They were being aged 18 years or above with having a landline telephone. SE had significantly and positively affected by citizens' intention to involve in the public bicycle share program.

Wang (2016) explored that there are effects on employees' knowledge sharing behaviors from social cognitive factors and self-motivations. 294 surveys were assigned to the industry's professionals for answering questionnaires given. There was indicated the significant positive correlated among SE and industry professionals' knowledge sharing behavior. Lois, Moriano and Rondinella (2015) explored attitude, subjective norms, self-efficacy and social recognition are influential towards the intention on bicycle commuting. 595 non-cycle respondents in the Spanish city of Victoria-Gasteiz received telephone survey. The result of the survey shown SE had significantly and positively affected the BI on bicycle commuting. Since the majority of the studies shown there were significant positive relationship among SE and BI, the proposition development between SE and BI was established.

P4: SE is positively affected by BI to use bike-sharing system.

PROPOSED CONCEPTUAL FRAMEWORK

Figure 1: Proposed Conceptual Framework



Source: Adapted from a part of TPB (Ajzen, 1991) and Self-Efficacy Theory (Bandura, 1977; Bandura & Adams, 1977).

Figure 1 shows the conceptual model in our studies. AT, SN, PBC, and SE are the independent constructs from the model. And BI is the dependent construct. All the independent constructs proposed to have the positive relationship with dependent construct.

PROPOSITION DEVELOPMENT

The propositions were established in our study after reviewing the past empirical study.

Table 1: Proposition Development

P1	AT is positively affected by BI to use bike-sharing system.
P2	SN is positively affected by BI to use bike-sharing system.
P3	PBC is positively affected by BI to use bike-sharing system.
P4	SE is positively affected by BI to use bike-sharing system.

Source: Developed for research

Research Design

The survey methodology has been used for this study because the survey can act as a valid and reliable research instrument. The question is standardized for all respondents. The questions can be replicated for reliability and consistent (Dillman et al., 2014). By using the questionnaires, it can be cost-effective since it might collect huge quantities of data from respondents in lower costs and shorter time (Dillman et al., 2014). Furthermore, respondents' information might be effectively and efficiently changed to quantitative data which enable statistical analysis of these feedbacks. (McLeod, 2018). This study used the cross-sectional approach because data collection will be carried out once to make a conclusion for the population at the specified time period. The cross-sectional approach is recommended to be used to describe the behavior of an individual. It is also supported by the researcher Nizamuddin, Leong, Choo and Sim (2016); Fishman (2016); Gravel, Gauvin, Fuller and Drouin (2016). Mobile users are targeted because mobile and data are the prerequisite to unlock the bike-sharing system. This is because they equipped knowledge of adopting e-wallet (Islam et al., 2013). By using the mobile phone, the mobile users enable scan QR code which provided on bike-sharing system after paid the one-time refundable deposit through the e-wallet (Augustin, 2017).

Primary data collection method will be conducted in our research. Survey questionnaires are self-administered. It is the cost effective way and involve a larger number of people in the study. It is frequently used by the researcher in the studied area of behavioral (Mathers et al., 2009). We have preferred in selecting sampling instead of census for our research. This is because census is targeted on whole population which is difficult to collect information. Thus, sampling techniques is affordable and time saving. It is an economical method as compared to the census. It is more appropriate for the population of homogeneous nature (Surbhi, 2016). Therefore, we target on the mobile users in Kuala Lumpur, Selangor, Johor, and Perak since the total mobile user penetration rate for these four states are more than 50% through the statistic on Malaysian Communications and Multimedia Commission (MCMC 2018). All population's sampling frame have listed on the mobile users in these four states, however unavailability of the actual population by cities within these states; therefore, the non-probability sampling method is adopted. A questionnaire was used to reach a diversified sample using purposive sampling method. It is also known as the judgmental sampling method. It refers to the use of the judgment to target on the respondent who possesses a smartphone with connectivity to the wireless telecommunication network either Wi-Fi or 4G. They are able to assist the researcher to provide the relevant information (Ilker, Sulaiman & Rukayya, 2015).

Our target community's sample size is 420. 420 survey questionnaires will be distributed among the mobile user in four states proportionally as per mobile users population. Sekaran and Bougie (2016) provided a table that exhibits sample size for given population analysis (refer to Appendix 1). Since our population of the mobile users has exceeded the highest population of 1,000,000 (refer to Appendix 2), Moreover, the sample size will be apportioning into Selangor, Johor, Kuala Lumpur and Perak based on the percentage of the penetration rate of the mobile users as given in Table 2. 420 survey questionnaires will be circulated via self-administered to mobile users who have intention to use the bike-sharing system in Selangor (Klang Valley: Sunway Pyramid and 1 Utama Shopping

Centre), Johor (Puteri Harbour and Bandar Johor Bahru), Kuala Lumpur (Berjaya Times Square, Pavilion, Mytown Shopping Centre) and Perak (Kampar). Klang Valley and Kuala Lumpur are chosen as a large urban population in Malaysia which around 7.2 million in 2016 (Leong, 2017).

Table 2: Mobile users' penetration rate in 2018Q1 (%)

State	Population (%)	Questionnaires Distributed
Johor	14.75583	113
Perak	7.371898	56
Selangor	21.83955	166
WP Kuala Lumpur	11.14564	85
Total	55.112918	420

Source: MCMC 2018

A few professional respondents will be invited to conduct the pre-test in order to test questions' conformity and relevance in our questionnaire (Sekaran & Bougie, 2016). Before questionnaire distribution, pilot test will be conducted to examine the normality and reliability of the questionnaires. 30 questionnaires will be distributed based on the apportionment in percentage of the penetration rate of mobile users in each state selected such as Perak, Johor, Selangor and Kuala Lumpur.

CONCLUSION

The aim of this study is to investigate whether integration of self-efficacy construct with TPB can influence BI to use bike-sharing system in Malaysia. The proposed conceptual framework of this research seeks to test whether ST can be integrated with TPB to study BI. Further research should be conducted to examine the proposed conceptual framework. Survey questionnaire is used as instrument to gather primary data from mobile user. The data analysis and results obtained will be reported after data collection is completed. The expected findings can assist researchers and bike-sharing service provider to focus on the factors that will affect the mobile user's intention to use bike-sharing system in Malaysia.

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Appendix 2: Mobile User Penetration Rate

2018Q1	'000	%
Johor	5151.2	14.75583
Kedah	1833.2	5.251278
Kelantan	1430.6	4.098013
Melaka	963	2.758554
Negeri Sembilan	1440.9	4.127518
Pahang	1445.4	4.140408
Perak	2573.5	7.371898
Perlis	216.1	0.619027
Pulau Pinang	2227.6	6.381053
Sabah	2548.9	7.30143
Sarawak	2431.7	6.965706
Selangor	7624.1	21.83955
Terengganu	1000.1	2.864828
WP Kuala Lumpur	3890.9	11.14564
WP Labuan	65.8	0.188487
WP Putrajaya	66.6	0.190778
Total	34909.6	100

Source: Malaysian Communications and Multimedia Commission (2018)

PRESENT-DAY EVALUATION ON ADOPTING GREEN PRACTICES AMONG MALAYSIA'S LOGISTICS BUSINESS ORGANIZATIONS

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Abstract

There is a similar relationship between green performance index (GPI) and logistics performance index (LPI) in evaluating a nation green practices with logistics efficiency. These indexes indicate that developed nations in Europe Union and Singapore have attained better performance in logistics efficiency with the ability to fortified environmental protection. Their logistics business organizations (LBOs) have implemented measures embracing environmental protection. Malaysia's ranking in both indexes decreasing indicating a lack of environmental fortification and logistics efficiency. This research intended to evaluate on present-day approach for Malaysia's LBOs adopting green practices. In the adoption of green practices reflected with concept Institutional isomorphism. The concept of institutional isomorphism for a business organizational occurs with conditions such as 1) coercive isomorphism that stems from political influence and the problem of legitimacy; 2) mimetic isomorphism resulting from standard responses to uncertainty; and 3) normative isomorphism, associated with professionalization. Malaysia's LBOs required to observe the concept of mimetic and normative isomorphism in their effort to participate in environmental fortification. This paper intended to evaluate present-day Malaysia's LBOs adoption of green practices focuses on organizational development consisting of green motivation, green training, green appraisal, and top management support. Based on survey 164 respondents from Malaysia LBOs using statistical evaluation with SmartPLS found that green motivation and top management support have a significant relationship with the adoption of green practices. The study results indicated that green practices among Malaysia's LBOs are at the infancy stage. Recommendation for improvement is suggested for adopting green practices for the LBOs.

Keywords: Logistics Business Organizations, Adopt Green Practices, Institutional Theory

INTRODUCTION

The logistics industry is one of the contributors to pollutions even though it is a crucial element that enables economic progress. According to the World Bank's Logistics Performance Index (LPI) Report, most of the nations in the Southeast Asia Region (ASEAN) ranked between 25th to 150th from the year 2007 to 2016. The LPI reported that Singapore is the only nation in this region that ranked 1st to 5th for the same year. A huge gap existed between Singapore and the rest of ASEAN nations in logistics service efficiency. The Environmental Performance Index (EPI) released by Yale University from the year 2008 to 2016 indicated that Singapore is experiencing a better environment with fewer pollutions compared to ASEAN neighbors. This city nation is leading in EPI at 14th rank while Malaysia, Thailand, and Indonesia situated between 60th and 130th place. Singaporean experiencing cleaner air quality compared to those living in Kuala Lumpur, Bangkok and Jakarta. Air pollution in major ASEAN cities contributed to motorize vehicle carbon emission. In Malaysia, 70 percent of air pollution originating from the motor vehicle as reported by Statistics, 2016.

The logistics and transport business organizations are service-based focuses on the delivery of goods through the utilization of transportation. These modes of transportation could either be land, water or air-based. In supporting international trade, the movement of goods requires a combination of two or three moves of transportation in connecting cargo origin and its destination. These logistics business

organizations (LBO) utilize machinery in the form of transportation modes, technology especially the latest information technology and importantly the development of human capital. The number of people employed in this industry is very less compared to the manufacturing industry. European LBOs such as DB Schenker, DHL Global, Scan Global, and SKF Logistics have been recognized as a global logistics provider. These companies obtain sustainable financial profits while attempt to protect the environment. Green logistics practices become a credo in these business organization operations. Malaysia's logistics and transport business organizations are less emphasis on green practices while focusing on business growth and profits.

However, the LBOS in Singapore and Germany focus on human capital development. Companies like Germany's DHL lauded their success of "go green" philosophy and occupy large profits from logistics activities. Top management initiates the "go green" enforcement policy that every DHL personnel must observe and comply with. Employees at DHL been trained to value environmental fortification. Green practices in daily logistics operations at DHL have become good practices or work norms among its employees (Ferguson, 2011). Singapore-based LBOs invest in their human capital as well as green initiatives. Malaysia-based LBOs have been found to least prioritize on human capital development in constructing talent on green practices. It has resulted in logistics inefficiency as well as depletion of natural environments. The 2018 LPI report indicates Malaysia's position at 41st while Thailand was at 32nd, Indonesia on 46th, and Singapore on 7th. This report indicates Malaysia's LPI is dropping severely from 29th in the year 2016 to 41st in 2018. This condition has triggered this research to identify inter-relationship between green logistics ability to enhance logistics performance as well as protecting the environment.

This paper intended to evaluate green logistic adoption among LBOs Malaysia. Malaysian LBOs focuses on customer satisfaction and is profit-oriented while neglecting the environmental fortification approach in their operational activities. Malaysian based LBOs need to re-evaluate their operational activity and take initiatives to implement green logistics approach. The underlying theory employed in this study is based on institutional theory (DiMaggio & Powell, 1991). This study observes the adoption of green practices in the context of coercive, mimetic and normative approaches. The previous study has indicated institutional isomorphism can change an organization to adopt green practices (Jasmi & Fernando, 2018).

LITERATURE REVIEW

In gaining a better understanding of the concept of adopting green practices among logistics and transport business organization requires an understanding of the concept of green logistics and green supply chain management. There are 100 articles from the peer-review journal, paper in conferences in management, human resources, organizational performance, and professional institution report has been studied. These published articles were from the year 1997 to 2017 which concentration focuses on from the year 2015 to 2017. Previous literature suggested that green logistics is the ability of a business organization to deliver its products or services in an environmentally friendly manner along with economic efficiency. It is an approach taking consideration of the environment and social factors in business operations (Chhabra, et al., 2017). The concept of green logistics management is a multi-discipline comprises of economic, environmental and social elements to minimize the harmful effect on the environment (El-Barishy, et al., 2013). Table 1 identified previous literature on terms.

It is found previous literature discusses on adoption of green practices need top management support (Luthra, at al., 2016; Tomšič, et al., 2016; Muduli, at al., 2013); imposed good environmental practices such as ISO 14001 certification (Oksana, 2016; Kuan, at al., 2016; Khairani, et al., 2012); implementation of technology in operation (Fernando, et al., 2016; Zahari & Thurusamy, 2012) and firm willingness to adopt green operational practices (Chhabra, at al., 2017). There are scant literature relates to logistics and transport business organizations adopting green practices. There is one literature on China's LBOs on which observes an infusion of green practices in its business operations. There is minimal literature discusses Malaysia's context. Most of the literature focuses on the protection of the natural environment but there is less focuses on the service industry as such

developing a logistics or transport business organization that able to implement green practices specifically green logistics practices.

Institutional Theory

The concept of developing a business organizational adopting green practices reflected in the concept of Institutional isomorphism. DiMaggio & Powell (1983) suggested a concept of institutional isomorphism for a business organizational occurs with conditions such as 1) coercive isomorphism that stems from political influence and the problem of legitimacy; 2) mimetic isomorphism resulting from standard responses to uncertainty; and 3) normative isomorphism, associated with professionalization. Development of green adoption when inexistence of external pressure from federal and local authorities shown less coercive isomorphism. It is best to describe the adoption of green practices in the mimetic isomorphism approach. A business organization could seek to copy a successful business framework by others that lead in the industry and try to emulate it into their internal activity.

Apart from mimetic isomorphism, a normative isomorphism approach arises when norms and rules of society and professional bodies influence the practice of the organization. Professionalism among employees in the LBOs can shape their business organization. These employees indoctrinate with logistics theory as well as ground practices able to institutionalize green practices. The experiences of specialized education and professional networks could shape the institutionalization process of the PMS in the organization (M. A. Norhayati & A. K. Siti Nabiha, 2009). This professionalization was seen as a collective struggle of members of an occupation to define the conditions and methods of their works, to control "the production of the producers" and establish a cognitive base and legitimation for their occupational autonomy (DiMaggio & Powell, 1983). The mimetic approach is being reflected whereby business organization duplicating another organization's procedures believing such an approach provides advantages to their operations. In the context of LBOs, in general, duplicating their rival in green practices reflecting the best approach in their effort to protect the natural environment. It is a cooperative initiative to achieve cost efficiency and environmentally friendly operations (Jasmi & Fernando, 2018).

Table 1: Discussion on the subject matters.

Subject	Author(s)	Discussion
Adopt Green Logistics Practices	Chhabra, Garg & Singh (2017)	Green logistics is the ability of the organization to deliver products and services in an environmentally friendly way along with economic efficiency.
	El-Berishy, N., Rügge, I., & Scholz-Reiter, B., (2013)	Green logistics practices is a multifaceted discipline that encompasses economic, environmental and social elements. It focuses on actions to minimize harmful effects on the environment and introduce tools to improve society and its economic level.
	Beškovnik, & Twrdy, (2012),	Green logistics management is an extended management practice of entire logistics with special focus to run an environmentally sustainable supply chain.
Green Motivation	Nejati, Rabiei & Jabbour (2017)	Managers should develop a wide range of green rewarding initiatives that are both financial and non-financials. A reward system recognizing green initiatives and practices could be designed and implemented in the organization to encourage participation for employees in green initiatives.
	Shoeb, 2015	The main objectives of green motivation are to make the employees aware of intricacies if environmental management i.e. what action is needed, how it functions and how it helps the environment.

	Olavarrieta & Ellinger (1997)	Logistics managers should help and encourage their personnel to evaluate both the internal logistics process and external needs.
Green Training	Muduli, Govindan, Barve, Kannan & Yong (2013),	Environmental training programs can promote good environmental practices by increasing employee motivation towards environmental improvements, encouraging innovation with company integration, and enhancing collaboration.
	Zahari & Thurasamy (2012)	Companies who are leaders in environmental innovation and performance widely practices environmental training and incentive programs to involve their employees in continuous innovation.
	Khurshid & Darzi (2016)	The training program can be used to generate awareness related to crucial issues like waste management, energy conservation, and reducing carbon footprint.
Green Appraisal	Shoeb (2015)	HR staff should modify the performance appraisal rating system to include dimensions for rating people on teamwork, coloration, diversity, innovation environmental stewardship.
	Khurshid & Darzi (2016)	Developing environmentally friendly organization with a green approach in training, performance appraisal and performance management with a reward program.
	Fong, Ooi, Tan, Lee & Chong (2011)	A performance appraisal system can serve as a positive pressure on employees to thrive better performance, through better knowledge sharing among themselves.
Top Management Support	Tomšič, Markič, & Bojnec (2016)	Leadership is about inspiring people to achieve results, creating a vision, developing and adopt values, and mobilizing people to create value for the organization.
	Muduli, Govindan, Barve, Kannan & Yong (2013),	Top management sets the goals and provides necessary support such as the allocation of resources, while employees play an important role in implementing the strategy.
	Luthra, Garg & Haleem, (2016);	Leadership from environmentally motivated top management contributes to the increase of environmental practices and perception of environmental risk involved may contribute to changes in adopting environmental practices.

Adoption of Green Practices

Previous literature has discussed the approach for the organization to adopt green practices in their operations. Green practices are a means for the business organization to contribute to enhancing environmental fortification with many approaches identified to influence green practices (Ho, et. al., 2014). Green practices are seen as environmentally conscious practices for a sustainable business organization. Implementing green practices often perceived as offering competitive advantages within an industry. Business organization adopting green practices believes such an approach contributes to improving the natural environment and maintaining sustainable economic development (Jasmi & Fernando, 2018). These green practices approach consist of green packaging, conducting repair activity, implementing ISO14001, and observe green human resources management (Chhabra, et al., 2014; Kuan, et al., 2016; Tomšič, et al., 2016; Jabbour & Jabbour, 2016). Green practices for logistics business organization could be implemented with green logistics approach (Khairani, et al., 2012; Oksana, 2014) and observing green supply chain management (Islam, et al., 2017; Govindan, et al., 2017).

Green Motivation

Professionalism is one approach to adopting green practices. Business organizations required professionals to motivate their organizations to adopt green practices. According to DiMaggio &

Powell, (1983), motivating professionalism able to change business organization. It is a normative isomorphism approach in business transformation. Hiring these professionals with green knowledge to encourage members in business organizations to adopt green practices. Motivational and recognition must be developed to ensure green practices by members of the organization been appreciated. The institutional theory assumes that the internal constituents do play an important role in determining the organizational structure and it's required to adopt certain practices (Norhayati & Siti-Nabiha, 2009).

Motivations and rewards perhaps are the practices that could be adopted by business organizations. Such motivational practices were able to enhance business organizations to adopt green practices and transform their business by becoming environmentally friendly. Motivations such as compensation programs promote green behavior among organizational employees and motivate them to come with green ideas concerning their jobs. This motivation can be part of organizational work systems (Sardana, 2018). Therefore, the hypothesis suggested:

H1: There is a significant relationship between green motivation and adopting green logistics practices by Malaysia's logistics business organization.

Green Training

Members of the logistics business organization that attended green training shall understand the importance of environmental fortification. Empowerment to these organizational members for adopting green practices in their work will become an organizational culture. When green training reflected into practice, innovation on environmental fortification arise and logistics organization become environmentally friendly. As mentioned earlier that logistics business organization members consist of participation of professional employees in its daily operations, the normative isomorphism perspective shall be observed. Normative professionalism relied on two antecedents – firstly, formal education and legitimation inherent from the credential educational institution and secondly, through inter-organizational networking (Yang, 2018). According to Pham, et al., (2019), green training is considered comprising environmental policies providing employees with knowledge, skills, and attitudes to achieve the organization's environmental goals. Implementing training for environmental activities encourages behavior in green practices. These training could either obtained before these professionals jointed the logistics business organization or during their employment with the organization. A hypothesis suggested:

H2: There is a significant relationship between green training and adopting green logistics practices by Malaysia's logistics business organization.

Green Appraisal

The business organization required to align its human resources appraisal with values on the protection of the environment. When managers known that their annual performance relates to green practices, they began to adopt green practices in their daily activities. Once a business organization aligns performance appraisal with green practices resulted in an environmentally friendly business organization (Shoeb, 2015). Appraisal of green practices increases competencies in terms of skills, knowledge, and attitudes among managers on their task and organizational process (Choi, et al., 2013). In achieving environmental fortification as well as encouraging a business organization to adopt green practices suggested green appraisal been implanted. The appraisal is a performance management approach. Green performance management provides a system guiding organizational employees aligning their behavior with an organization's green goals. It aims to appraise employees' environmental performance leading to engagement towards green activities. Such an appraisal approach to employees expected in helping employees obtain clear information on the environmental protection approach (Pham, et al., 2019). As green appraisal is deemed relevant for the organization to adopt green practices, a hypothesis suggested:

H3: There is a significant relationship between green appraisal and adopting green logistics practices by Malaysia's logistics business organization.

Top Management Support

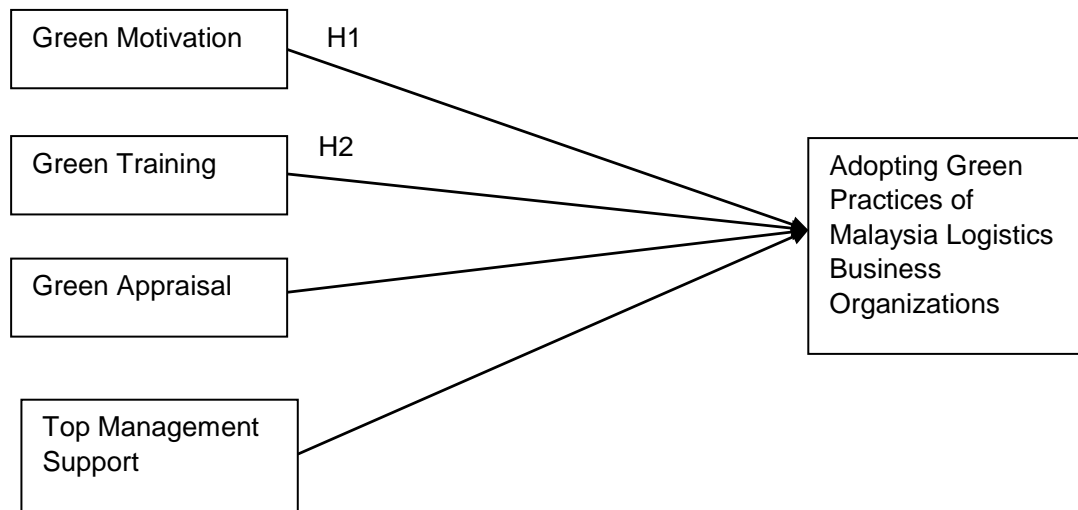
Top management support has a positive impact on the business organization to adopt green practices (Ferguson, 2011). They are the "key" motivates organization member to adopt green practices. One research conducted in Slovenian found top management positively influence an organization to adopt green practices (Tomšič, et al., 2016). Similarly in the context of the Indian mining industry to adopt green practices also found that top management has high influences on an organization to adopt green practices (Muduli, et al., 2013). Green practices able to be adopted when top management inserts pressure among their members and mimics their internal culture with an excellent organization in their field. Implementing such an approach enable the competitiveness of its business organization (DiMaggio & Powell, 1983). The internal culture of a business organization started with a vision from top management and their commitment is crucial for environmental fortification. The internal policy is a mechanism to motivate internal members to adopt green practices (Fernando, et al., 2016). Top management personnel can create normative values based on their previous formal education to develop legitimacy within their organizational structure due to certain conduct and job-related requirements. Their perception concerning green procedures, structure, and policies regard them as normatively legitimized. These top management decisions are made based on their similar state of mind (Jasmi & Fernando, 2018). The hypothesis suggested:

H4: There is a significant relationship between green motivation and adopting green logistics practices by Malaysia's logistics business organization

CONCEPTUAL FRAMEWORK

The study intended to evaluate the relationship between green motivation, green training, green appraisal and top management support with adopting green practices. This study proposed research framework as shown in Figure 1.

Figure 1: Research Framework



METHODOLOGY

The study was to evaluate the current condition of Malaysia's logistics business organization required feedback from managers who currently work in the logistics and transport business organization. As this research intends to evaluate level adoption of green practices among logistics and transport managers, the data of their business organization was based on Malaysia Logistics Directory 2017/

published by Marshall Cavendish (Malaysia). There are thirteen sections inside this directory with eleven sections provide a list of logistics and transport business organizations. It has been identified there is 2,507 business organization listed in this directory. It is only 2,173 business organization which registered after elimination of multiplication or redundancies. Therefore, the population of this research was consisting of 2,173 business organizations listed in the directory. Determine the minimum sample size should be 10 times the maximum number of arrowheads pointing to latent variables. This rule offer guideline for minimum sample size requirement. It is suggested to utilize statistical program by Faul, et al., (2007) to analyze statistical test (Hair, et al., 2017). It concluded from sample size to be at 131 respondents by utilizing suggestions from Faul, et al., (2007) from the population of 2,173 business organization. The data collection method begins with a self-administrated questionnaire developed based on the work of the past researcher. The questions for green motivation adapted from the work of Tomšič, et al., (2015) consisting of four questions. There were ten questions related to green training adapted from Teixeira, et al., (2016) and four questions on green training adapted from Nejati, et al., (2017). The work of Saks (2006) consisting of seven questions has been adapted to evaluate top management support. The questionnaire used 5 points Likert scale as a measurement.

The data collection was conducted from November 2018 until March 2019 by approaching managers in the logistics business organization through an online approach. 951 respondents have been approached with 388 respondents agreed to participate. After receiving consent from 388 managers, an online link has been forwarded to them providing access to an online questionnaire. The researcher collected 180 online feedback but respond from 16 respondents have been eliminated as these respondents were not involved in logistics and transport activities. In this research, 164 respondents' feedback has been analyzed further with partial least square (PLS) structural equation modeling (SEM) statistical method. A PLS-SEM is selected because it is suitable for determining hypothesis testing and prediction rather than theory testing (Hair, et al., 2013). The data from 164 respondents were analyzed. Table 2 indicate demographic or respondents.

DATA ANALYSIS

Determine the reliability of the research model has been measured with Internal Consistency Reliability and Indicator Reliability. The Internal Consistency Reliability which measures consistency results across the same test and Indicator Reliability represents how much variation in items been explained in a construct (Hair, et al., 2017). Table 3 below indicates Convergent validity and internal consistency reliability from this research. The Fornell – Lacker provide the information that the square roots of each construct's AVE should be greater than its highest correlation with other constructs. Logic on this concept that a construct shares more variance with its associated indicators rather than any other construct (Hair, et al., 2017). Therefore, Table 4 indicates the value of the construct has obtained the requirement for Fornell – Lacker criterion. It could be concluded that both assessments provide a valid reason whereby the model has to meet the discriminant validity requirement (Fornell & Lacker, 1981). Assessing the heterotrait-monotrait ratio (HTMT) in evaluating true correlations between two constructs when value close to one indicates a lack of discriminant validity (Henseler et. Al., 2015). Table 5 shown the HTMT value meets discriminant validity criteria as the value of two constructs are far from one.

Table 2: Sample demographic summary

Demographic	Category	Frequency
Gender	Male	133
	Female	31
Race	Malay	78
	Chinese	56
	Indian	26
	Others	4
	Education	SPM/O-Level

	STPM/A-Level	2
	Diploma	29
	Bachelor	90
	Master	37
	Doctoral	1
Nature of Logistics Organization	Ocean Transport	29
	Freight Forwarder	46
	Maritime Port	18
	Air Transport	8
	Airport	3
	Trucking	22
	Courier Service	7
	Movers	1
	Railways	7
	Warehouse	20
	Others	3
Years with Green Practices	Less than 5 years	93
	5-10 years	38
	11-15 years	14
	16-20 years	9
	More than 20 years	10

Table 3: Convergent validity and internal consistency reliability (factor weighting scheme; mean 0, Var 1: Max. Iteration 300)

Latent variable	Items	Indicator reliability	Cronbach's Alpha	AVE	Composite reliability
Green Motivation	GM1	0.862	0.853	0.696	0.901
	GM2	0.860			
	GM3	0.857			
	GM4	0.753			
Green Training	GT1	0.640	0.868	0.519	0.890
	GT4	0.726			
	GT5	0.717			
	GT6	0.610			
	GT7	0.694			
	GT8	0.754			
	GT9	0.794			
	GT10	0.805			
Green Appraisal	GA1	0.875	0.868	0.714	0.908
	GA2	0.910			
	GA3	0.878			
	GA4	0.702			
Top Management Support	TMS2	0.683	0.873	0.606	0.859
	TMS3	0.834			
	TMS4	0.849			
	TMS5	0.736			
Adapt Green Practices	AGP1	0.755	0.869	0.615	0.904
	AGP2	0.878			
	AGP3	0.858			
	AGP4	0.841			
	AGP5	0.527			
	AGP6	0.794			

Note: Some items were removed because they have an indicator of reliability <0.5. All items have an indicator of reliability >0.5, AVE >0.5 and CR >0.7

Table 4: Discriminant Validity (Fornell-Lacker Criterion)

	AGP	GA	GM	GT	TMS
AGP	0.784				
GA	0.406	0.845			
GM	0.607	0.541	0.834		
GT	0.506	0.608	0.697	0.720	
TMS	0.475	0.290	0.523	0.487	0.779

Table 5: Discriminant Validity (HTMT)

	AGP	GA	GM	GT	TMS
AGP					
GA	0.443				
GM	0.702	0.604			
GT	0.548	0.696	0.785		
TMS	0.551	0.322	0.632	0.547	

The results are shown in Figure 2 that green motivation has a significant relationship to the adaptation of green practices ($b=0.403$, $p \leq 0.000$). Top management support also has a significant relationship with the adoption of green practices ($b=0.203$, $p \leq 0.000$). These results supported H1 and H4 that green motivation and top management support have a significant relationship with the adoption of green practices. The relationship between green training ($b=0.076$; $p \leq 0.476$) is not significant with the adoption of green practices. Whereas, there is no significant relationship between green assessment ($b=0.083$; $p \leq 0.345$) to the adoption of green practices. Table 6 summaries the path coefficient analysis.

Table 6: Path coefficient analysis

	AGP	P Values
GM	0.403	0.000
GT	0.076	0.476
GA	0.083	0.345
TMS	0.203	0.000

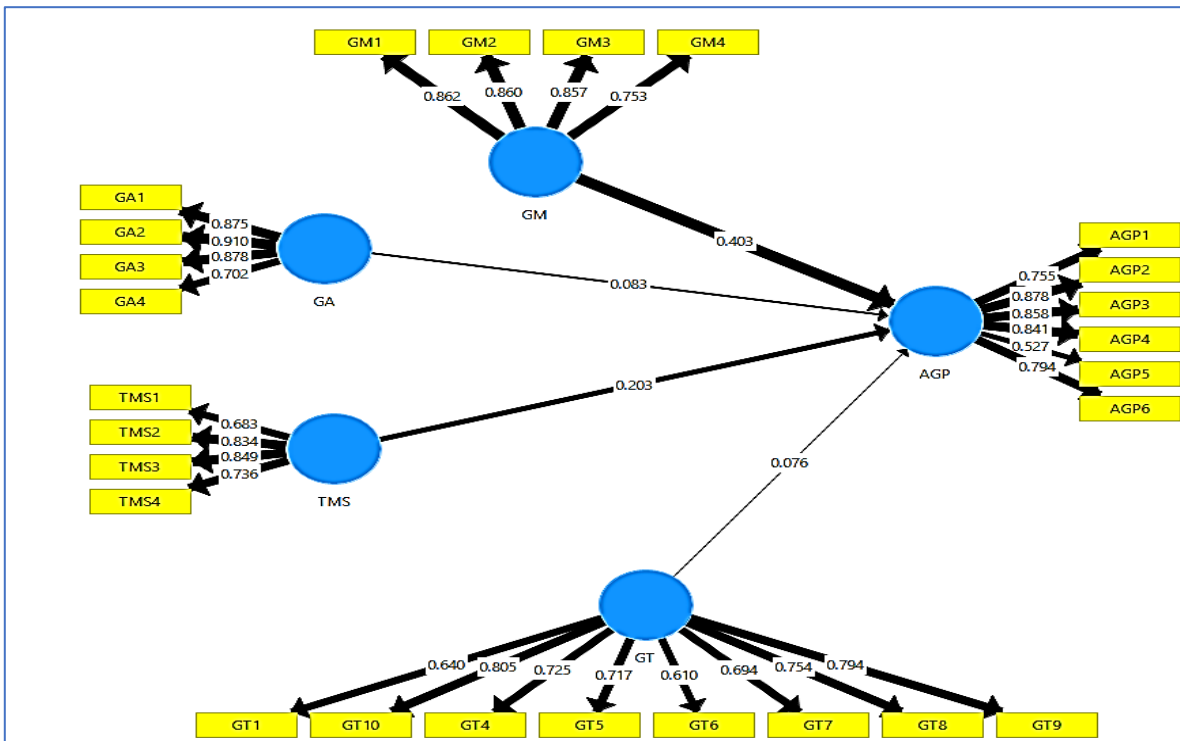


Figure 2: Path diagram model with SmartPLS v.3.2.8

Assessing the significance of the relationship, Hair et al., (2017) suggested using the bootstrapping approach enabling evaluation of path coefficient. The bootstrapping approach examines the actual values from repeated samples in evaluating the assessment of validation. The approach does not rely on a statistical assumption about population but it makes an assessment based on sample data to assess statistical significance (Hair, et al., 2010). Table 7 summaries the bootstrapping analysis conducted indicating a significant relation between green motivation and top management support to the adoption of green practices.

Table 7: Bootstrapping analysis

	Sample Mean	STDEV	T Statistics	P Values
GM -> AGP	0.396	0.090	4.504	0.000
GT -> AGP	0.082	0.106	0.713	0.476
GA -> AGP	0.088	0.088	0.946	0.345
TMS -> AGP	0.211	0.063	3.233	0.000

Assessing the model path coefficient and bootstrapping have found a significant relationship between green motivation and top management support with the adoption of green practices among Malaysia's logistics business organization. While there is an insignificant relationship between green training and green assessment with the adaptation of green practices. It is confirming that H1 and H4 are supported.

CONCLUSION AND DISCUSSION

The present-day situation with Malaysia's logistics and transport business organization indicates green practices still quite low. The federal government has released five years master plan for the logistics industry from 2015 to 2020 suggested green practices to focus from the year 2020 onwards. This situation leads to slower adoption of green practices. Therefore, this research intended to study among Malaysia's LBOs on the adoption of green practices with green assessment, green motivation, green training, and top management support. This research found that present-day adoption in green

practices has a significant relationship with green motivation and top management support. As green practices considered at the infant stage, the logistics business organization motivated their organizational members on green practices. The positive morality of members of LBOs to adopt green practices required psychological factors. Their members are educated that could change their behavior. Initiatives to improve logistics and transport through green practices required elements such as employment rotation, job enhancement, recognition and awards (Muduli, et al., 2013).

In less coercive enforcement from authorities, these LBOs have implemented green practices in their organization. Existence in green motivation has significantly helped in developing green practices. Success in an organization to adopt green practices when it's able to motivate its members towards green practices. It is a green human resources approach in controlling behavior that leads to organization members in participating in green innovations (Sardana, 2018). This study has found that top management support has a significant relationship with the adoption of green practices. Initiative for LBOs to embrace green practices starts with top management environmental friendly or pro-environment policies. The leading role of top management is the most important. They are responsible for promoting Green Practices for their members. They are considered as pivotal to their business organizations, visibility and high-level powers are being followed by other organizational members, in enhancing business organization to adopt green practices (Govindan, et al 2016; Masri & Jaaron, 2017).

This study supported findings from Jasmi and Fernando (2018) that top management was key drivers to implement green practices. They hold decision-making power and its' implies their direction to steer business organization direction. Their finding ware based on feedback from 144 LBOs in Malaysia. It confirming top management in logistics business organization have conclusive influence in adopting green practices. Therefore, a focus in developing initiative encouraging top management encouraging them to implement green practices should be considered. The current green practices among logistics business organization required further improvement in green training in their organization. It is' seen green training not been conducted by the logistics business organization to its employees. One suggestion that training activities such as workshops and providing an opportunity to employees involved in green activities need to be implemented. This training allows employees to participate in environmental problem-solving faces by their organization (Pham, et al., 2019). Such an approach enhances LBOs to adopt green practices and contribute to environmental fortification.

The findings of this research shed light on how authorities or the federal government should develop a logistics and traffic organization policy on the adoption of green practices. Policy related to green practices as well as green logistics practices as proposed in Malaysia's Logistics and Trade Master plan (2015 – 2020) needs to be introduced and implemented. It found that there should be green practices between the logistics and transport organization of Malaysia voluntarily. However, the element of measurement, evaluation, and recognition of green practices by these logistics and transport organizations is essential. The federal government must consider a policy that enables such business organizations to commit themselves to environmental protection practices. There are several limitations in this study required further consideration. Although the study has shown a significant relationship between top management support and green motivation to logistics business organization in adopting green practices. Future research could consider an approach to consider green recruitment in this study model for LBOs to adopt green practices. Implementing green recruitment by employing employees with knowledge of green practices able to enhance LBOs in adopting green practices. Another suggestion for further study suggested that a similar context in evaluating other services industries such as tourism, hospitality and medical on its approach to adopt green practices. The study able to generalize the adaptation of green practices among business organizations focuses on providing services to their customers. In conclusion, developing green practices among LBOs in Malaysia requires further actions and directions. There are elements required further attention from authorities, professional bodies and members in these LBOs to contribute to protecting the natural environment. Contribution to protect the natural environment among these LBOs able to promote sustainable economic promoting their survival in future years.

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THE STUDY ON PSYCHOLOGICAL CONTRACT FULFILMENT TOWARD TURNOVER INTENTION AMONG ACADEMIC STAFF FROM A PRIVATE HIGHER EDUCATION INSTITUTION

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Abstract

Turnover intention has been a problem for every industry around the world. If not treated well, costly effects toward the organizations would occur. For this research, factors of turnover intentions among academic staff in a Private Higher Education Institution (PHEI) are examined. However, there are many factors influencing the turnover intention of academic staff in PHEI. Hence, the study proposes a model to investigate the relationship between psychological contract fulfilment toward turnover intention. The research will focus on four dimensions of psychological contract namely: autonomy and control, organizational rewards, organizational benefits, and growth and development. A quantitative survey was conducted on academic staff in a PHEI, 302 valid questionnaires were collected and analysed through statistical correlation and regression to identify the relationship between the dimensions of psychological contract fulfilment and turnover intention. It is concluded that the inverse relationship of organizational rewards hold the highest influence towards turnover intention. The findings provide an insight for university management deal with turnover intentions in order to prevent loss of talented academic staff.

Keywords: Autonomy and Control, Organizational Rewards, Organizational Benefits, Growth and Development, Turnover Intention

INTRODUCTION

To every existing organization in the globe, turnover can be a potential cost that might lead to huge losses if neglected by the management team. A real turnover situation of an employee may be caused by various reasons whether from the jobs itself or personally from the employees themselves. However, an employee needs to have a turnover intention before he/she can make the decision of leaving from an organization to another organization based on his/her individual demand or perception of a favorable job. Academic staff play crucial and irreplaceable roles in every individual's tertiary education in the university. Basically, a tertiary education, also known as postsecondary education, is the highest education level an individual can pursue before stepping into the work environment. Undergraduates will have to continue their studies in colleges or universities for a few years to complete their tertiary education. Within these years, the academic staff are considered as crucial assets for both the undergraduates and also the university's management. The academic staff serve the function of precious human capital that each university is able to provide (Saraih et al, 2016).

The turnover rates were 45.45% and 18.18% for lecturers in colleges/private universities and public universities respectively in 2004 (National Higher Education Research Institute, 2004). In 2011, the high turnover rates of the education sector had been concerned by the public when the education sector's turnover rates were announced and ranked third among all sectors including both manufacturing industry and non-manufacturing industry, reaching 29.2% average turnover rates (Malaysian Employers Federation, 2015). Academic staff's turnover intention is a huge issue for any management of PHEI to be paid attention to as the cost of actual turnover in the education industry is really high. The amount of time wasted and money spent to recruit and attract suitable candidates have become burden of the private university, not including the training and development for newly entered academic staff (Ainer, Subramaniam, & Arokiasamy, 2018). According to data from Kementerian Pendidikan Tinggi (2016), The number of academic staff for the private sector has been

decreasing from 36,185 academic staff in 2014 to 31,112 academic staff in 2016. This illustrates the high turnover rates in the period. With that, the primary objective of the research is to examine the relationship between the dimensions of the psychological contract fulfilment and the turnover intention of academic staff in PHEI. Through the results of this study, The dimensions of psychological contract fulfilment (autonomy and control, organizational rewards, organizational benefits, growth and development) can be identified to be related to academic staff' high turnover tendency and low turnover tendency. With the results, university management will have a better understanding of academic staff, thus minimizing their turnover tendency in the organization through fulfilling the expectations of the academic staff.

LITERATURE REVIEW

Turnover Intention

Turnover intention is defined as the employee's estimated likelihood of having the intention of leaving the organization/company perpetually in the imminent future (Choi & Lee, 2011). The turnover intention does not mean that the employee will leave the organization but rather an intention for the employee to consider quitting the job. However, it should not be taken lightly as it is argued that intentions will typically lead to actual behaviours of individuals (Firth, 2004). According to Firth (2004), there have been various reasons an individual employee would carry the intention to leave their jobs, also research conducted shows that there have been little consistency with the outcomes, this is likely due to the diversity of variables used by researchers as well as the difference in population samples used. Many previous studies have found that effects of psychological contract breach may come in several adverse changes in behaviour of employees (Kickul & Lester, 2001). There has been several studies that have identified that the non-fulfilment of the perceived obligations of the employers results in a higher turnover intention among employees (Sheehan, Tham, Holland, & Cooper 2019; Liu, Hui, Lee, & Chen 2012). Arshad, and Sparrow (2010) proposes that psychological contract violation has both significant indirect and direct relationship between psychological contract fulfilment and turnover intention. It is said that the contract will be mutually beneficial if both parties does their part. However, when violated, confidence in the benefits of the employer-employee relationship is lost. In turn, intentions to leave the relationship would arise.

Social Exchange Theory

The social exchange theory has been used to explain the behavioural reactions toward a breach of psychological contract (Arshad, and Sparrow, 2010). The social exchange theory states that if cost of relationship is higher than benefits received, and the effort put in is not reciprocated then problems would arise (Emerson, 1976). In short, equality in an exchange should be achieved. Homans (1974) stated that actions undertaken which are rewarded will prompt people to perform that action. This relates to the concept of reinforcement. By binding actions with certain rewards, people will oblige to perform it (Emerson, 1976). As such, when these rewards are not given, inequality in the exchange would ensue leading to change in behaviour. This also creates a situation of interdependence whereby, one party's actions are based of the other's behaviour. The process must begin through one party's action in order to begin the continuous cycle of reciprocation (Cropanzano, & Mitchell, 2005). Hence, this supports the behavioural reactions of the psychological contract.

Psychological Contract Fulfilment (PCF)

Psychological contracts can be defined as the individual's beliefs toward the reciprocal obligations between employee and employer. The beliefs would become contractual once the employee believes that they are obliged to contribute to the employer while expecting in return certain incentives from their employer (Rousseau, 1990). Rousseau and Parks (1993) summarize various other theories such as the Expectancy theory, Equity theory and Agency theory as the nexus of deriving the Psychological Contract. In order for a psychological contract to emerge, the individual must first assume there exists a reciprocal relationship between the two parties. However, the dogma of the individual is unilateral and it does not hold the other party liable if such contract is breached (Rousseau, 1989). The beliefs held by the employee will can be considered a motivator to perform and contribute efforts given that organizations (employers) are consistent with fulfilling the expectations of the employee.

This research adopts Kickul and Lester, (2001) four factors model for the research which comprises of Autonomy and Control, Organizational Rewards, Organizational Benefits, and Growth and Development. Several research have been conducted which deemed that variables such as high pay, promotion and advancement, work life balance, job security and several others are the dimensions of the psychological contract (Robinson, Kraatz, & Rousseau, 1994; Lub, Njie Bijvank, Matthijs Bal, Blomme & Schalk (2012); Sheehan, Tham, Holland, & Cooper, 2019). However, all variables used to explain the psychological contract in those researches can be narrowed down into the four main factors as proposed by Kickul and Lester (2001). Hence, this research adopts the four factors model as proposed by Kickul and Lester (2001).

H1: There is a significant relationship between the four dimensions of Psychological Contract fulfilment (autonomy and control, organizational rewards, organizational benefits and growth and development) and the turnover intention of academic staff in private higher education institution (PHEI).

Autonomy and Control

Wheatley (2017) suggested that autonomy could be stipulated as the level of control over decisions employees could make within their job. Nowadays, autonomy is defined in a new way, as the need to be in charge of our experiences and actions. The new mind-set is considered quite distinct to the traditional idea that autonomy equals independence (Stone, 2018). According to Obloj (2018), autonomy is a one of the great inventions used by the companies to help the employees to develop innovativeness in today's lives. Basically, autonomy can actually be found in diverse parts of work and extensively sorted into two forms, which are "job control" and "schedule control." Job control indicates the level of autonomy employees have over their jobs and their work conduct. On the other hand, schedule control relates to the level of autonomy employees have over their schedule, including deciding the time and venue to work. The conditions above show a relevant amount of flexibility that employees might obtain from the organization they are working with and how employees make choices in terms of work-life balance (Wheatley, 2017). Job autonomy is said to be helpful in making the jobs of the employees more rewarding and less threatening, in a sense that the employees will put more efforts and attention towards their jobs. The following condition leads to more complex and challenging jobs for the employees to lower the level of boredom to prevent high level of turnover intention (Shahzad, Dongjun, Gul, Jamil, & Kumar, 2018). Llopis and Foss (2016) proposed that if employees are given more job autonomy, it would directly help to positively build cooperative behaviours among the employees. It is observed that autonomy is considered as part of the most essential psychological needs in order to achieve ideal human development and integrity (Llopis & Foss, 2016).

H1a: There is a significant relationship between autonomy and control and turnover intention of academic staff in private higher education institution (PHEI).

Organizational Rewards

As stated by Dulebohn and Werling (2007), rewarding employees is a core element of organizations' human resource management. Management needs to understand how their employees can be motivated so that they will be able to achieve the organizational goals easier. For this purpose, management needs to understand their employees' attitude towards work and life, and the various types of personalities. Inability to do so may lead to turnover of employees which can result enormous losses for both financially and non-financially (Rajapaksha, 2015). Financial rewards are monetary incentives that are earned by an employee due to excellent performance. These rewards may or may not improve the financial wellbeing of employee. In fact, reward plays a vital role in the performance of employee as the rewards can determine how productive an employee is and motivate them to perform well. It is crucial for a manager to understand how financial rewards really inspire and motivate the employees. Financial reward is regarded to be the most functional instrument for managers to motivate employees to move effectively and impact their behavior in order to attain higher objectives (Danish & Usman, 2010). As for non-financial rewards, it is a reward which can satisfy the ego and self-actualization needs of employees. Non-financial rewards are at the dispense of the organization as they do not actually improve the employee's financial position. Non-financial

rewards emphasize on making life on the job more appealing instead of making the employees' lives better off the job (Danish & Usman, 2010).

H1b: There is a significant relationship between organization rewards and turnover intention of academic staff in private higher education institution (PHEI).

Organizational Benefits

Benefits are one of the key motivators which motivate employees to perform tasks more enthusiastically and minimize employees' turnover intention in any organizations. In an organization, employers retain employees by providing internal and external benefits as these are the basic benefits that a company should provide to those well-performed employees (Iqbal, Guohao, & Akhtar, 2017). The welfares are classified as statutory welfare and non-statutory welfare which are compulsory to be provided by the organization as compliance to the laws to protect employees' safety and health in the workplace (Naukrihub, 2019). Jain and Kashyap (2013) defined that the working environment and the welfare facilities are considered as the benefits provided by the organization which results in employees' high motivation to work and satisfy employee's needs in the workplace. Taufek, Zulkifli and Sharif (2016) defined that benefits can influence the employees both positively and negatively. So, when benefits are right for them, it's a good indicator of job commitment. But if this happens, the employee's welfare and the employee's rights are incorrect; it will bring negative impact to the company. According to Ashraf and M.A. (2018), work environment is not only the physical environment of workplace, but also part of organizational culture. A positive work environment can make employees feel good about coming to work and provide them with the necessary motivation to keep them in good shape throughout the work process. Faced with the dynamic changing environment, in order to maintain the low turnover intention of employees, the organization will respond to the changing environment to satisfy its employees and maintain its competitive advantage. Thus, the organization provides a work environment that provides a sense of belonging, generous personnel policies and good workplace control, and increases the level of motivation for employees to make long-term commitments to the organization.

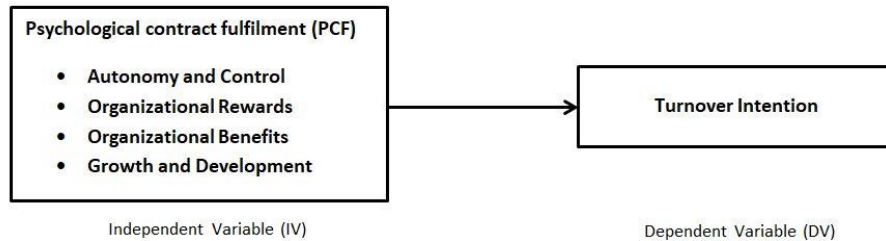
H1c: There is a significant relationship between organization benefits and and turnover intention of academic staff in private higher education institution (PHEI).

Growth and Development

According to Jacobs and Washington (2003), employee development reflects to a mixed group of scheduled functions, given over a period of time, to ensure all employees gained the essential competency to bring out their best and fulfill organisation's target. The planned functions are not solely equipped employees for status quo, but also for future stage. Opportunities of growth and development includes promotion, career development, growth and training (De Vos, Buyens & Schalk, 2003). According to Pergamit and Veum (1995), promotion is a process of promoting an employee by upgrading his or her position. The results of promotion are including raised wages, training receipt, supervisory responsibilities and job satisfaction. Career development basically means the personal efforts by an employee to learn and develop new techniques that the employee can use to earn more income, obtain promotions and switch careers. The major difference between career development and employee development is that career development is an effort by an employee; compare to employee development which is an effort by company for company's internal benefits (Kokemuller, 2016). Hammeed and Waheed (2011), held that employee development as one of the most important functions of human resource management. However, Mayo (2000) viewed it as the main driver of value growth in any type of organization. The importance of giving these opportunities are incremental of employees' goal commitment, organizational commitment and job satisfaction. Hence, If the opportunities are not delivered or under-delivered, the consequences may be catastrophic. Eventually, it will become the factor that lead employees to have turnover intention (Chin, 2018). The benefits of growth and development not only benefit employees themselves, but also helps the organization as well (Hammeed & Waheed, 2011). On theoretical point of view, development opportunity is one of the better connectors with work engagement (Guest, 2014).

H1d: There is a significant relationship between growth and development and turnover intention of academic staff in private higher education institution (PHEI).

CONCEPTUAL FRAMEWORK



Source: Developed for research

The conceptual framework is derived from the literature review and is consolidated into 4 dimensions of psychological contract fulfilment (Autonomy and Control, Organizational Rewards, Organizational Benefits, and Growth and Development) toward the turnover intention.

RESEARCH METHODOLOGY

In this study, the questionnaire is distributed to UTAR academic staff in Sungai Long and Kampar, Malaysia. This is because of the location benefits to develop the questionnaire which is in close proximity. Shorter time to distribute and access the target respondents as well as retrieve the questionnaires is ideal. The questionnaire is distributed all around UTAR Sungai Long and Kampar campus. These locations are the ideal locations to distribute our questionnaire because it can achieve high effectiveness, high efficiency and less time constraint.

Probability sampling method is utilized to choose the target respondents. Simple random sampling method is used to choose for the target respondent. Simple random sampling allows each member of the subset to have an equal probability of being selected. It helps generate an unbiased representation towards the population (Hayes, 2019).

The suitable sample size for this research is exactly 302 by referring to the table from Krejcie and Morgan (1970) and given that the estimated population size which is 1389 academic staff. The questions in this research questionnaire are designed by using fixed-alternative method to identify the fulfillment of psychological contract and the respondents turnover intention

DATA ANALYSIS

According to Table 1, the results show that all dimensions of the psychological contract are have a negative relationship with turnover intention. All dimensions have a P-value of <0.001. Hence all hypothesis are supported. In terms of relationship of the dimensions toward turnover intention, all dimensions have a moderate relationship under the range of ± 0.41 - ± 0.70 except for Autonomy and Control which has a small but define relationship under the range of ± 0.21 - ± 0.40 . With the results from Table 2, the following equation is developed.

$$TI = 4.91916 - 0.06624 (A\&C) - 0.29200 (OR) - 0.18338 (OB) - 0.16951 (G\&D)$$

TI = Turnover Intention

A&C= Autonomy and Control

OR = Organizational Rewards

OB = Organizational Benefits

G&D = Growth and Development

Based on the equation, organizational rewards contribute the highest to explain turnover intention. This is identified as it has the highest parameter estimate among all the variables (-0.29200). autonomy and control contributes the least to explain the variability of turnover intention as it has the lowest parameter estimate of (0.06624). In summary, organizational rewards is the best predictor of the variability of turnover intention in comparison to all other variables in this model.

Table 1: Pearson Correlation Coefficient Analysis

		Cronbach's Alpha
Autonomy and Control	Pearson correlation	-0.32041
	Sig. (2-tailed)	<.0001
	N	302
Organizational Rewards	Pearson correlation	-0.47203
	Sig. (2-tailed)	<.0001
	N	302
Organizational Benefits	Pearson correlation	-0.41659
	Sig. (2-tailed)	<.0001
	N	302
Growth and Development	Pearson correlation	-0.42616
	Sig. (2-tailed)	<.0001
	N	302

Table 2: Multiple Regression Analysis

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	4.91916	0.29486	16.68	<.0001
Autonomy and Control	1	-0.06624	0.07834	-0.85	0.3985
Organizational Rewards	1	-0.29200	0.07804	-3.74	0.0002
Organizational Benefits	1	-0.18338	0.10321	-1.78	0.0766
Growth and Development	1	-0.16951	0.09675	-1.75	0.0808

CONCLUSION AND DISCUSSION

This study is designed to identify the influence of the independent variable (Psychological contract fulfillment) through its four dimensions toward the dependent variable (Turnover intention). All dimensions have shown a negative correlation with turnover intention with differing strength of influence. Multiple Linear Regression Model tests were conducted to identify the connection between psychological contract fulfillment and turnover intention. According to the results, all dimensions have a P-value of <0.001 which is less than alpha value 0.05. Hence all hypotheses in the study are supported. The dimensions of psychological contract fulfillment (Autonomy and Control, Organizational Rewards, Organizational Benefits, and Growth and Development) have shown to be significantly correlated with the dependent variable of turnover intention. All dimensions are negatively correlated with differing strengths of influence with Organizational Rewards being the most impactful while Autonomy and Control being the least toward turnover intention. The negative correlation proves that when either one of the dimensions are not fulfilled as expected by academic

staff then turnover intentions would arise. The results for each dimension are consistent with past researches on differing target populations.

The results from the research permits a further understanding of the dimensions of psychological contract fulfilment and its influence towards turnover intention among academic staff of PHEI. Hence, future research on PHEI academic staff turnover intentions could take into consideration the four dimensions of psychological contract fulfilment used in this model and further improve on it and develop a more comprehensive model. The results can provide a helpful understanding for university management to reduce turnover intentions of academic staff. The research was able to identify and rank the importance of each dimension of psychological contract fulfilment towards turnover intention which allows managements to focus on fulfilling those perceived obligations of the university by academic staff. Employee retention for universities is crucial especially for highly talented academic staff as they are the ones who bring up the name of the university through research and educating the younger talents. As it is important for academic staff to conduct their own research, talents in teaching university students are also important to the university as most clients of the universities take the teaching role of academic staff in high regard. Therefore, this research allows management to prevent loss of talented academic staff that is the core elements that make up the universities' image. This study is limited in its research scope only covering academic staff from University Tunku Abdul Rahman. This is due to various constraints such as procedures, time and regulations. Authorization and approval to conduct a research is very difficult to obtain especially when the contact person is not willing to help or cooperate. Hence, we recommend further research to further expand the research scope to cover more universities in Malaysia to develop a more comprehensive research that could reflect the situation of academic staff of PHEI in Malaysia.

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EFFECT OF CUSTOMER RELATIONSHIP MANAGEMENT IN DIGITAL MARKETING FOR CUSTOMER SATISFACTION AND LOYALTY

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Abstract

This research paper deals with understanding the impact of Customer Relationship Management through digital marketing on influencing consumer satisfaction and loyalty. The research paper identifies three independent variables pricing strategy, customer engagement policies and quality assurance strategy and analyses the way in which dependent factor customer satisfaction and loyalty depends on it. It has used SPSS analytical tool to analyze the data collected and conduct Cronbach's Alpha test for reliability analysis along with Pearson Correlation test to understand significance of the relationship between independent and dependent variables. CRM helps organizations to stay connected with its target market and analyze the changing trends in the market.

Keywords: Customer relationships, Customer engagement, Technology, Pricing strategy, Customer satisfaction

INTRODUCTION

The study has focused on different strategies of customer relationship management which affect customers' satisfaction level and their loyalty in digital marketing procedure. In this context, this research paper emphasized on three different independent variables such as online pricing strategies, customers' engagement strategies and quality assurance strategies in relation to customer loyalty and satisfaction level. Navimipour & Soltani (2016) cited, business organizations nowadays are expanding their business through digital marketing process and this helps them to make a long-term and easy way to make relation with their customers. Regarding this matter, customer relationship management (CRM) is one of the most important aspects of the contemporary business organization and play vital roles in improving the loyal customer base of the organization. The CRM is a robust management strategy to manage the organization's interaction and relationship with the existing plus potential customers (Salesforce, 2018). These types of strategies help customer to feel important for many companies and business companies can retain their customers in relevant manner (Agnihotri *et al.* 2016).

Currently, with the evolvments of digital technologies and growth of digital media, the marketers are encouraged to use the digital media for marketing and thus digital marketing is increasingly growing and becoming latest marketing trend. Digital marketing can be defined as the marketing endeavors that use the digital technologies such as internet, search engine, email, social media or other websites for marketing of certain products or services. The digital marketing efforts of an organization basically cover the entire marketing strategies. Furthermore, CRM strategies of an organization work very efficiently in its digital marketing endeavors as the social media is extensively used by the marketers for marketing, which in turn support in improving the relationship with the customers. Currently, the digital media is regarded as most powerful media and this power can be used by the competent marketers to enhance customer relationship (Patel, 2018).

In relation to this, this research paper has discussed relevant research methodologies and data analysis process which helps to get proper result from collected data. Customer satisfaction level has considered as dependent variables for this research paper and there are three hypotheses have developed. In accordance with Krush *et al.* (2016), digital marketing process is increasing day by day

which helps business organization and customers to interact with each other by the use of internet facilities. Moreover, this is an easy and time-saving process by which people can get engage with each other and this increase the value of customers (Tiago & Verissimo, 2014). Furthermore, business companies can use several customer relationship management strategies to increase the positive effect on their customers and increase their customer base as well.

LITERATURE REVIEW

CRM strategies

Customer relationship management is the process which emphasizes on the interaction and relationship between a business and its customers. In today's competitive business environment CRM strategies are broadly recognized to enhance interaction with customer and sales prospects. As mentioned by Ledford and Gast (2018), common CRM strategies in this digital age include using technology to automate and organize business operations, sales activities, marketing activities, enhance customer service and provide technical support. The CRM strategies can be categorized into various aspects such as pricing strategy, customer engagement strategy, quality assurance strategy which discussed in this literature review (Sulaiman, @ Baharum & Ridzuan, 2014).

Pricing Strategy

Pricing strategy is required for every business organization by which they can attract their customers to developing their business. Digital marketing process helps customers to compare the prices of different products with other companies. According to Gu & Ye (2014), these help customers to engage themselves more with different companies, and the particular business organization has provided different offers to their customers. In relation to this, business organizations can retain their customers with their offer prices. Moreover, pricing strategies can be decided by business companies which lead their business in increasing manner.

Types of pricing strategies:

Product Line Pricing – Product line pricing mainly states the practices of fixing up of prices for numerous products that a particular company offers in associate with one another. It basically focuses on the sales instead of fixing and setting prices of each product (Edmunds, 2019). Thereby, it also avoids competitive product and prefer complementary.

Competition Pricing – Competition based pricing is said to be the method of pricing that makes a good utilization of the prices of competitors for similar product. Normally this type of process of pricing focuses on the market information and then set or fix up the price of the product (Accountingverse, 2018). The competing product price use benchmark and company also sell its product whether by decreasing and increasing of the benchmark price.

Cost Based Pricing – Cost based pricing is considered as the methods of pricing for determining the actual selling price of the product by company (Mbaskool, 2019). The product price is determined by means of adding a profit factor in addition to the product making cost.

Option Pricing – It states that how options are being valued in the market. This pricing strategy makes use of variables such as volatility, rate of interest, price of stock and exercise price (GANTI, 2019). It provides option's fair value estimation that business holders incorporate within their strategies for profit maximization.

Penetration pricing - Penetration pricing is considered as one of the pricing strategy where the cost of the product is initially set low so that it can reach to the wide fraction of the market. This also initiates the word of mouth. This type of pricing strategy works on the expectation of each individual. The customers always tend to shift to the new products when they find the cost of the product is low (Corporatefinanceinstitute, 2019).

Psychological pricing -The psychological pricing is considered as the marketing strategy and as well as the pricing strategy which is totally based on the theory and also has a psychological impact. Many a time it is found in the retail sector that the prices of the products are not rounded off. But it is little less than the round off figure. This creates a psychological impact on the customer's mind, that the price of the product is low (LaMarco, 2019).

Premium pricing - The premium pricing is considered as the strategy where the company set higher price than the market price. This is because it may bring change in the customer's mind that high price means the quality of the product is high in compare to others (Mbaskool, 2019).

Customer Engagement Strategy

Customers' engagement strategies are another way by which business organization increase their relationship with their customers. Moreover, business organization needs to maintain proper relationship with their customers by which their customers' retention process can be increased. In this context, this variable can increase the level of customer satisfaction level and this makes their customers more loyal for their business organization (McEachern, 2019). In relation to this, business organization can take feedback from their customers by which they can maintain an appropriate relation. On the other hand, business organization can work on their weaknesses which have stated by their customers and this increases their satisfaction level as well. In this context, business companies can retain their customers by which their customer base can increase and this helps them to increase their business as well (Järvinen&Karjaluo, 2015). On another hand, this has positive effect on customer satisfaction level and business organization and this can increase the competitive level of business organization in their market as well.

The customer engagement strategy has been identified as an exclusive marketing strategy which delivers relevant, strategic and personalized messages within a timely fashion towards current or potential customers (Alvarez-Milán, Felix, Rauschnabel & Hinsch, 2018). One of the strategies which are incorporated in the engagement of customer can be identified as personalized emails regarding products or sales. The organization could also utilize different strategies which could be adopted into the company's business model. Some of strategies can be identified in the following:

Selling according to the interest of customers
Personalization of communication both direct and indirect
Enlarging the options for customer service (Energex, 2016)

Quality Assurance Strategy

Quality Assurance is an important component of effective Customer Relationship Management Strategy and it influences consumers in a positive direction. According to Ko, Phau& Aiello (2016), Digital Marketing is a concept in which the online website platform is utilized by market researchers to reach out to consumers and form a healthy relationship with its target market. Customer Relationship Management (CRM) strategy is an integral part of Digital Marketing and it is done to engage consumers in promotional activities of the product. In the opinion of Lemon, &Verhoef (2016), product quality is of utmost importance and through Digital Marketing product features is highlighted and is assured that they will get best of them in return of a price-cost worth of it (Guru99, 2018).

The utilization of different digital channels such as search engines, email marketing, presence on social media and connecting with existing and new consumer base through company websites helps in leveraging business. In accordance with top Mahalaxmi & Ranjith (2016), it leads to customer satisfaction as they are able to view the product features and compare the product price range of different brands due to digital, marketing. According to Agnihotri *et al.* (2014), it also helps in generating brand awareness as the promotion of a product through social media pages such as Facebook, Instagram, and Twitter highlights the product features and creates hype among target customers. In the opinion of Wang & Kim (2017), the sharing of pages increases the optimization of search engine and helps in spreading of brand through word-of-mouth process. This helps in increasing consumer base and customer satisfaction leads to retention of loyal consumer base (QA Consultants, 2018).

Customer Satisfaction and Loyalty

Customer's satisfaction is the prime aim of business organization as they are the market drivers and makes or break a product. Positive customer feedback helps in making the product enter into the maturity and postmaturity phase. This is assured by effective customer relationship management such as retrieving feedback from them and working on it to provide consumer-centric services or

products. According to Navimipour & Soltani (2016), Customer Relationship Management helps an organization to connect with consumers and the medium through which it is conducted is with the help of digital marketing technology. In the opinion of Parise, Guinan & Kafka (2016), this leads to introduction of product innovation and it helps in retaining consumers.

Customer satisfaction ensures that there is a loyal base of target consumers for the organization. An organization ensures contact management, sales management and productivity with the help of CRM and incorporates it through digital marketing. In accordance with Ramanathan, Subramanian & Parrott (2017), digital marketing consists of search engine optimization techniques such as receiving real-time feedback from consumers and posting product information on blogs and through infographics. In accordance with Tiago & Verissimo (2014), content marketing is done through providing online brochures and it leads to gain of product knowledge for consumers. Social media marketing strategies help in connecting to remote and distant target audience as they are found on online platform more often with easy availability of internet services (Khadka & Maharjan, 2017).

CONCEPTUAL FRAMEWORK

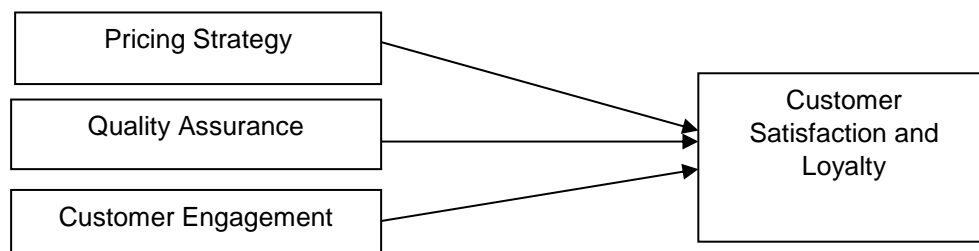


Figure 1: Proposed Conceptual Framework

Hypothesis: The hypothesis developed for the research study can be summarized in the following manner:

First Hypothesis

- a. There is a positive relationship between pricing strategies for maintaining effective CRM with that of customer satisfaction and loyalty (Kiptoo, 2018).
- b. There is a negative relationship between pricing strategies for maintaining effective CRM with that of customer satisfaction and loyalty.

Second Hypothesis

- a. There is a positive relationship between customer engagement strategy for maintaining effective CRM with that of customer satisfaction and loyalty (Hasnin, 2018).
- b. There is a negative relationship between customer engagement strategy for maintaining effective CRM with that of customer satisfaction and loyalty.

Third Hypothesis

- a. There is a positive relationship between quality assurance strategy for maintaining effective CRM with that of customer satisfaction and loyalty (Alabboodi, 2019).
- b. There is a negative relationship between quality assurance strategy for maintaining effective CRM with that of customer satisfaction and loyalty.

RESEARCH METHODOLOGY

Sampling Design

Research methodology helps in guiding researcher the steps required to be followed in order to conduct research process and accomplish research objectives. In this context, researcher takes help of research onion to identify the stages required in accordance to requirements of research study that varies from each other. It also helps in selection of data collection and analysis methods to reach to evidence-based interpretation of research data.

Research Procedure

Research process helps in identifying the ways in which data collected are interpreted and the research parameters defining research process. In this context, research philosophy, research approach and research design need to be identified along with sampling method and number of respondents to be sampled. The present research study helps in identifying the impact of Customer Relationship Management (CRM) through digital marketing in giving satisfaction to customers and developing a loyal consumer base. Positivism Research Philosophy is used as it is appropriate for interpreting data collected from true experiences of respondents and the way they feel.

In this respect, satisfaction level of customers and their loyalty value is analyzed based on their experiences of facilities provided by digital marketing strategy to emphasis on CRM section of organizations. According to Flick (2015), deductive research approach is initiated as it helps in comparing the hypothesis proposed with that of actual results generated from data analysis. Descriptive research design is used as it helps in representing data analyzed in details through charts and diagrams. 100 consumers as respondents from Kuala Lumpur region of Malaysia area are sampled through random sampling method.

DATA ANALYSIS

Demographic profile

The demographic profile helps in understanding the financial condition along with educational background and nature of respondents surveyed. The table below shows the demography of respondents of Kuala Lumpur region of MALAYSIA.

Variables	Values	Percentage (%)
Age	Below 20	20
	21-30	30
	31-40	30
	Above 40	20
Gender	Male	45
	Female	55
Marital Status	Married	70
	Unmarried	30
Ethnicity	Malay	60
	Chinese	20
	Others	20
Education Level	High School	15
	Undergraduate	30
	Masters/MBA	40
	M.Phil/DBA/PhD	15
Hours Spend on Browsing Internet and ordering products from online platforms on per day basis	Less than 1 hour	60
	1-2 hours	25
	2-3 hours	10
	More than 3 hours	5
Salary	RM 1,500- RM 2,000	45
	RM 2,001- RM 2,500	35
	RM 2,501- RM 3,000	12
	More than RM 3,000	8

Table 1: Demographic Analysis

Reliability test

Reliability test is performed in order to realize and be ensured by the fact that the data collected have an internal consistency. It is assured from the value generated by Cronbach's Alpha parameter of reliability test. The value close to 1.0 indicates that data collected and variables considered have an internal consistency. It also signifies the fact that the independent and dependent variables are highly interrelated.

In this context, Cronbach's Alpha value of the first independent variable identified that of pricing strategy information presentation through digital marketing is .970. Hence, the data collected have an internal consistency and are reliable. It also specifies that it is interrelated with the dependent variable, customer satisfaction and loyalty. The Cronbach's Alpha value for second independent variable, customer engagement strategy is .964 and is also close to 1.0 value. This indicates that there is an inter-relationship in between customer engagement strategy with customer satisfaction and loyalty maintenance.

Table 2: Reliability Test

Variables	Items	Cronbach's Alpha
Pricing Strategy	3	.970
Customer Engagement Policy	3	.964
Quality Assurance Strategy	3	.988
Customer Satisfaction and Loyalty	3	.977

Cronbach's Alpha value for product quality assurance as an important entity of executing CRM strategies through digital marketing is .988. This demonstrates that it has a positive impact on the creation of customer satisfaction and loyalty. The independent variable, customer satisfaction and loyalty program have Cronbach's Alpha value of .977 that is also close to 1.0 value and thus it has close interrelatedness with that of independent variables identified in the research study.

Pearson Correlation Analysis

Hypothesis 1

In accordance to Guilford's Rule of Thumb, a positive Pearson correlation value r is less than 0.05 ($p < 0.05$) and it signifies that there is a significant relationship in between independent variable and dependent variables. In this context, pricing strategy has a p -value of .748 with that of customer satisfaction, .753 with that of customer loyalty and .747 in bringing in transparency about product features that increase satisfaction and loyalty in turn. Hence, it shows that there is a positive relationship between customer satisfaction and loyalty with that of the impact of CRM through digital marketing strategies. Customer loyalty increases and digital marketing enables them to compare price ranges of different products and to gain knowledge of market price standards without being physically present in stores.

Table 3: Pearson Correlation Test

		Info_IV1	Satis_IV1	Comp_IV1	Cust_sat_DV
Info_IV1	Pearson Correlation	1	.907**	.918**	.748**
	Sig. (2-tailed)		.000	.000	.000
	N	100	100	100	100
Satis_IV1	Pearson Correlation	.907**	1	.978**	.842**
	Sig. (2-tailed)	.000		.000	.000
	N	100	100	100	100
Comp_IV1	Pearson Correlation	.918**	.978**	1	.821**
	Sig. (2-tailed)	.000	.000		.000
	N	100	100	100	100
Cust_sat_DV	Pearson Correlation	.748**	.842**	.821**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	100	100	100	100

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

Hypothesis 2

In accordance with Guilford's Rule of Thumb, there is a positive relationship between customer engagement policies with that of customer satisfaction and loyalty. This is due to the fact that p -value of the variables in relation to that of dependent factor is less than 0.05. Customer satisfaction has a value of .765 with that of customer engagement policies and a p -value of .759 with that of customer loyalty value. It has a p -value of .765 with that of transparency about the buying process and customer engagement policies employed through digital marketing policies. It reflects CRM strategies of an organization and has an impact on satisfying customers.

Table 4: Pearson Correlation Test

Correlations					
		Engage_IV2	CRMref_IV2	Proknow_IV2	Cust_sat_DV
Engage_IV2	Pearson Correlation	1	.881**	.847**	.765**
	Sig. (2-tailed)		.000	.000	.000
	N	100	100	100	100
CRMref_IV2	Pearson Correlation	.881**	1	.978**	.842**
	Sig. (2-tailed)	.000		.000	.000
	N	100	100	100	100
Proknow_IV2	Pearson Correlation	.847**	.978**	1	.868**
	Sig. (2-tailed)	.000	.000		.000
	N	100	100	100	100
Cust_sat_DV	Pearson Correlation	.765**	.842**	.868**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	100	100	100	100

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

Hypothesis 3

The p-value in accordance with Pearson Correlation test performed for having or the importance of product assurance through that of digital marketing strategy with that of customer satisfaction is .906. In accordance with Guilford's Rule of Thumb it is lower than 0.05 that shows that there are a positive relationship and dependency between the variables. Customer loyalty has a value of .877 with that of knowing product loyalty that is represented through digital marketing strategy and .917 in bringing transparency about products sold by the organization.

Table 5: Pearson Correlation Test

Correlations					
		Proqual_IV3	Feedback_IV3	Incr_comp_IV3	Cust_sat_DV
Proqual_IV3	Pearson Correlation	1	.973**	.968**	.906**
	Sig. (2-tailed)		.000	.000	.000
	N	100	100	100	100
Feedback_IV3	Pearson Correlation	.973**	1	.960**	.898**
	Sig. (2-tailed)	.000		.000	.000
	N	100	100	100	100
Incr_comp_IV3	Pearson Correlation	.968**	.960**	1	.940**
	Sig. (2-tailed)	.000	.000		.000
	N	100	100	100	100
Cust_sat_DV	Pearson Correlation	.906**	.898**	.940**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	100	100	100	100

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

CONCLUSION AND DISCUSSION

From the data analyzed, it can be concluded that there is a significant relationship between the independent variables (Pricing Strategy, Customer engagement, Quality Assurance) identified with that of the dependent variable (Customer satisfaction and Loyalty). Pearson correlation test has been performed in order to analyze the significance of the hypothesis proposed. It has been observed that the Pearson Correlation value is less than 0.05 that implies that the dependent parameters are related to independent variables. It can be concluded that information related to price value of products highlighted in digital marketing through content and product features, customer engagement strategy through retrieving feedback and reviews and ensuring quality services helps in giving satisfaction to consumers and helps in maintaining a loyal consumer base.

Pricing strategy implemented through digital marketing ensures product quality as it gives information of product features through digital marketing strategies. Consumers can compare features and quality of different products through online platforms. It helps them in selecting the best and assured of the fact that they are receiving quality product in terms of the worth they are paying for. This is an important entity of CRM process and data reliability is verified with help of generating Cronbach's Alpha test. On the basis of the reliability testing process, it is seen that pricing strategy information presentation through digital marketing is 0.970. It is seen to be near to value 1.0. Due to this reason, the strong interrelationship with the dependent variable customer satisfaction is seen. It clearly indicates that the relationship is present in between the pricing strategy and the customer satisfaction. On the basis of Pearson Correlation analysis, it is seen that the p-value of .748 with that of customer satisfaction, .753 with that of customer loyalty and .747 in bringing in transparency about product features. Due to this reason, the pricing strategy is seen to be creating a positive impact on the CRM through the digital marketing strategies. The increase in the customer satisfaction and loyalty is seen by the help of comparing the price ranges of different products. Due to this reason, it is directly related to the customer satisfaction and loyalty.

Customer engagement is also very much essential for gaining customer satisfaction and loyalty. The level of satisfaction of the consumers can be seen by the help of the customer engagement process, On the basis of the reliability analysis, it is seen that the value of customer engagement strategy is .964. It is identified to be near to 1.0. Due to this reason, the strong interrelationship between the customer engagement strategy with the customer satisfaction and loyalty is seen. On the basis of Pearson correlation analysis, it is seen that Customer satisfaction has a value of .765 with that of customer engagement policies and a p-value of .759 with that of customer loyalty value. It is reflecting that the CRM strategies of an organization are creating an impact on customer satisfaction.

Quality Assurance is also very much essential for identifying the customer satisfaction and gaining loyalty of the customers. Due to this reason, the improvement in the customer base will be seen as well as the enhancement of the digital marketing strategies will be carried out. On the basis of reliability analysis, it is seen that Cronbach Alpha value for product quality assurance is .988. It is reflecting the development of positive impact on the customer satisfaction and loyalty program. Thus, the close interrelationship is identified with the dependent variable customer satisfaction and loyalty. On the basis of Pearson Correlation, it is seen that quality assurance with customer satisfaction is .906, with customer satisfaction and loyalty value is .877 and with transparency of the product value is .917. Due to this reason, the quality assurance is identified as the important factor. Customer satisfaction and Loyalty is essential which is described in all the above independent variables. The relationships between the variables are identified with the dependent variable. It is essential for identifying the digital marketing processes and the strategies in an appropriate way. Thus, the considered independent variables are directly related to this dependent variable.

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FACTORS OF CLOUD COMPUTING ADOPTION BY SMEs. A REVIEW

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Abstract

The competitive environment of business has changed in recent time with the rapid technological transformations that have made enterprises become extremely vigilant in order to survive. Industry revolution 4.0 (I4.0) is the current emerging technological evolution in the business world. It is driven by the broadband technology in telecommunication and Cyber Physical System (CPS). One of the key enabling technology in I4.0 is cloud computing. Cloud computing has many advantages in terms of cost reduction, accessibility, flexibility and collaborations among businesses. Given these benefits, most enterprises especially SMEs are still lagging behind in adopting cloud computing. This study conducted a literature review to ascertain and classify the most important factors influencing cloud computing adoption among SMEs. The study has categorized the factors influencing cloud computing adoption among SMEs into 4 factors; firstly is management decision, secondly, cloud application ability, thirdly, survival and lastly how it contributes to competitive advantage.

Key words: Cloud Computing; Adoption; Factors; SMEs; I4.0.

INTRODUCTION

Small and medium enterprises (SMEs) are basically the strength of the economy of many countries and continent. In Europe, they represent over 99% of EU enterprises, contribute close to 60% GDP and close to 70 % of total workforce (Nowotarski & Paslawski, 2017). Similarly, in Singapore, SMEs are about 99.3%, they contribute about 46% to the GDP of Singapore and acloud computingout for close to 63% workforce employment (Gupta, Seetharaman, & Raj, 2013). SMEs in Singapore are defined as enterprises that employ not more than two hundred employees and that have an annual sales turnover not exceeding \$ 100 million (Gupta et al., 2013). However, SMEs in Malaysia are delineated for service providers and manufacturing. Based on SME Corp Malaysia (2014), full time workers of manufacturing companies must not exceed 200 with a maximum of RM50 million sales turnover, while the full time workers for service companies must not exceed 75 with a maximum of RM20 million as sales turnover. In Ethiopia, SMEs are defined based on their paid up capital which ranges between Birr 20,000 and Birr 500,000 (Auzzir, Haigh and Amaratunga, 2018). It is therefore difficult to arrive at a clear-cut definition of SMEs.

Bolton Committee in 1971 was the first organisation that provided a working definition of SME as a firm that possesses three criteria of (1) comparatively small market share (2) personalized management structure by owners (3) not a subsidiary of a big company (Kayanula and Quartey, 2000). In recent times however, varying definitions are prevalent in industrialized, developing and least developed countries, based on annual turnover and employees number (Auzzir et al., 2018). In responding to market changes and coping with competition, small and medium enterprises are being reshaped by major business technology inclinations such as Internet of Things (IOT), Semantic Web, embedded things, virtualisation technologies, Cloud computing, Internet of Service (IOS), Industrial Internet, Smart Factory, Cyber physical systems, Big Data and Advanced manufacturing (Bughin, Chui & Manyika, 2010; Moeuf, Pellerin, Lamouri, Tamayo-Giraldo & Barbaray, 2018; Nowotarski & Paslawski, 2017), which all underpin the fourth industrial revolution termed "Industry 4.0" (I4.0). Industry 4.0 was a term created from the initiative of the German government to protect the future competitiveness of the manufacturing sector. It infuses cyber physical systems (CPS) in industrial production in order to initiate an industrial value creation that is highly intelligent and interlinked and regulates itself (Kagermann, Wahlster and Helbig, 2013; Lasi, Fettke, Kemper, Feld & Hoffmann, 2014; Liao, Deschamps, Loures & Ramos, 2017).

The objective of (I4.0) is to reform how work and living are organised which is similar to previous industrial revolutions (Müller, Buliga, & Voigt, 2018) that achieved increased productivity driven by

some quick-spreading technologies like mechanisation, electricity and Information Technology (Veza, Mladineo & Gjeldum, 2015). Moreover, I4.0 is simply to advance economic, social and environmental concerns (Kiel, Muller, Arnold & Voigt, 2017) like erstwhile industrial revolutions. Despite these similarities, I4.0 is fundamentally different from past industrial revolutions because, the first industrial revolution of the end of the 18th century introduced mechanical production with the aid of water and steam power. The second IR was notable for mass production with the aid of electrical energy. The third IR introduced the combination of IT and electronics to further improve production automation. The fourth IR is based on cyber physical production systems where the physical and virtual worlds are integrated, hence the major difference between I4.0 and the past revolutions (Gilchrist, 2017).

Cloud computing is one of the pillars of the current industrial revolution 4.0 and has numerous benefits for businesses. Despite the diverse benefits of cloud computing, many big companies have speedily adopted cloud computing while many SMEs are still complacent about whether to adopt or not as posited by MINDSHIFT , a USA based company (Gupta et al., 2013). With the potential of gaining competitive advantage through adoption of new technologies, SMEs are averse to some challenges like size, limited financial challenges, innovation adoption risk and cost intolerance and actual cost of initial investment outweighing the estimate (Jorgensen and Molokken-ostvold, 2006; Priyadarshinee et al., 2017). Some other challenges of cloud adoption could be related to unauthorized unauthorized access, data spying by service provider, data stuck-in, stability of provider, high availability, security against attacks or hacking, reliability and cloud forensic evaluation (Zafar et al., 2017). Regardless of the potential challenges associated with cloud computing, as an outstanding innovation, it needs a comprehensive understanding of factors influencing its adoption. Understanding businesses' perceptions of cloud computing adoption is very germane because they can be used as a possible yardstick that is capable of determining business performance (Priyadarshinee, Raut, Jha, & Kamble, 2017).

Given the importance of SMEs to the economy of virtually all countries, and the benefits cloud computing can offer, it is pertinent to review previous research studies on cloud computing adoption and ascertain the vital factors influencing cloud adoption among small and medium sized enterprises. This will offer a more nuanced view of factors influencing cloud computing adoption, especially with regards to SMEs that are most vulnerable to new technological innovation adoptions. In order to achieve the above mentioned objective, this article is structured into 5 sections. Section 2 centres on cloud computing brief information, then research methodology is presented in section 3; Section 4 discusses the findings. Finally Section 5 conclude the findings.

OVERVIEW OF CLOUD COMPUTING

I4.0's focus is centered on the smartness of factory which is expected to usher in a more intelligent, versatile, ergonomic, efficient and integrated products and manufacturing system throughout the whole supply chain (Schönsleben, Fontana, & Duchi, 2017) where cloud computing will play a notable role. As earlier enumerated, I4.0 is enabled by different technologies, where cloud computing is very useful. This study isolates cloud computing adoption because, past studies have demonstrated although a limited but yet positive gains I4.0 has on SME's performance in terms of operation, based on relatively little investment and technical skills when cloud computing is targeted (Moeuf et al., 2018). Furthermore, information technology platform based on cloud computing serves as a major technical foundation for the interconnectivity and communication of I4.0 application centre elements (Vaidya et al., 2018). Cloud computing is of great interest to businesses and has attracted their attention. The potential of cloud computing to consolidate bilateral relationship among enterprises is significant and many companies in diverse sectors can reap notable benefits from adopting cloud computing. More importantly, the recent significant computer and smart phone usage globally that has increased global competition and the need for enterprises to diversify geographically for sustainability is achievable through resource efficiency for operational excellence, which an evolving innovation such as cloud computing is capable of addressing (Senyo, Addae, & Boateng, 2018).

Cloud computing is among the recent emerging information technology that embodies distinct characteristics which make it different from conventional information technology. : (1) Pervasiveness- Irrespective of location and time constraints, it is very easy to connect to the cloud for resources

through diverse networks, even in the lack of complex hardware facilities; (2) Flexibility- Cloud computing has the ability to respond to clients' business demand either by compression or expansion of relevant IT resources like storage, CPU, bandwidth etc.; (3) Scalability- Extension or enlargement of application software and hardware coupled with rapid deployment is possible for both new and old businesses; (4) Resource Sharing- Cloud computing permits the distribution of computing and preserving resources to some customers from a pool of resources that are available at the other end of the cloud; (5) Pay per use- Users can make use of cloud service according to their own practical use to the extent required, and as such are charged based on the amount of space used (Bhattacharjee & Park, 2014; Marston, Bandyopadhyay, Zhang & Ghalsasi, 2011; Son, Lee, Lee & Chang, 2014; Yu, Li, Li, Zhao & Zhao, 2018).

Cloud computing is made up of three major implementation or service models namely Software as a Service (SaaS), Infrastructure as a Service (IaaS) and Platform as a Service (PaaS). In SaaS, applications are made available or rented out by service providers via the internet. This is different from conventional information technology solutions where there is a need to download and install applications (Jain and Bhardwaj, 2010; Khajeh-Hosseini, Greenwood, Smith, and Sommerville, 2010; Sultan, 2010; Wu, 2011). In IaaS, based on consumer's capability, storage, processing, networks, and other vital computing facilities are provided to enable the consumer to easily run and deploy random software applications (Bruque-Cámara, Moyano-Fuentes, & Maqueira-Marín, 2016; Mell and Grance, 2011; Ryan and Loeffler, 2010). In PaaS, developers' applications similar to the traditional desktop settings are offered by service providers. This empowers IT staff and independent software vendors to develop and deploy online applications with speed making use of third-party infrastructure (Raut et al., 2017).

It is worthy to note that the service rendered by cloud is becoming enriched with more diverse services like: (1) Acceleration as a Service (AaaS) has been proposed to provide acceleration provided by GPUs. Although it is expected that AaaS will become more mature as more hardware accelerators are used by more applications (Varghese and Buyya, 2018). (2) Another aspect of service rendered by cloud that is becoming more popular is Container-as-a Service (CaaS) (Pahl, 2015; Arnold, Baset, Dettori, Kalantar, Mohamed, Nadgowda, Sabath, Seelam, Steinder, Spreitzer & Youssef, 2016). CaaS enables the deployment and management of containers that is needed for performing workload in micro clouds and ad-hoc clouds for fog computing and free offering computing opportunity consecutively. (3) Lastly, Function as a Service (FaaS) has also emerged. It is useful when event based platforms are adopted that do not make use of server computing. The goal is to perform functions on the events- initiated cloud platform (Varghese & Buyya, 2018).

Cloud computing is made up of four forms of cloud namely private, public community and hybrid and are further explained by (Bruque-Camara et al., 2016; Das, Patnaik and Misro, 2011; Marston et al. 2011; Kim, Kim, Lee and Lee, 2009; Raut et al., 2017) as the following- (1) Private Clouds can be used by various departments or sections of the organisations and are configured inside the firewall of the organisation. (2) Public Clouds are configured outside the organisation's firewall. (3) Community cloud is a type of cloud meant purposively for special users from organisations that share a common interest. (4) Hybrid clouds is the combination of either the public, private or community cloud. These clouds are used to handle massive demands known in advance; their use for sensitive data handling is well documented and it is estimated that 63% of enterprises that have adopted cloud are hybrid cloud users (Varghese and Buyya, 2018; Xu & Zhao, 2015).

Although cloud computing may not be a completely novel technological term, its articulated commercial activities could be traced to 2000 and it literally provides information technology solutions as a service rather than as a tangible product through the internet (Senyo, Effah and Addae, 2016; Senyo et al., 2018). Cloud computing permits access to a convenient, universal network, integrated computational resources like applications, storage, networks, services and servers that can be harnessed and enabled to quickly release with minimal effort from management or service provider interactions (Mell & Grance, 2009, 2011). It provides enterprises the power to innovativeness and market share position in global market by reducing investment costs and IT related work maintenance (Khorshed, Ali and Wasimi, 2012; Mourtzis and Vla-Chou, 2016).

Cloud computing transforms typical manufacturing business models, enhances the provision of complete product lifecycle management process, configures business strategy with product innovation and fosters productive collaborations (Lu, Xu and Xu, 2014). Priyadarshinee, Raut, Jha, and Kamble (2017) additionally asserted that cloud computing benefits businesses through, performance growth, enhanced storage ability and simple accessibility globally and it could be helpful to SMEs in their early business development stage. Cloud concept has a fruitful future for IT industry; it brings about change in other industries and its usage has increased tremendously in popularity for both private and public businesses (Son, Narasimhan, and Riggins 2005; Ooi et al., 2018). By year 2020, the direct and indirect expenditure toward cloud computing systems transition would be more than \$1 trillion and this is responsible for the strong competition going on among well-established companies providing cloud service like Microsoft, Salesforce, Amazon, and Google for a share in this estimated revenue (Gartner, 2016; Senyo et al. 2018). Cloud computing from the theoretical perspective offers massive benefits and chances for all existing businesses, including SMEs, to put in place versatile business models. Additionally, Gamage (2019) asserts that Cloud Computing is surely becoming popular with SMEs and will shortly be considered as an integrated part of formulating their business strategy.

Practically, cloud computing is generating a lot of debate about enterprises' adoption and enterprises' handling sensitive data, however, at the initial stage, cloud computing adoption by businesses seemed very easy (Khajeh-Hosseini et al. 2010; Kim et al. 2009; Saedi & Iahad, 2013). Various models, frameworks and theories have been introduced for clarifying new technologies adoption like cloud computing, internet and diverse IT solutions by users and these models, frameworks and theories have attempted to present factors capable of influencing acceptance of users i.e. Technology Acceptance Model (TAM) (Davis, Bagozzi and Warshaw, 1989), Diffusion of Innovation Theory (DOI) (Rogers, 2003), Theory of Planned Behaviour (TPB) (Ajzen, 1985), Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975), Motivational Model (MM) (Davis, Bagozzi and Warshaw, 1992), Unified Theory of Acceptance and Use of Technology (UTAUT) (Vankatesh, Morris and Davis, 2003), Model of PC Utilization (Thompson, Higgins and Howel, 1991), Social Cognitive Theory (SCT) (Bandura, 1986), Technology- Organisation- Environment (TOE) framework (Tornatzky and Fleischer 1990) and others.

METHODOLOGY

This study is a review of literature related to factors influencing adoption of cloud computing in SMEs. The literature review process started by searching scholarly articles from journals and conferences in electronic databases such as ScienceDirect (Elsevier), Emerald Insight, ACM digital library and Scopus from 2012 to 2019. At the end of the search, 26 articles emphasize cloud computing adoption study, however only 18 of them are related to SME and qualified for this literature review. The studies are summarized in the following section.

FINDINGS

Doherty, Carcary, & Conway (2015) conducted an exploratory study on 95 SMEs to determine the factors driving adoption among SMEs in Ireland. Cost reduction was the key driver of cloud computing adoption.

Espadanal and Oliveira (2012) survey 249 SMEs in Portugal found that top management support, relative advantage and technology readiness are major factors that influence cloud computing adoption.

Gupta et al. (2013) surveyed 211 SMEs from APAC region found that security and privacy, ease of use and convenience are the two top most conditions for SMEs to adopt cloud computing, followed by cost savings/reduction.

Oliveira, Thomas, and Espadanal (2014) identified factors determining cloud computing adoption in manufacturing and service sectors of SMEs in Portugal as cost savings, security and privacy, complexity, technology readiness, top management support, compatibility, competitive pressure, firm size and regulatory support.

Lin & Chen (2012) survey IT professionals in Taiwan and discovered that compatibility, business needs, relative advantage and Information Technology (IT) development environment were significant factors affecting cloud computing adoption decision.

Low, Chen, and Wu (2011) carried out a study on cloud computing adoption among high-tech firms in Taiwan and revealed that competitive pressure, top management support, firm size, trading partner's pressure and relative advantage were the significant factors affecting cloud computing adoption.

Alshamaila, Papagiannidis, and Li (2013), studied the process of cloud computing adoption on 15 SMEs located in England's north-eastern area and listed innovativeness, industry, market scope, uncertainty, compatibility, geo-restriction, trialability, relative advantage, prior experience, supplier efforts, external computing support, top management support and size are significant factors.

Sobragi, Maçada, and Oliveira (2014) studied a big, a medium-sized and a small retail organization in mobile marketing organisation and IT Services organisation respectively in Brazil to ascertain the factors impacting cloud computing adoption found that reliability, scalability, cost savings and security and privacy are relevant factors that affect cloud adoption.

Arvanitis, Kyriakou, & Loukis (2017) compared the North and South European firms including SMEs on the reasons why they adopt cloud computing. They used interview from 676 ICT managers in enterprises in France, Germany, Poland, UK, and Italy. They concluded that the Northern European firms are majorly affected by innovation facilitation and external collaboration, while the Southern European firms are affected most by cost reduction.

Priyadarshinee et al. (2017a) surveyed 101 firms in India and found that showed that sharing and collaboration, security and privacy, organizational risk, confidentiality, and integrity are the sub-criteria that have a significant impact on cloud computing adoption success.

Priyadarshinee et al. (2017b) gathered data from 660 professional experts. The study found that trust, perceived Information Technology (IT) risk and management style are the most significant cloud computing adoption predictors.

Kumar, Samalia, & Verma (2017) surveyed 285 SMEs owners. The result of the study revealed that competitive pressure, perceived concerns, top management support and perceived benefits were significant factors.

Raut, Priyadarshinee, Gardas, & Jha (2018) analyze the factors affecting cloud computing adoption in the context of India private sector. Their results confirmed that innovativeness, utilization of internal resources, assurance of data privacy, reduction of internal systems availability and previous experience were the most significant five variables with strong driving factors.

Alkhater, Walters, & Wills (2018), conducted an empirical study to unravel the factors influencing adoption of cloud computing among private organizations in Saudi Arabia. They found that trust and quality of services had the most profound effect on cloud computing adoption.

The study of Al-Shboul (2018) sought to better understand logistical factors determining SMEs' cloud ERP adoption in ten developing countries of Oman, Turkey, Saudi Arabia, Jordan, Bahrain, Qatar, Egypt, UAE, Kuwait and Lebanon found that compatibility, competitive pressure, readiness of enterprise, technology readiness, technical barriers, top management support had a significant impact on cloud ERP adoption.

Finally, Gamage (2019) directed her research on unravelling the determinants of cloud computing adoption among SMEs in Sri Lanka. Relative advantage, complexity, training and education, top management support, competitive pressure and trading partner support were discovered to be the significant determinants.

DISCUSSION

Based on the above findings, generally, studies conducted on SMEs to adopt cloud computing have been seen from the internal and external factors of SME organizations. This research has categorized cloud computing adoption factors from the internal and external perspectives into four major factors namely (internal) Management decision, Cloud application ability; (external) Survival and Contribution to competitive advantage. The table below presents these four major factors and other sub-factors they comprise of with a subsequent detailed explanation of how these factors are interrelated.

Table 1: Summary of major factors of cloud computing adoption by SMEs

Major Factors Identified	Sub-factors and literature sources
1. Management decision	Management support (Espadanal and Oliveira, 2012; Oliveira et al., 2014; et al., 2011; Alshamaila et al., 2013; Kumar et al., 2017; Al-Shboul, 2018; Gamage, 2019). Management style (Priyadarshinee et al., 2017b).
2. Cloud application ability	Technology readiness (Espadanal and Oliveira, 2012; Oliveira et al., 2014), Ease of use/ Convenience / Complexity (Gupta et al., 2013; Oliveira et al., 2014; Gamage, 2019), Data security/ Privacy/ Confidentiality/ Integrity (Gupta et al., 2013; Oliveira et al., 2014; Sobragi et al., 2014; Priyadarshinee et al., 2017; Raul et al., 2018), Compatibility (Oliveira et al., 2014; Lin and Chen, 2012; Alshamaila et al., 2013; Al-Shboul, 2018) Scalability and Reliability (Sobragi et al., 2014).
3. Survival	Competitive pressure (Oliveira et al., 2014; Low et al., 2013; Kumar et al., 2017; Gamage, 2019), Trading partners influence (Low et al., 2013; Gamage, 2019) , Regulatory support (Oliveira et al., 2014), Market scope, Geo-restriction (Alshamaila et al., 2013).
4. Contribution to competitive advantage	Relative advantages (Espadanal and Oliveira, 2012; Lin and Chen, 2012; Low et al., 2012; Alshamaila et al., 2013; Gamage, 2019), Reduction of costs (Doherty et al. , 2015; Oliveira et al., 2014; Sobragi et al., 2014; Arvanitis et al., 2017) Trialability (Alshamaila et al., 2013), Scalability (Sobragi et al., 2014), Sharing and collaboration (Arvanitis et al., 2017 ; Priyadarshinee et al., 2017; Raut et al., 2018), Utilization of internal resources (Raut et al, 2018).

The decision maker of cloud computing adoption in SMEs are the owner or the top management of the business. Therefore many researchers have put their effort to consider the decisions to adopt cloud computing from the company's top management perspective. Therefore, management style or support is one of the focus of the studies. The studies that have been trying to see from this point of view have listed management support (Espadanal and Oliveira, 2012; Oliveira et al., 2014; et al., 2011; Alshamaila et al., 2013; Kumar et al., 2017; Al-Shboul, 2018; Gamage, 2019) and management style (Priyadarshinee et al., 2017b) as the most significant factors influencing the adoption of cloud

computing. Top management support and management style are very important in the decision to adopt cloud computing. Even if external factors are present, the top management team still has the prerogative to adopt cloud computing (Yigitbasioglu, 2015). The style of management and their support are vital in deciding whether to adopt cloud computing or not (Oliveira et al., 2014; Priyadarshinee et al., 2017b).

The term management support and style above require further detailed explanation. Logically, any top management is unlikely to support any purchase or use of paid cloud computing application that is unable to perform its basic duties or may put organization at risk (Priyadarshinee et al., 2017; Raut et al., 2018) after implementations. Additionally, a management style that is strategically rigid may not favor the adoption of cloud computing that is likely going to disrupt traditional operations (Shah, Palacios, & Ruiz, 2013). Researchers who look at cloud computing adoption from this perspective have listed factors related to the features and quality of the cloud application itself (Alkhatir et al., 2018) such as technology readiness (Espadanal and Oliveira, 2012; Oliveira et al., 2014), ease of use/ convenience / complexity (Gupta et al., 2013; Oliveira et al., 2014; Gamage, 2019), data security/ privacy/ confidentiality/ integrity (Gupta et al., 2013; Oliveira et al., 2014; Sobragi et al., 2014; Priyadarshinee et al., 2017; Raul et al., 2018), compatibility (Oliveira et al., 2014; Lin and Chen, 2012; Alshamaila et al., 2013; Al- Shboul, 2018) scalability and reliability (Sobragi et al., 2014) in their studies. Management that does not support cloud adoption or does not practice flexible management style is more likely to be particular about the ability of the cloud application to deliver effectively and efficiently. Such management may not make provision for technology readiness of cloud computing, complain about the security issues of cloud computing (Submaranian & Jeyaraj, 2018), emphasize the incompatibility of cloud with their existing business processes (Gutierrez, Boukrami, & Lumsden, 2015), doubt the scalability ability of cloud computing (Sobragi et al., 2014) and finally question cloud's reliability.

Concurrently, some researchers have also tried to explain this issue from the external factors of the organization. These researchers view that there are external forces that raise the feelings of urgency of the SMEs' top management to adopt cloud computing in order to carry out tasks and solve problems they face daily in their business to survive. Survival is a key external basis for adopting innovation like cloud computing. Among the survival factors that have been identified as a driving force for adopting cloud computing are competitive pressure (Oliveira et al., 2014; Low et al., 2013; Kumar et al., 2017; Gamage, 2019), trading partners influence (Low et al., 2013; Gamage, 2019) , regulatory support (Oliveira et al., 2014), market scope, geo-restriction (Alshamaila et al., 2013). To survive and continue to exist, SMEs are more likely to adopt cloud computing when their competitors adopt the technology and when their trading partners impress on them. Also, government protects small businesses from premature industrial exit by supporting them to adopt cloud computing (Raut et al., 2017). Further, SMEs will adopt cloud computing because it makes them to continue to survive by enabling their businesses to operate beyond a limited market scope and geographical location (Alshamaila et al., 2013).

Lastly, researchers have been able to explain how SMEs could gain competitive advantage by adopting cloud computing as their internal resource and deal with external forces in their battle to be profitable and grow. Among the explanations of how cloud computing could enhance competitive advantage is by providing relative advantages (Espadanal and Oliveira, 2012; Lin and Chen, 2012; Low et al., 2012; Alshamaila et al., 2013; Gamage, 2019), reduction of costs (Doherty et al. , 2015; Oliveira et al., 2014; Sobragi et al., 2014; Arvanitis et al., 2017) trialability (Alshamaila et al., 2013), scalability (Sobragi et al., 2014), sharing and collaboration (Arvanitis et al., 2017 ; Priyadarshinee et al., 2017; Raut et al., 2018), utilization of internal resources (Raut et al, 2018). Competitive advantages could be gained when cloud computing offers relative advantages over traditional IT through pervasiveness, per-per-use and flexibility (Yu et al., 2018). Additionally, competitive advantage could be gained when the relative advantages of cloud computing could also be observed through trialability. Reduced cost of operations, coupled with scalability of operations, sharing and collaboration and utilization of internal resources make SMEs to gain competitive advantage over their competitors by adopting cloud computing.

CONCLUSION

Based on the above discussion, the analysis of literature has concluded that the decision to adopt cloud computing in small and medium-sized businesses is mainly the right of the top management who are continuously attacked by external environmental forces. The cloud computing application needs to prove its quality and reliability so that top management or SME owners are confident that the cloud computing application can solve business problems and work well without any problems in the future. SMEs adopt cloud computing to be able to survive and gain competitive advantage by concurring to external influence and leveraging on competitive features of cloud computing.

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THE ROLE OF ATTITUDE, KNOWLEDGE, SKILLS ON NON-ACADEMIC STAFF PERFORMANCE: A CASE OF HIGHER EDUCATION INSTITUTIONS.

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Abstract

Employees tend to perform better or remain in their position longer if their attributes fulfill the demands of their situation. Therefore, the development of the required skills on employees will guarantee effective performance and maintain them in their roles within the organization for longer, and this will result in a particular organization's achievement. This document, therefore, evaluates the ability of employees within a higher education institution. The purpose of the study was to identify the attitudes of employees in higher education institutions on their skills against their personalities and to determine the number of skills attained. A quantitative approach was introduced to reach the goals of this study by submitting 151 questionnaires. PLS-SEM was used to analyze the data collected. The results demonstrated that respondents need expertise to be collected in diverse areas such as skills, knowledge, and attitude linked to a significant part of employee performance.

Keyword: Attitude; Perspective from Non-Academic Staff; knowledge; Skills, Employee Performance

INTRODUCTION

Organizations need to be continuously involved in some planning to compete with the future, either inactive or passive way (Noe, Hollenbeck, Gerhart, & Wright, 2017). One of the critical components of organizations' growth and success is to identify and retain talents. On the other hand, entities who employ people to operate must replace people when they are gone, and this considered as a great challenge for most organizations (Sinha & Sinha, 2012). Since recruitment falling short in solving the overall problem, organizations have increasingly strived to advance and device succession planning strategies as a means of ensuring high qualified employees who are recruited and developed to fill every long-term strategic role within the organization. Competency considered as a logical basis for an integrated with human resource policy (Fugate, Kinicki, & Ashforth, 2004). In recent years, a competency-based approach in human resource management has accomplished through the capability that surrounds knowledge, skills, abilities, traits, and behaviors to allow a person to perform a task in a job. This has increased the importance of competency and its managerial role in succession planning programs.

Additionally, succession planning and competency skills anticipate required changes in the organization and prepare the talent pool to meet the future needs of the organization rather than replicating what the organization has right now. Hence, it can indicate that succession planning is "future-focused" (Keegan, Ringhofer, & Huemann, 2018; Kulkarni, 2019). There is also very little evidence of higher education institutions involved in succession planning (Heuer, 2003). Although there is broad consensus in the literature about the importance of training adequate staff, there is still a scarcity of research in the area of higher education leadership landscape in Malaysia (Zaini Abdullah et al. 2009). If this is indeed the case, higher education will have difficulty moving forward and meeting current challenges if we are continually replacing staff with others who are just as unsuitable. This lack of suitable staff will create a considerable cost in terms of resources and time for a higher education institution, but also to cope with low morale staff.

Therefore, the overwhelming of the study here is to map the impact of skills, knowledge competency, and attitude on non-academic staff performance in higher education institution and strategies to improve the crucial role in the sustainable return of the organization. The challengers of staff development and succession planning in organizational are known as a fundamental factor in the success of any organization; this study has focused on a higher education institution to propose an

implemented competency model as an ultimate model in this organization. This will result in to reorganize and rationalize the higher education non-academic staff to be operational excellence within the organization. However it has been increasingly observed that the non-academic staff of higher education institution has faced with challenges in lack of skills and implementing their given job efficiently (Adnan, Kareem, & Abd, 2019; Biygautane & Al-Yahya, 2011).

LITERATURE REVIEW

In past studies, researchers mainly focused on the different levels of the management, supervisors and the other highest positions in an organization to assess the employee competency (Friday, 2019; Hosseini, Pourkiyani, & Sheikhi, 2019; Payne, Hovarter, Howell, Draws, & Gieryn, 2018). Previous literature also categorized different management positions to provide maximum opportunities to individuals to gain seniority, extend skills so they can make themselves more compatible with organizational goals as a whole but not just departmental objectives (Byrd & Turner, 2001). Defined competence as a dedicated arrangement of abilities, proficiencies, or skills, which enables a person, or organization to act and react when completing concrete, familiar, or novel working tasks. Before, individual skill has been the real core interest. Managers can utilize comprehension of ability to manage enlistment, aptitude appraisal, execution assessment, and improvement exercises (Rowe, 1995). In late 90s competence ruled the management strategy literature until when the current thought emphasized "core competence" as a critical organizational resource that can be employed to lead to competitive advantage (Ng & Kee, 2018). This "Core Competencies" approach mostly perceived as the perplexing association of individuals, aptitudes, and innovations that drives hierarchical execution and addresses the significance of learning. Group capability is the information, talents, and dispositions required to be a trustful colleague. It is usually accepted individual ability adds to group procedures and developing states (Mathieu, Maynard, Rapp, & Gilson, 2008).

Several studies endorse individual competencies are critical for job effectiveness which ultimately turns into team success (Fulthorp & D'Eloia, 2015; Misra & Srivastava, 2018; Shet, Patil, & Chandawarkar, 2019) (Crawford, 2005). However, some researchers don't agree with the phenomena of that team competence is just a simple sum of individuals competence (Kauffeld & Lehmann-Willenbrock, 2012). Coworkers cooperate, share data, settle on combined choices, and work together to accomplish the mutual objectives (Kauffeld, 2006). These categories are to promote the theory of meta-competencies, higher-order skills, and abilities oriented toward being able to learn, adapt, anticipate, and create as a group. A team's problem-solving competency is one of the meta-competencies that can enable organizations to be flexible, deal with changed situations and adjust the team efforts quickly to achieve the team objectives (De Jong & Elfring, 2010; Hoegl & Parboteeah, 2006). Few other studies further categories competency in new types, which helpful for both individuals and organizations to develop competency skills. An organization which is classified as high uncertainty and complexity, problem-solving competence is significant, as a team, it is expected to handle these ongoing complex and variabilities. Working in a contentious team environment team learns and apply what they have learned from any decision-making activity (Jakábová et al., 2012).

Attitudes considered as an essential learning objective (Gagné, 1985; Krathwohl, Bloom, & Masia, 1956). They play a vital role in the domain to influence people the choice of affection (Ajzen, 1991). In social psychology, characters have been a significant subject of research for just about a century, yet discussions proceed about their legal definition. Definitions depending on a different number of aspects, e.g., attitudes are focusing on general or individually on a subject, secondly, positions alienated into "explicit and implicit attitudes," Thirdly, attitudes are more "context-specific or trait - Alike." They are using a very general definition to define attitude, but the results of that study failed to show any predictive values of attitude effect on real behavior (Wicker, 1969 in Ajzen, 1991). One proposed solution for this weak prescient legitimacy has been to inclusive practices crosswise over a wide range of circumstances. However, this does not clarify social inconstancy crosswise over conditions or grant any forecast of conduct in an event. In our discussion about "integration processes" "In a specific situation of work, it is necessary to link skills, Knowledge with professional tasks. We along these lines study dispositions as to increasingly explicit undertakings, yet don't deny that people may hold progressively broad frames of mind which impact a more extensive scope of job execution.

As mentioned previously, performance has a link with knowledge, behavior, and attitude. For this study, attitude, knowledge competence, and skill competence is an independent variable (IV) which is depending on knowledge and attitude, which play a role in enhancing the work performance of the individuals. "Employees performance" is a dependent variable (DV). Meanwhile, knowledge and attitude significantly play a role to enhance and transfer the skills. Based on the proposed model, the following hypothesis was tested:

- H1: Knowledge competence have a strong relationship with employee performance
- H2: Attitude has a positive relationship with employee performance
- H3: Skills have a positive relationship with employee performance

METHODOLOGY

The purpose of this paper is to identify the need level of competencies for the non-academic staff at the organization. The respondents were selected among the non-academic staff from different faculties in a higher education institution. Employee performance was measured by the scale provided by (Buil, Martínez, & Matute, 2019). The research focused on four components, which categorized as attitudes, knowledge competence, skills competency, and employee performance. Questionnaires were used as the data collection technique in this study, which is the most common tool for both educational and evaluation research. Surveys help the researcher to gather information on knowledge, attitudes, opinions, behaviors, and other data. In a review of 748 research studies, Radhakrishna et al. (2007) found that 64% used questionnaires. Methodical development of the survey for data collection is essential to reduce measurement errors-questionnaire content, questionnaire design and format, and respondent bias (Radhakrishna, 2007).

RESEARCH FRAMEWORK

In this section, the framework of this study is shown in figure 4.1. The focus of this study was to investigate the core components of the PEAKS model. This aspect is identified as a dependent variable (DV) and the three core elements of competency as the independent variable (IV).

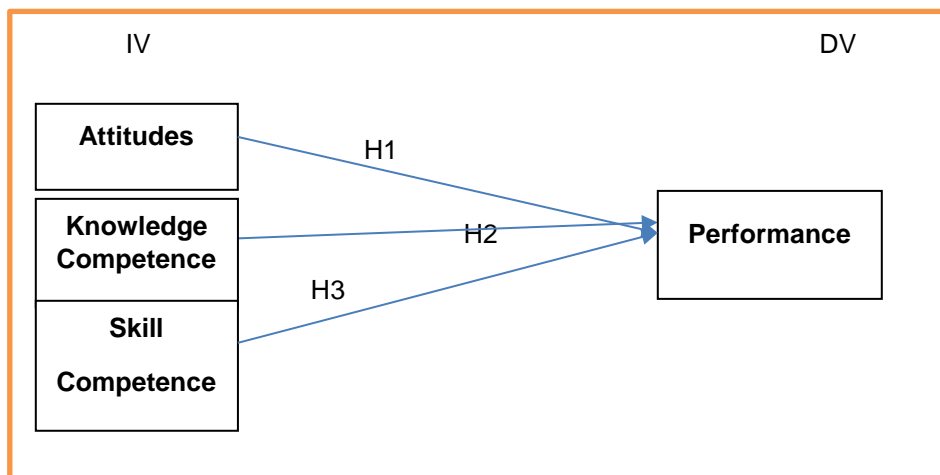


Figure 4.1: Conceptual Framework for this study

RESULTS

From the analysis, refer to table 4.0. Most of the respondents were female accounted for 68% of the total responses. Whereas male respondents were accounted for 32%. Majority of the respondents falls under the range of 40 years and above 37.0%, followed by age group between 35-39 years old 22.5%, least number of respondents were from the age group of 18-24 years old 7.1%. Based on qualification, most of the respondents hold Sijil Pelajaran Malaysia (SPM) 43.7% followed by respondents with Sijil Tinggi Pelajaran Malaysia 35.3%, and the least number of the respondents hold postgraduates studies 1.9%. In terms of income, 34.8% of the respondents were earning below

30,000, followed by 27.8% of the respondents earning between 31000-40000, and 8.6% of the respondents were earning more than 70000.

Table 4.0: Demographics (N= 151)

Variable	Description	Number of Respondents	%
Gender	Male	48	32.5
	Female	103	68.5
Age	20-24	12	7.1
	25-29	26	17.2
	30-34	23	15.2
	35-39	34	22.5
	40 and above	56	37.0
Level of Education	Postgraduate Degree	3	1.9
	Undergraduate Degree	7	4.6
	Diploma	22	14.5
	STPM	53	35.3
	SPM	66	43.7
Income (RM)	30000 and below	58	38.4
	31000-40000	42	27.8
	41000-50000	23	15.2
	61000-70000	15	9.9
	Above 70000	13	8.6

Convergent validity assesses the degree of correlation between the measurements in one construct (U. Sekaran & Bougie, 2010). To establish convergent validity, factor loading of the indicators, average variance extracted (AVE) and composite reliability (CR) should be considered (Hair et al., 2014). AVE, which is a mean-variance, obtained for the items loading on a construct, were all above the suggested value of 0.5 or higher (Hair et al., 2013). Therefore, this study found that the AVE of all the constructs fulfills the recommended cut-off value. Further, the results of this study, found the range of 0.76 to 0.98, as composite reliability, which surpasses the cut off value 0.7 (Nunnally, 1978). As shown in Table 4.1

Table 4.1: Cross Loadings

CONSTRUCT	AT	EP	KC	SK
ATT1	0.851	0.142	0.441	-0.120
ATT2	0.773	0.033	0.391	-0.056
ATT3	0.813	0.084	0.356	-0.176
ATT4	0.820	0.150	0.415	-0.159
ATT5	0.841	0.149	0.351	-0.053
ATT6	0.873	0.154	0.394	-0.093
ATT7	0.813	0.116	0.385	-0.101
EP1	0.131	0.877	0.291	-0.258
EP2	0.144	0.917	0.292	-0.206
EP3	0.134	0.887	0.348	-0.178
EP4	0.109	0.895	0.233	-0.241

EP5	0.131	0.899	0.314	-0.158
EP6	0.088	0.906	0.276	-0.208
KC1	0.413	0.263	0.894	-0.278
KC2	0.456	0.304	0.920	-0.280
KC3	0.453	0.278	0.901	-0.206
KC4	0.443	0.324	0.893	-0.266
KC5	0.400	0.260	0.916	-0.219
KC6	0.393	0.247	0.904	-0.232
SK1	-0.084	-0.219	-0.205	0.797
SK2	-0.118	-0.186	-0.200	0.811
SK3	-0.098	-0.188	-0.223	0.878
SK4	-0.097	-0.173	-0.221	0.828
SK5	-0.053	-0.173	-0.128	0.718

Recently Henseler, Ringle, and Sarstedt (2015) developed a new criterion for measuring discriminant validity. The authors using simulation studies demonstrated that in comparison to old criteria like Fornell & Larcker criterion and cross-loadings are inadequate in measuring discriminant validity. Therefore, Heterotrait-Monotrait Ratio of Correlations (HTMT) can assess discriminant validity more reliably. If the HTMT value is below 0.90, discriminant validity has been established between two constructs. Table 4.2. Shows that the discriminant validity of the model was established since all the results of the were below the critical value of 0.90. Overall, the measurement model demonstrated adequate validity and discriminant validity.

Table 4.2: Heterotrait-Monotrait Ratio Correlations (HTMT)

Construct	Attitude	Knowledge	Performance	Skill
Attitude				
Knowledge	0.668			
Performance	0.643	0.656		
Skill	0.739	0.703	0.433	

The path co-efficient of the hypothesized relationships in the proposed structural model and their respective standard errors are obtained by running PLS algorithm followed by the bootstrapping procedure in Smart PLS (version 3.0) as it provides all direct and indirect paths coefficients (β) along with their respective p and t values as well as confidence intervals. Table 4.3 and figure 4.2 represents the results of the immediate effect hypothesized relationships of this research. The endogenous construct employee performance has an R^2 of 0.48, suggesting that 48% (active) of the variance in the extent of employee performance can be explained by attitude (ATT), Knowledge competence (KC) and Skill Competence (SK). Furthermore, it also provides the p values, T-values, and confidence intervals for the entire indirect path ($a*b$) and protects the user from any wrong computations. The results revealed all of the hypothesis are accepted.

The present study evaluates the significant effect stated in the model of the research. The results of data analysis revealed that attitude has a relationship with performance as $\beta = 0.49$ at $p < 0.000$; therefore H1 was found to be supported. Knowledge competency also has relationship with performance as $\beta = 0.461$ at $p < 0.000$. Thus H2 was found to be supported. The data analysis also reveals that skill competency has a positive relationship at $\beta = 0.242$ at $p < 0.013$. Therefore H3 was found to be supported.

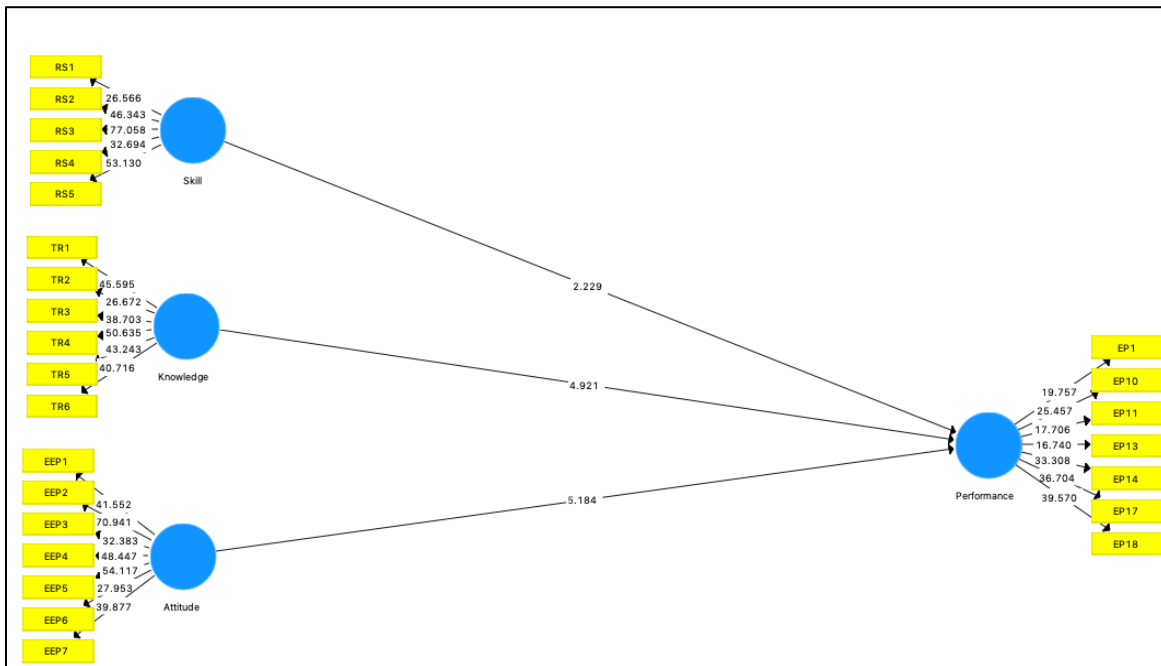


Figure 4.2: Measurement model of the study

This study is purely examining the relationship between Employee Performance (EP), Skills, Attitude, and Knowledge. As per the knowledge of the author, this is the very first research which primarily testing this hypothetical system in light of empirical evidence from HEI in Malaysia, adding to a superior comprehension of non-academic staff manageability in HEI in Malaysia. After reviewing the model, it indicated that if employees get proper “skills elements,” then it leads to a definite increase in EP. Putting it in an unanticipated way, “if skills are extensively obtained and applied by employees, it increases EP noticeably” (Homer, 2001; Kantowitz, 2005). This finding is also supporting Weber, Finley, Crawford, and Rivera (2009), where the terms of decision making and problem-solving, EP is positively affected by skills. Tang et al. (2015) specifically in “higher education institutions” suggested that skills development should be compulsory in all “non academic macro-level management” in order to increase the effectiveness of high education institutions in Malaysia., this outcome repudiate the discoveries of Robert and Donald (2001), in which aptitudes competency demonstrated not to have genuinely contributed significantly to hierarchical improvement. In this study, it is noticed that increase one unit in the predictors of the EP, i.e., “Skills, Attitude, and Knowledge competency” will lead to a 48% increase in EP. Hence, we can conclude that to increase the EP; employees need to engage in enhancing their “interpersonal skills, problem-solving skills, communication skills, leadership skills” which will develop positive behavior and attitude which will lead to increase EP work.

DISCUSSION AND CONCLUSION

This paper bridges the leadership and organizational change literatures by exploring the relationship between top management leadership competencies (namely, their effectiveness at person-oriented and task-oriented behaviours) and the likelihood that they will emphasize the different activities involved in planned organizational change implementation namely: communicating the need for change, mobilizing others to support the changes, and evaluating the change implementation. Therefore, the main objective of this study was to identify the non-academic staffs’ perceptions on the level of importance of the competencies and to determine the level of achieved skills of non-academic staff at HEI. Our results lend overall support to the proposed model. This finding suggests that treating planned organizational change as a universal phenomenon might mask important idiosyncrasies associated both with the different activities involved in the change implementation process and with the unique functions that leadership competencies might play in the execution of these activities.

Even though studies have shown that all the employee's work performance such as an increase in productivity is influenced by hard skills (technical and job-related skills), however, this study has proven that skills, knowledge competency and attitude will directly affect employee work performance. Theoretically, it can conclude that if organizations plan to develop their employees in the area of skills, knowledge competency, and attitude, they should consider seriously their work performance improvement positively. Furthermore, this study has established that the combination of the skills, knowledge competency and attitude directly influence work performance. From the findings of this study, the researchers drew the following:

IMPLICATIONS FOR RESEARCH AND PRACTICE

The present research findings have highlighted several consequences of skills, knowledge competency, and attitude, thus extended the literature employee performance. It is disagreeable that the insights derived from this study about skills, knowledge competency, and attitude and work performance will be sufficient by themselves to bring about transformations desire by mid-level managers in higher education institutions as described in this study. Therefore, research and practice must be linked together to serves the interest of employees and that of management. In the context of this study, the research implications would focus on the establishment and use of theory-based training for improving skills, knowledge competency and attitude among employees. Understanding employees' skills, knowledge competency, and attitude that will promote work performance can be part of the policy or direction of an organization. As for the skills syllabus/curriculum, the organization can identify the skills areas that contribute most to the employees' work performance; rather than focus on the (technical or job-related) types of training. The focus should be on skill-building, mindset, attitude, and behavior change development for the employees, and not just acquiring the knowledge.

LIMITATION AND RECOMMENDATIONS

The limitation of this study is that the researcher only higher education Institutions. Also, the selected private companies were mainly in sales and service domains. To this end, the researchers are not able to rationalize the outcome findings to all types of organizations. The positive results linked to skills in this study are partial to higher education institutions. Future research could explore skills, knowledge competency, and attitude in other types of organizations, such as public/government organizations and manufacturing companies.

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IMPACT OF HUMAN RESOURCES MANAGEMENT PRACTICES ON EMPLOYEE PERFROMANCE IN THE INDUSTRIAL GAS SECTOR IN MALAYSIA: THE MEDIATING EFFECT OF EMPLOYEE ENGAGEMENT

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Abstract

The various manufacturing and service industries and sectors in Malaysia such as electronics, medical, oleo-chemicals, petrochemicals, food and automobile are heavily dependent on the supply of industrial gases for their production and service applications and to ensure that products that are manufactured and services provided meet the highest quality standards. The industrial gases that are generally supplied in huge quantities to support these industries and sectors include argon, helium, hydrogen, nitrogen and oxygen. The supply industrial gases to both these sectors here in Malaysia is supported by the establishment of three (3) main industrial gas companies with an annual combined turnover of USD400 million as of 2014. Being the critical path of the overall supply chain with zero interruption expected, these industrial gas companies must operate large industrial gas complexes with both direct and indirect involvement of its employee to ensure continuous operations at low cost. Human capital has a crucial role and the success of these industrial gas companies to support the marketplace is paramount to the performance of their employees. In order to ensure that employees continuously perform, organization implement a range of human resource management practices. The present study aims to identify the impact of these human resource management practices (HRMP) on employee performance. These HRMP are recruitment and selection, employee training and development, employee empowerment and involvement, personal career development and employee performance appraisal. An important theoretical contribution to this study is the inclusion of employee engagement (EE) as a mediating factor which will attest if employee engagement influences the relationship between HRMP and EE. The underlying theory applied in this study is social exchange theory (SET). A quantitative research method was applied using self-administered questionnaires. The findings of this study indicate that there is a positive and significant relationship between human resource management practices and employee performance. In addition, the findings attest that employee engagement has an influence the implementation of these human resource management practices to employee performance. The board of directors and management of these industrial gas companies are encouraged to emphasise the implementations of these human resource practices to enhance employee performance in their respective organizations.

Keywords: Human Resource Management Practices, Employee Performance, Industrial Gas Sector in Malaysia, Social Exchange Theory (SET), Employee Engagement

INTRODUCTION

Organizational success now depends on sustaining the business through people (Boudreau & Ramstad, 2005). In a competitive environment, organizations are faced with dynamic business requirements from changes and advancement in technology to the requirements to upgrade its human capital in line to its business strategies and hence, remain competitive. It is acknowledged that human resources management function within an organization is seen as a key intensive component to driver human capital enhancement and propel the organization towards attaining its performance goals and out performing its competitors (Allameh, Barzoki, Ghazinour, Khodaei and Abolghasemian, 2014). Human resource (HR) management is a specialized field in social sciences and supports employees' movements in organizations to enhance their participation in industrial, organizational and social physiological developments has been quite essential (Thite, Kavanagh and Johnson, 2012). In organizations, the general administrative practices are associated and connected to Human Resource Management Practices (HRMP) with creating and synchronizing a holistic

workforce (Malik and Robina, 2015). In order to fulfil the progressive goals of the employees in the organization, HRPs are designed in a manner to manage the HRM function effectively and it is imperative that this HRM functions are taken advantage off by organizations (Wright and Snell, 1991). Academicians have contended if HRMP are effectively managed, can be a function within an organization to propel development of a favourable organizational climate that enhances and stimulates desired employee behaviours, leading to enhanced employee and organizational performance in general (Karim and Majid, 2017; Llopis and Foss, 2016). HRMP practices are significant and potent contributing factor in the employee performance (Jouda, Ahmad and Dahleez 2016; Karatepe 2013; Malik & Rubina 2015). With regards to the direct relationship between human resource management practices and employee performance, past several studies have confirmed that there exists a positive and significant relationship between them (Bhatti & Qureshi, 2007; Garg & Sharma, 2015; Jouda, Ahmad, & Dahleez, 2016; Kuvaas, 2006; Malik & Rubina, 2015; Munjuri, 2011; Shahzad, Bashir & Ramay, 2008; Singh & Mohanty, 2012; Tabouli, Habtoor & Nashief, 2016).

Over the past decade, employee engagement (EE) has been the most researched topic and draws attention among both practitioners and academicians due to its results in the form of organizational and personal effectiveness (Anitha, 2014; Gupta & Sharma, 2018). Academics are increasingly acknowledging the fact that HRMP are crucial activities to stimulate and propagate EE (Akhtar, Nawaz, Mahmood, & Shahid, 2016; Aybas & Acar, 2017; Huang, Ma, & Meng 2018; Karim & Majid, 2017; Presbitero, 2017). Previous studies have atoned that EE serves as a mediating factor in the relationship between HRMP and employee performance (Karatepe 2013; Malik & Rubina 2015; Taib, Saludin and Hanafi, 2019). EE is chosen as a mediator to reflect the fact that engaged employees perform better when organizations take the initiative to identify and implement human resource management practices (Garg & Sharma, 2015). HRMP is an important component and contributes extensively to the enhancement of human capital in organizations and this importance and contribution cannot be overemphasized. The enhancement of human capital via the implementation of HRMP, leads to increased and sustainable competitive advantage for the organization (Khan 2010).

The context of this research is the industrial gas industry in Malaysia. The industrial gas industry comprising industrial companies has been rooted in Malaysia since the 1960s. With the onset of foreign direct investment (FDI) in Malaysia, mostly from the US and Germany, many new companies had requirements for inert gases such as nitrogen and argon to aid their manufacturing processes to improve efficiency, quality and after that, the yields. As of 2014, the total industrial gas business is worth USD400 million. The objective of this research is to study the impact of HRMP on employee performance (EP) in the industrial gas industry in Malaysia with the mediating role of EE. The underlying theory used in this research is Social Exchange Theory (SET) Social exchange theory is among the most potent conceptual paradigms for understanding workplace behavior. The central properties of social exchange theory are self-interest and interdependence (Lawler & Thye, 1999) while rewarding actions, and this can be achieved when parties in question enter and maintain relationships with others (Blau, 1968; Gouldner, 1960).

LITERATURE REVIEW

Employee Performance (EP)

Within an organization, performance can be categorized for both job and employee (Otley, 1999). In the organizational context, employee performance signifies an individual's work accomplishment and is associated with the extent to which the employees' contributions reflect achieving the organizational goals by exerting the required effort on the job and these contributions make employees the primary source of competitive advantage in organizations (Hellreigel, Jackson, & Slocum, 1999; Karakas, 2010; Luthans & Stajkovic, 1999; Pfeffer, 1994). Such exerted effort by the employees will ultimately contribute to the overall performance of the organization (Huselid, 1995; Otley, 1999). Organizations and researches have placed great importance on employee performances relating to their jobs (Tabouli, Habtoor & Nashief, 2016), and this has led to them to seek various means to either enhance or improve employees' performances. According to (McCloy, Campbell, & Cudeck, 1994), job performance is defined as a variable having multiple dimensions and distinct components and

elements according to the required job and is related to employees' behaviors or actions related to aims or goals of the organization, while Porter and Lawler (1968) argue that attitudes impact performance. The behavior here signifies the activities employees undertake to complete the task (Campbell, 1990) while Ilgen and Schneider (1991) state that performance includes judgments and evaluation process as well. Meanwhile, according to Borman and Motowildo (1993), a behavioral engagement that involves employees' persistence, effort, attention, participation, and involvement is related to expected consequences or outcomes. Past researchers have argued that job performance is a variable having several dimensions reflecting not only tasks but also interpersonal and motivational components (Campbell, 1990; McCloy, Campbell, & Cudeck, 1994). In this research, employee performance is a multi-component concept (Pradhan & Jena, 2017), categorized into task, adaptive, and contextual performances.

Task or in-role behavior performance refers to finishing task and duties that contribute directly or indirectly to the technical core of the organization or mechanisms by which the organization produces its goods and services (Broman & Motowildo, 1993; Reilly & Aronson, 2009) and these task or duties are aligned to established job functions and formal job descriptions (Williams & Anderson, 1991). The next category of EP is referred to as adaptive performance and is defined as the ability of an employee, in a dynamic environment, to adapt and provide support to the job profile (Neal & Hasketh, 1999) by changing his or her behavior in response to a new task, event, condition or environmental (Pulakos, Arad, Donovan & Plamondon, 2000). The third category of employee performance is contextual performance and refers to the outcomes of behaviors that are required to support the social fabric of the organization (Witt, Kacmar, Carlson & Zivnuska, 2002).

Human Resource Management Practices (HRMP)

Human resource management practices are essential for the development of both employees and organizations (Hallberg & Schaufeli, 2006; Paul & Anantharaman, 2003). According to Pfeffer (1994), human resource management practices are critical to enhancing organizational competitiveness and achieving overall organizational performance. HRMP include selection and recruitment of human capital, employment security, participation and empowerment, information sharing, training and development, high wages and incentives, motivating and retaining employee and promotions to ensure long term sustainability of the organization (Sattar, Ahmad, & Hassan, 2015; Schuler & Jackson, 1987). By selecting, recruiting, and providing the necessary training and developments to the workforce, firms seek to quantify the return of investment on these workforces. At the same time, they simultaneously address the salient personal points of employees such as work-life balance, their need to attain ownership of their careers and overall development, leading to long term employee retention and a meaningful and useful successful planning process. Numerous studies have shown to determine the relationship between HRMP and EP (Arthur, 1994; Guest, 1997; Hassan, 2016; Huselid, 1995; Ilyas, Farooqi, & Ahmad 2016; Jouda, Ahmad, & Dahleez, 2016; MacDuffie, 1995; Marwat, Qureshi, & Ramay, 2006; Qudah, Osman, & Qudah, 2014; Shaukat, Ashraf, & Ghafoor 2015). Human resources practices can be adopted by organizations to improve employee skills and enhance motivation levels towards achieving organizational and personal goals (Munjuri, 2011).

In the context of Malaysia, with the focus on Vision 2020 and the ambitions to be a high-income nation, the Malaysia Government has taken great steps to recognize the importance of human resource management (HRM) and its role for achieving the Vision. In many successful companies in Malaysia, regardless of their size and industry focus, HRM as an integral part of the organization set up. Several studies have been conducted in Malaysia, focusing on private companies, that looks at the impact of HRMP on performance (Abdullah, Ahsan & Alam, 2009; Osman, Ho, & Carmen, 2011; Radmand & Batoie, 2013) while there have been researchers that focused on public universities (Qudah, Osman, & Qudah, 2013; Muslim, Khairuzzaman, Zaleha & Selemani, 2014).

Employee Engagement (EE) as a mediating factor

Over the past decade, EE has been the most researched topic and draws attention among both practitioners and academicians due to its results in the form of organizational and personal effectiveness (Anitha, 2014; Gupta & Sharma, 2018). There are several definitions of EE that has been provided. Kahn (1990, 1992) defines EE as "the harnessing of organizations members 'selves to their work roles; in engagement, people employ and express themselves physically, cognitively

and emotionally during role performances” and to be psychologically present when occupying and performing an organization role. Meanwhile, Anitha (2014) states that EE encompasses the level of commitment and involvement an employee exhibits towards their organization and its values. According to Maslach, Schaufeli, and Leiter (2001), engagement is characterized by energy, involvement and efficacy while Schaufeli et al. (2002) defines engagement “as a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, absorption, persistent and pervasive affective-cognitive state that is focused on any particular object, event, individual or behavior”. EE is essential for organizations since they face many challenges (Schaufeli & Salanova, 2007) and with these challenges, organizations can gain competitive advantage through EE (Macey, Schneider, Barbera, & Young, 2009).

EE is often touted as the key to an organization’s success and competitiveness (Gruman & Saks, 2011). The research by Saks (2006) indicates that engaged employees are more likely to have a high-quality relationship with their employer, leading to the employee to demonstrate positive attitudes, intention, and behavior while Kahn (1990) concludes that employees, who find their job respectful, meaningful and interesting, are likely to be involved and attached to their performance completely. This attachment results in the investment of employee physical, emotional, and cognitive energies. Meanwhile, Karatepe (2013) and Anitha (2014) conclude that when employee engagement, training, empowerment, and rewards are provided, employees are found to engage, and this leads to higher organizational and individual performances. Organizations employ EE tool as a means to gain a competitive advantage over their competitors, and it is an important point to measure an organization’s vigor (Baumruk, 2004). Katz and Kahn (1966), on the other hand, reiterated that organizational effectiveness is due to the concept of EE.

Although empirical findings have generally supported the notion that HRMP are related to both positive individual and organizational outcomes, researchers have lately sought to explore the mechanism through which human resources practices are connected to individual and organizational performances (Alfes, Shantz, Truss & Soane, 2013; Huselid, Jackson, & Schuler, 1997). Academics are increasingly acknowledging the fact that HRMP are crucial activities to stimulate and propagate EE (Akhtar, Nawaz, Mahmood, & Shahid, 2016; Aybas & Acar, 2017; Huang, Ma, & Meng 2018; Karim & Majid, 2017; Presbitero, 2017). In line with SET, operative and effective human resource practices are considered as an organization’s commitment towards employees, and these employees are expected to reciprocate with enhanced commitment and engagement (Garg, 2015).

Social Exchange Theory (SET)

This research is grounded in the SET. SET is among the most powerful conceptual paradigms for understanding workplace behavior. The central properties of social exchange theory are self-interest and interdependence, with both parties transacting and exchanging with one another to achieve outcomes that neither could achieve on their own (Lawler & Thye, 1999). SET was initially devised to account for the development and maintenance of interpersonal relationships but has since been applied to explain the nature of the employee–organization relationship (Cropanzano & Rupp, 2003; Settoon, Bennett, & Liden, 1996). SET basically rewards actions, and this can be achieved when parties in question enter and maintain relationships with others (Blau, 1968; Gouldner, 1960). It is expected that such a relationship will yield rewards. In the case of an organization, the parties concerned could be the employee and the employer (in any case represented by a manager). Both the employee and the manager have something of value that the other wants and decides to exchange. The value of resources exchanged can be both economic and social, or both. Saks (2006) states that the exchange involves reciprocity or repayment and that the actions of one-party result in a response or actions by the other party.

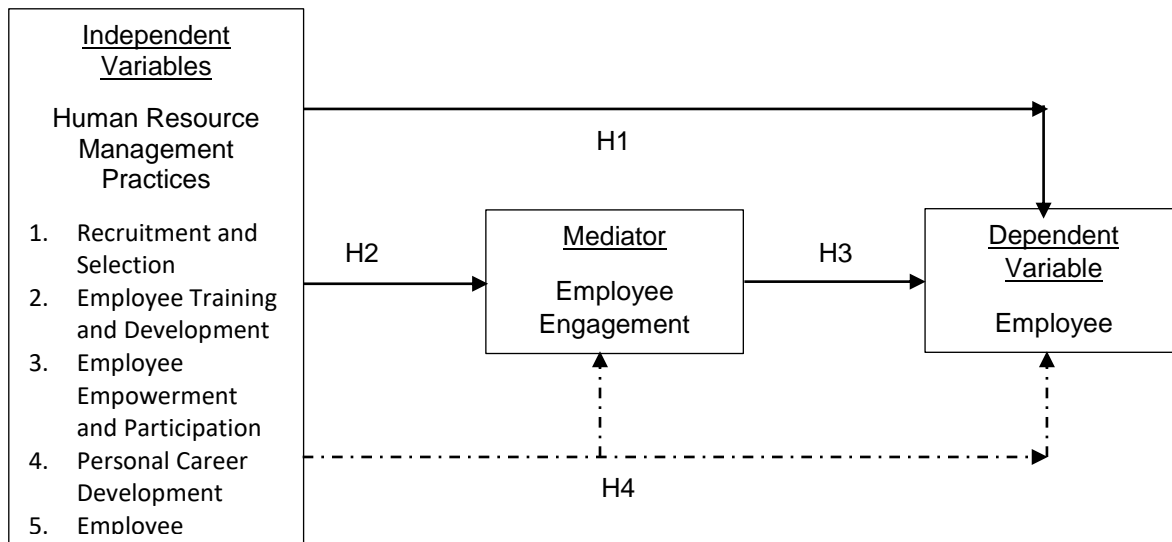
Further, in SET, employees and managers have a relationship that advances over time and is highlighted by mutual trust, commitment, and loyalty. However, to achieve this state, both parties, e.g. managers and employees must adhere to certain laws of exchange, and once these exchanges in relationships are attained, there is a rise in positive employee and organizational performance

(Cropanzano & Mitchell, 2005). Employees who are taken care of by their employers tend to feel obligated to repay the organization in various ways (Karatepe, 2013). Employees feel obligated to 'repay' their organizations through improved work performance when they feel that their organization is committed to providing personal development (Coyle-Shapiro & Conway, 2004; Eisenberger, Fasolo & Davis-LaMastro, 1990; Lee & Bruvold, 2003). The relationships between managers and employees can be categorized as either economic or social, where economic relationships are tangible and short-term while social relationships are close personal attachments and are open-ended obligations (Cropanzano, Rupp & Byrne, 2003)

CONCEPTUAL FRAMEWORK

The proposed research framework shown in Figure 1.

Figure 1: Research Framework



Based on the literature review above the following hypotheses is proposed:

H1 – Human resource management practices (HRMP) have a positive and significant impact on employee performance (EP).

H2 - Human resource management practices (HRMP) have a positive and significant impact on employee engagement (EE).

H3 – Employee engagement (EE) has a positive and significant impact on employee performance (EP).

H4 – Employee engagement (EE) mediates the relationship between human resources management practices (HRMP) and employee performance (EP).

METHODOLOGY

This research will be conducted on employees of the industrial gas sector in Malaysia. Three industrial gas companies have been selected to participate on the survey. The respondents selected were managing directors, senior managers, line managers, senior executives and junior executives. The data will be collected through survey. The measurements of constructs will be based on a 5-point Likert scale. The survey items have been developed based on literature from previous studies and will either be adopted or adapted to this research. The researcher is expected to carry out pre and pilot testing. For pre testing, two (2) academic scholars and ten (10) actual respondents will be chosen to participate and data collected from pre testing will be excluded from the actual data analysis. As for pilot testing, respondents were employees from the industrial gas sector in Malaysia. The data for

pilot study will be collected from 30 actual respondents. The respondents of the pilot study will be excluded from the final data analysis. A total of 400 questionnaires will be distributed to respondents.

CONCLUSION AND DISCUSSION

Human resource management (HRM) is not merely a function in an organization just as finance, sales and marketing, operations, and legal but instead it plays a prominent role to ensure that the various functions or practices within HRM is implemented effectively to ensure enhanced employee and organizational performance. HRMP that encompasses recruitment and selection, training and development, employee empowerment and participation, personal career development and employee appraisal are integral part of an organization. It is important to ensure that prospective candidates are interviewed, selected and recruited based on the organizational requirements. Recruited employees are then provided training to ensure development of knowledge and skills. Employees with the appropriate attitude, skills and knowledge are assigned roles and responsibilities, are participate and empowered to make decision based on organization's delegation of authority. For employees to remain productive and motivated employee appraisals are carried out continuously and personal career development is provided. This HRMP process is time consuming but it's imperative that organizations complete this process. As asserted by SET, motivated employees will work with their employee to achieve common organizational goals. This reflects a positive engagement between employee and management staff. With the effective application of HRMP and engagement of employees in an organization, it is expected this positive relationship to contribute significantly to enhancement of both employee and organization performance.

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THE IMPACT OF HUMAN CAPITAL STRATEGY ON ORGANIZATIONAL PERFORMANCE. A PERSPECTIVE OF SERVICE-BASED SMEs

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Abstract

The small and medium enterprises (SMEs) including microenterprises remained as the largest contributor to the country's GDP which anticipated reaching 41% and 50% in year 2020 and 2030 respectively. Among the SMEs, service-based sector remained as the largest contributor to the country's GDP. However, there were mismatch between the skills possessed and required for the job by the employees. They were either under skilled or over-skilled for their current jobs due to the lack of training, low utilisation of training program and the lack of knowledge management, which in turn becomes the major hindrance towards the growth of SMEs. Hence, accelerating human capital strategy development will be critical for enabling SMEs to expedite Malaysia's transition towards a high-income and developed nation by 2024. The purpose of this paper is to explore the pertinent issues in the relationship between Human Capital Strategy (HCS) and organisational performance in Information Communication Technology (ICT) service-based SMEs. This is quantitative researches that examine the influence of human capital strategies (HCS) on organisational performance. (OP). The conceptual paper undertakes a review of the relevant literature review before developing propositions of conceptual framework with respects to the practices of HCS and organisational performance. This is a correlational type cross-sectional study that utilizes survey methodology, where the data-gathering process will be carry out face to face using hard copy questionnaires. The output of this research will help SMEs to formulate an effective human capital development strategy that will optimize the organizational performance which is crucial for its business sustainability and Malaysia to achieve vision 2024.

Keywords: Organisational Performance, Human Capital Strategy; SMEs

INTRODUCTION

Organizations in SMEs have an important role in shaping Malaysia into a high-income nation by 2024. (Malaysia Economic Monitor, 2019) and therefore, successful organizations represent a key constituent for developing nations. Organisational performance is one of the most important variables in the management research and arguably the most important indicator of the organisational performance. The globalization and the advancement in technology has driven the role of Small and Medium Enterprises (SMEs) in enhancing economy development and employment becomes more essential despite resource constraints. SMEs are frequently observed as being dynamic and the state of art in supporting large enterprises with innovative services and products, many operate with its conventional technology to deliver the services. SMEs are running an enterprise with its philosophy of family survival or get-ahead strategy with limited resources to attain its organisational performance. The SME Master plan is the overarching policy for SME development under the 11th Malaysia Plan of 2016-2020, in addressing the persistent challenges, including the productivity enhancement. Services sector which constitutes 89.2% (As shown in Table 1.1) of the total SMEs had been given full attention by the government to boost productivity. (Department of Statistics, 2019)

Table 1.1: Number of Size and Service Sectors Establishments

Micro	Small	Medium	Total SMEs	% Shares Of SMEs	No of Large Firms	Overall Establishments
649,186	148,078	11,862	809,126	89.2	9,185	818,311

Source: Economic Census 2016, Profile of Small and Medium Enterprises Service Sectors

(reference year 2015), Department of Statistics, Malaysia

Looking at the potential and competitive advantage and future growth of SMEs, the availability of talents and expertise in services sector will become more important, as industries and services is heading towards a more knowledge-based operating environment which needs strategies to attain the organisational performance results. In which the strategies require the matching in the supply of talents, technical-skilled, and knowledge intensive trained workforce (Muthuveloo & Teoh, 2017). SME are capable of connecting technology and knowledge to develop high value products and services enable the firms to boost the productivity and to compete in the international arena.

LITERATURE REVIEW

Conceptual Framework and Hypothesis Development

The relationship between human capital and the resource-based view (RBV) of the firm has been explored in recent years (Hitt, Shimizu & Kochhar, 2001; Muthuveloo and Teoh, 2014). The resource-based view (RBV) is one of the most influential theory for explaining a firm's sustained competitive advantage (SCA). Its fundamental idea is that firms can have persistent organisational performance and sustain an SCA when they possess and control valuable, rare, and inimitable assets and have an organisation in place that is well equipped to handle them (Barney, 1991, 1994, 2002; Prahalad & Hamel, 1990; Wernerfelt, 1984).

The Resource Based View Theory is a prevalent theory that is broadly denoted to and quoted in most of the studies of organisational performance (OP) (Newbert, 2007; Wernerfelt, 1995; Muthuveloo & Ping, 2013). The theory addresses a central question of why some organizations are different and what can organization's do in order to gain a competitive edge over its rival and improve their performance in the marketplace?

Talent and knowledge are two unique resources, which are described by Barney (1991) as resources that are valuable, rare, inimitable, and non-substitutable (VRIN). Talent is broadly conceptualized to include human capital, which is highly valuable and unique to the organisation. Such a conceptualization is the most popular in the field of TM, especially when RBV theory is utilized. (Gallardo-Gallardo et al. 2015). KM strategy focuses on a humanistic approach, as the creation of knowledge implies an intense process of interaction, which is characterized by the transfer of both tacit and explicit knowledge (Nonaka & Takeuchi 1995, Muthuveloo, Shanmugam and Teoh, 2017.). These characteristics in line with the resource-based view theory (RBT) criteria which are considered as strategic resources that can generate organization performance in the economic value and sustainable competitive advantage perspective.

Organizational Performance

The organisational performance is one of the most important variables in the management research and possibly the most important indicator of the organisational performance (Muthuveloo, 2015). In today's dynamic competitive environment, many firms particularly have focused increased attention on alternative methods measuring their ability to meet financial and non-financial objectives, however the firms meet various issues that need to be addressed. (Lo, Wang, Constance, & Ramayah, 2016)

Improving organizational performance become the focal of every employee in every organisation. In order to succeed at enhancing organizational performance, it is crucial for an organization to establish a comprehensive measurement index that provides managers and employees with crystal clear directions and objectives set by the enterprise (Tseng and Lee, 2014). Organizational performance is an indicator which measures how well an organization realizes its objectives (Ho, 2008). Performance measurement has been defined as a systematic process of effectively and efficiently quantifying a concept or an action (Neely, 1997).

Measuring organizational performance is an imperative subject in today's research scenario. Past researchers have used different approaches and measures in evaluating organizational performance. The researchers do not have unanimity on the measures to be used for measuring organizational performance. The literature shows that both subjective and objective measures can be used to evaluate the performance of organizations of small and medium enterprises (Khan, Khalique & Nor,

2014) This paper based on the measures used in previous researches have recommended measures for measuring the organizational performance.

Human Capital Strategy

Human capital strategy is a strategy that outlines the human resources and skills needed to allow an organization to achieve its goals. It is based on manpower planning that required training and development, knowledge management and is supported by talent management that enhances the organisational performance (Sonia, 2018)

Talent Management

Based on Krishnan and Hugh, (2016) findings, revealed that despite the importance of TM in small and medium-sized enterprises (SMEs), research in the area of talent management in this context is still rare, mainly conceptual research. Their paper attempts to address the gap by providing a theoretical validation for the difference between large and SME firms in their talent management and human resource practices. They explore the application in the concept of talent management which were conceptualised in large firms to the SME context. They as well proposing a structure that helps identify the characteristics of talent in SMEs.

Bethke, Mahler and Staffebach (2011) rationalized that talented employees wanted to stay with their companies and try to give something in return for the investment made in them, as well as the trust provided by their organizations. They indicate the relevance and importance TM can play in shaping employees' behavior and influencing organisational outcomes and performance.

H1: Talent Management has a positive impact on Organizational Performance.

Training and Development

Training and development are concentrated on skills development which denotes to the amount of formal training given to or consumed by the employees (Lee et al., 2010). The training does not essentially have to be technical in nature but could be related to interpersonal skills training such as diversity in the workplace training, communicating across generations or knowledge sharing, and occupational skills. The objective of training and development is to enable and develop knowledge, altitude and the overall skill set of employees to further enhance the attainment of organisational goals and objectives (Edralin, 2011)

Noe et al., (2010) defines Training and development as activities that have been planned in order to assist the learning related to job knowledge, skills and employees' behaviors. Well-trained employees can share their knowledge and practice their creativity to produce or serve a product to customer and apprehend the system development of product or service in the organization.

H2: Training and Development has a positive impact on Organizational Performance.

Knowledge Management

Cerchione, Esposito and Spadaro (2015) research on 22 SMEs that industries in which knowledge management is crucial for firm competitiveness which operate in advanced technological industries required high level of complexity which comprise aerospace, ICT and transport systems and services. The field analysis was carried out on a sample of 22 SMEs in 2013 were mostly consists of 14 small firms with 10-49 employees (63.7%), 5 micro firms with 0-9 employees (22.7%), and 3 medium firm with 50-249 employees (13.6%). And the study revealed that in Italy service and manufacturing sector, the KM practices has direct significant and positive relationship with OP and improving the financial, market, technical, human and organizational performance in SMEs.

Hasan (2016) examined the effect of Talent and knowledge management on the performance of Malaysian SMEs. The study used resource-based view theory in its framework to emphasis on the ability of managers to attain better outcome from the strategic human capital resources availability. Her finding has shown the capability of Malaysian SMEs in implementing both of these strategies and emphasized the importance of senior management in stressing the significance of strategic human

capital resources in Malaysian SMEs which depicts the positive relationship of Knowledge Management (KM) on OP.

H3: Knowledge Management has a positive impact on Organizational Performance.

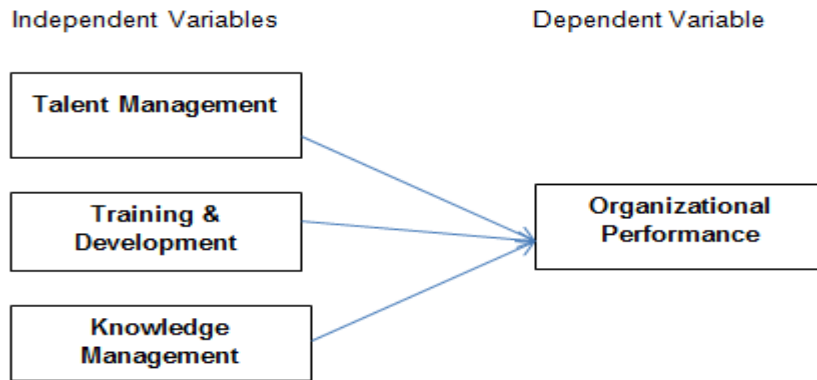


Figure 1: Proposed Conceptual Framework

RESEARCH METHODOLOGY

Sampling Design

This study will gather the primary data by utilizing a quantitative research to examine the relationships between human capital strategies (HCS) dimensions which comprise talent management (TM), training and development (TD), and knowledge management (KM) as the independent variables, and organisational performance as the dependent variable.

This study's target population has been characterized by organizations located in Selangor, Kuala Lumpur, Johor, Penang, and Perak that represent the highest numbers of ICT service-based SMEs firms in Malaysia. For justification of sample size, the Hair et.al (2014) rules of thumb will be used for the study. The sample size determinant will be employed to obtain a purposive sampling of participants to produce the valuable data for the research.

CONCLUSION AND DISCUSSION

Looking at the potential and competitive advantage and future growth of SMEs, the availability of talents and expertise in services sector will become more important, as industries and services is heading towards a more knowledge-based operating environment which need human capital strategies to attain the organisational performance results. In which the strategies require the matching in the supply of talents, technical-skilled, and knowledge intensive trained workforce. SME are capable of connecting technology and knowledge to develop high value products and services enable the firms to boost the productivity and to compete in the international arena.

The contribution of the conceptual framework of this paper is to provide a more precise understanding of factors influencing organizational performance and its impact towards ICT service-based SMEs in Malaysia. In utilizing this framework, prospective outcomes are expected to form a basis for both government agencies, and the service based SMEs industries to determine the current state of HCS adoption in service-based SMEs. The paper foresees that HCS will support organisational performance. In addition, the output of this research will help SMEs to formulate a more effective human capital strategy development that will optimize the organizational performance which is crucial for its business sustainability and Malaysia to achieve vision 2020.

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GROWTH OF GREEN MARKETING IN ASIA

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Abstract

Green concept is an important element to make sure the overall marketing activities from producing to selling are environmental friendly. It had laid the impacts on financial and non-financial of firms. Issues such as global warming, pollution and health problem in Asia developing market had encouraged many manufacturers to offer environmental friendly products. There are several reasons to explain why marketers are concerning green marketing. However, it is not an easy task to promote green awareness among consumers. Method to overcome and strategies in implementing effective green marketing are also discussed in this study.

Keywords: Green marketing, environmental challenges, trends

INTRODUCTION

American Marketing Association has defined green marketing as the marketing of products which are assumed to be environmentally safe for consumers and to the environment (Kravitz, 2014). Green marketing is also about marketing product and service based on environmental factors or awareness (Investopedia, 2015). It involves decisions that affect the entire marketing activities which start from the production to reach end user and make sure the whole process is green and environmental friendly which had laid the impacts on financial and non-financial of firms (Eneizan, Abdul Wahab, Zainon & Obaid, 2016). There was no any standard meaning in defining "green" where many obstacles are facing by both manufacturers and consumers in developing green marketing. Issues on green trust are such as no policies for manufacturers to follow in producing green and consumers, corporate and individual could never be sure that they are consuming truly green (Chen and Chang, 2013).

In the context of business and organizational, green is becoming attractive as a business strategy as going green is now a trend from many societies. Thus, green industry practices are implemented widely on all dimensions which including government policies (Green Industry Analysis, 2017). Public is expecting more green industry business opportunities for upcoming years. The growth of green industry is increasing dramatically since past decades. Many countries are promoting their green industries through establishing of national capacity. It can be done by implementing sustainable production while saving the production cost, thus enhance the revenues (United Nations Industrial Development Organization, 2017). Positive results show that green operations are led to annual benefits and creating new jobs and business ventures. Example from Asia firms, Sri Lanka government has put coconut mill as a leading role in greening sector. It helped to save over USD200,000 per year for an investment of less than USD5,000 by converting the waste into energy (Donor Committee for Enterprise Development, 2012).

LITERATURE REVIEW

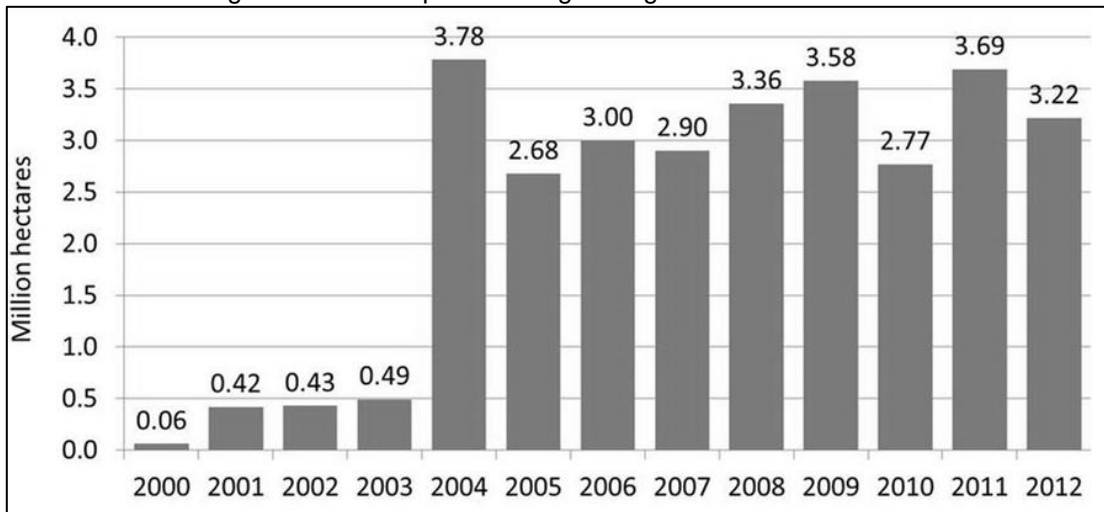
Environmental Issues and Concepts

Consumers are increasingly noticed the environmental issues arise domestically as the awareness of environmental pollution of industrial manufacturing activities in the world is getting public attention (Chen, 2011). Manufacturers are taken more responsibilities in taking environment protection as their corporate social responsibility obligation (Lee, 2009). Doing corporate social responsibility is the method for firms to gain stronger competitive advantage, especially in addressing environmental issues. They can take this opportunity to promote healthy marketing by offering environmental friendly products, involve social events such as recycle projects and reduce the harmful effects resulted from their operations.

Besides, global warming has created opportunities for firms to pursue green marketing (Attar, Gilaninia & Homayounfar, 2016). Government regulations play important role in contributing environmental solutions, protecting consumers and society. It can be seen from the case in India where the local government is encouraging farmers to produce the organically agricultural products (Manisha, 2017). Organic agricultural export market is a major force for greening of agricultural in India (Priya, 2015). Vegetables must be grown organically without the use of chemicals and sustainable farming methods are adopted such as integrated weed management (IWM) and integrated disease management (IDM).

Based on the U.S. organic industry survey 2017, organic sales has reached more than USD\$47 billion in year 2016 which was additional of USD\$3.7 billion from the year 2015. It is also accounts for more than 5% of total food sales in the U.S. market (Organic Trade Association, 2017). Besides, there is a significant increase in the number of certified organic operations with more than 31,160 around the world (United States Department of Agriculture, 2016). The number is continuing increased and valued at over USD \$75 billion worldwide. There is a growing in Asian market for organic products agriculture land since year 2000 (Figure 2.1). The total organic agriculture area in Asia is 3.2 million hectares reported in year 2012 (Research Institute of Organic Agriculture, 2014).

Figure 2.1: Development of organic agricultural land 2000 to 2012



Source: Research Institute of Organic Agriculture. (2014). *Organic world*. Retrieved from <http://www.organic-world.net/country-info/asia.html>

Green marketing goes beyond the traditional marketing concept whereby marketers will not just look at profit maximization but also moving toward to societal marketing orientation (Singh & Pandey, 2012). It is the marketers will focus on three parties which are customer, organization and society when offer product or service (Armstrong & Kotler, 2007). Producers will market their product and service that bring the long term advantages to consumers and also socially responsible to environment. It is also known as environmental marketing or ecological marketing which including product modification, production process, packaging, pricing, logistic and promotion. In short, it is include in overall marketing mix strategies.

Development of Green Marketing and the Trends in Asia

For Asia market, it is still views as one of the main market for global economic growth. The market is believed to grow at 6.1% at year 2015 and 6.2% in year 2016 under the forecast even though the market largest economy contributor, China was growing slower than expected (Asian Development Bank, 2015). World Bank has reported that South Asia is now the fastest growing region in the world which projected to increase the growth rate to 7.6% by year 2017 while maintains its strong consumption and investment (World Bank, 2015). Asia market is treated as strong market which creates valuable business opportunities for marketers from various industries. Therefore, many potential global firms would like to enter into this region for gaining market share.

The expansion of Asia market has resulted in the growth of green marketing. It is because of the corporate social responsibility (CSR) is getting important and being addressed by many marketers. It has become part of the duties that need to be carried out by the corporation as the opportunity to raise its reputation and contribution toward the societies. CSR policies had integrated into the business model in order to hold the responsibility for the company's actions which bring the positive impacts to stakeholders. Besides, consumers today will put green marketing concept as one their main considerations when choosing a brand due to the social and environmental awareness, especially the issue of global warming in Asia. For example, they will look at the recyclable packaging and non-chemical ingredients.

Besides, the issue of pollution in Asia market is getting public concern which force many marketers to practices better CSR in green marketing (Yap & Baharun, 2013). Growing of green marketing is becoming a trend in global business. The huge demand of green products from all range of productions has created high profitability opportunity for marketers. For example, significant growing and developing economies in Asia-Pacific on global green building market is expected to grow 13% during year 2015-2020 (Environmental leader, 2015). It is a great profitable market opportunity for marketers to expand the green marketing. Asia global firms from India, Japan and other countries have started to promote sustainable development though green marketing more than 10 years ago to address global warming and consumer demands (Saxena & Khandelwal, 2010). Global warming which caused by carbon dioxide is one of the issues to motivate firms conducting sustainable strategies. Public is concerns on the greenhouse effect that brings the negative effects on human health as the annual increase of carbon dioxide. Therefore, firms are working hard on implementing green marketing to protect the environment while fulfilling customer expectations on green concept.

Another factor to motivate green marketing is the pollution issue. Air pollution in Asia is very serious as the air quality index is always showing most countries are facing unhealthy air condition. Report indicates that Southeast Asia air pollution deaths could triple where around 20,000 people are died every year from air pollution (Perry, 2017). This issue is happened most serious at China and India. In year 2010, 40% of the world's premature deaths that caused by air pollution were from China (Ives, 2015). Besides, study found that Indonesian fire which happens frequently and the haze generated by the fires may kill more than 100,000 people (Guardian News, 2017). Therefore, public is getting concern on the environmental issue.

Furthermore, adoption of green marketing practice by a firm is also due to the pressure by societies. Profit maximization is no longer the ultimate objective of the companies but concern the positive impacts results from their operations to stakeholder (Cochran, 2007). It may due to many factors, for example changing societal values and perception toward business ethics. Consumers are observing the environmental pollution caused by business operation, animal testing, health & safety products and other ethical consequences are the main concern of public to evaluate a company (Gregory, Ronald & Drozdenko, 2010). Consumers strongly believe that companies' operations should not bring out the negative consequences for environment. They are not just demand for the product and services brought by the company but concern on the impacts that carried out from the operations.

In addition, firms know that taking the plunge into green business practices is necessary to add to their company's overall value. Green Cleaners, a leading eco-friendly cleaning in Singapore whom is actively marketing itself as a green business. It expects green marketing is fast becoming mainstream and a trend in all industries (Tech in Aisa, 2012). Firms are also looking for more opportunities to reduce unnecessary wastage and inefficient practices in their business operations to promote green. For example, Malaysia as a developing country has committed to green practices. Firms in Malaysia are implementing "Green Malaysia" in order to be more socially responsible (Hasan & Ali, 2015).

Challenges

Even though the green awareness and the need to buy environmental friendly products are growing recently, there are some challenges to apply green marketing effectively in Asia markets. The greatest challenge is the pricing issue where many people are not willing to spend additional money to buy green products (Oyewole, 2001). It is due to the increased in living expenses which cost consumer

to spend carefully and they are also becoming more price sensitive. For example, Indian consumers are not willing to spend more for products that are good for environment because they see no personal gain in purchasing eco-friendly products which are normally in higher price (Kashyap, 2013). Besides, many Indian consumers perceive that there is no green product because the green concept is merely selling tactics adopted by marketers to get more profit (Singal & Garg, 2013).

Besides, green marketing is considered a new concept where consumers from rural areas are more aware about the needs of environmental friendly products (Kiran, 2012). Green concept is also not fully accepted by urban consumers due to their education. Marketers must be patience and view the environment as a major long term investment to make sure new concept can be widely accepted in societies (Kotler, 1999). Understanding consumer trends and expectations is crucial to competitive marketing. It can be seen from Malaysia consumers are starting to aware of green concept since year 2000 and their value and attitude toward green product are still in beginning stage after 10 years (Ahmed, Kamalanabhan & Chih, 2001). It is because of many corporations are just in beginning to understand that the green marketing is a long term trend to reflect a permanent shift in societal values.

Methods to Overcome

In accordance to the consumer buying habits, there is a need to implement strategies to overcome challenges faced in green marketing. Firms are advised to produce cost effective products to target price sensitive consumers. Due to the economic uncertainty in Asia market, many consumers are becoming more caution in their spending (Asian Development Bank, 2015). They are looking for affordable products which are also environmental friendly. Manufacturers should produce green products by using cost effective resources where the reduced cost can be passed to the consumers (Kashyap, 2013). It can encourage green purchase among consumers and also meet the environmental needs.

Furthermore, firms should focus on primary benefits by avoiding green marketing myopia (Ottman & Mallen, 2014). Communicate with consumers and let them understand how green products can benefit them personally. Firms must handle the dilemma associated with green marketing by always keep in mind that consumers are looking for certain attributes such as convenience, availability, quality and price in their purchase (Suresh Lai, 2015). Therefore, it is very important for marketers to communicate the green products' benefits with their consumers. To make it effective, marketers first have to understand what are the needs looking by the consumers individually and their intentions of purchase.

Strategies in Implementing Green Marketing

Green marketing is expanding throughout the entire marketing mix which is the combination of product, price, place and promotion. Marketers are encouraged to produce more environment friendly products. Products as well as the packaging can be made by recycled materials or other materials that can reduce harmful effects on environment during the production process. Some Asia global marketers such as Samsung, Honda and Toyota are focusing the green products. For example, Samsung is implementing green management practices by setting up a framework that concerns social and environmental impacts to adapt changes in market environment (Samsung, 2012). It is also a current trend where more consumers are looking for green products.

Besides, pricing strategy can be green by charging on additional product value. Higher price can set for products that come with special appearance, functionality or design. Asian buyers normally have price perception that higher price is representing higher social status (Sang & Brenda, 2010). They are willing to spend on expensive items. For example, Daye (2012) found that top Asia marketer Chinese normally perceive high price is equal to high quality even though is not luxury items. Therefore, green product that incurred higher cost can set at higher price with well design labelling and packaging. It is important to create superior value for consumers.

Green management is having impacts on supply chain management in Asia market (Rath, 2013). After many Asian countries faced the natural disaster such as earthquake, tsunami, cyclone and other problems, the regional economy had affected badly and millions of people died. People start to concern the environmental issues like deforestation, global warming and pollution. Therefore,

globalization of green marketing and supply chain management are closely related to enhance the logistic activities. In supply chain, marketers need to get raw material from suppliers and production will be carried out to produce the outputs. Marketers need to make sure the environment is being protected by choosing right supplier.

For promotional, green marketers are able to reinforce environmental credibility by adopting sustainable communication tools (Biranchi, 2013). For example, marketers can communicate the company's and employees' green initiatives through public relation. The message brought by the marketers is very important to create awareness of green for consumer knowledge. Firms can also engage consumers in green marketing by motivating them to participate in marketing campaign (Edward, 2010). For example, marketers can ask customers to recycle the advertisement mail after reading or give incentive to encourage customers participate in online program.

CONCLUSION

Environmental issue is getting public attention since past decade and the awareness to create green environment is also a trend in today business. Many firms' operations are transforming to green marketing to fulfil consumer demand. However, there are some challenges need to be addressed in order to execute green marketing effectively. Firms are advised to bear in mind that green marketing is a long term objective which only can be implemented successfully when consumers are educated and communicated regarding to the benefits of using green products.

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A NEW CREDIT RATING MODEL FROM THE PERSPECTIVE OF SMALL AND MEDIUM ENTERPRISES (SMEs) IN MALAYSIA WITH ANALYTICAL HIERARCHY PROCESS (AHP)

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Abstract

According to the SMEs report released in September 2018 by SME Corp. Malaysia, Secretariat to the National SME Development Council, it was found that small and medium enterprises (SMEs) in Malaysia recorded a growth rate of 7.2 percent in the year of 2017 lead by strong consumption and SMEs exports. However, SMEs often faced obstacles in raising funds from the bankers are mainly due to their smaller capital structure. Quantitative factors such as current assets, revenues and current liabilities of SMEs are traditional considerations of bankers. The qualitative aspects of the SMEs such as potential growth and current profitability are often ignored. The purpose of this study is to prioritize the qualitative factors used in order to develop an up-to-date credit rating model to be used by bankers in the near future within SMEs in Malaysia. Data was gathered from small and medium enterprises (SMEs) within Kuala Lumpur using a questionnaire in two parts: firstly, the demographic and background characteristics, and, secondly, using a pairwise comparison scales to measure the preference of the respondents on the qualitative factors (profitability, growth rate of the organization and business risk). Respondents are owners or executives in the SMEs. The data was then analysed using the Analytical Hierarchical Process (AHP). The study found that the potential growth of the organization and current profitability are the two most important factors in the credit rating consideration. This information can be used to develop a more current credit rating model to be used by bankers, in order to improve the system of providing credit to SMEs in Malaysia, taking into account the qualitative needs of SMEs within Malaysia.

Keywords: Qualitative factors, Credit evaluation model, Small and medium enterprises (SMEs), Analytical Hierarchical Process (AHP).

Note: * Corresponding author and Presenter

INTRODUCTION

Small and Medium Enterprises (SMEs) are important both for the economies of the developed world and the developing world (and this is particularly true of the Asian economies), contributing to both the domestic economy as well as providing exports (Berisha & Paula, 2015). Malaysia has seen tremendous strides in its economic developing and is known to be one of the most open economies in the world. SMEs play a crucial role in Malaysian economy especially in terms of trade, technology and investment (Muhammad, 2010). SMEs contributed RM435.1 billion in 2017 to Malaysia's economy with a real gross domestic product growth from 5.2% in 2016 to 7.2 % in 2017. Therefore, SMEs contribution to Malaysia GDP rose to 37.1 % in 2017. On the other hand, the exports grew to RM167.4 billion in 2017 comparing to RM155.1 billion in 2016. Moreover, the employment expanded to 66% in 2017 which shows an increase comparing to 65.3% in 2016 (Jaafar, 2018). In Malaysia, The SMEs were divided Micro, Small, and Medium. Micro Manufacturing was defined as having a sales turnover of less than RM300, 000 OR employees of less than 5 for manufacturing services and other sectors. For manufacturing at the "small" level, the sales turnover from RM300,000 to less than RM15 mil OR employees from 5 to less than 75, and for service and other sectors, a sales turnover from RM300,000 to less than RM3 mil OR employees from 5 to less than 30. For manufacturing, the medium definition was to mean a sales turnover from RM15 mil not exceeding RM50 mil OR employees from 75 to not exceeding 200, whilst the service and other sectors meant a sales turnover from RM3 mil not exceeding RM20 mil OR employees from 30 to not exceeding 75 (Salikin, Wahab, and Muhammad, 2013).

Although SMEs represent an important contribution to the economies of developing countries, the SMEs face problems in managing their finances, problems not found in the financial management of large corporations (Anwar, Mustafa, & Tanzo, 2018). There have always been difficulties and constraints faced by SMEs while securing funds and loans from banks for the company business development. As Anwar (2016) has pointed out that the SME sector has no "standardized form of industry information, market share info, market rivalry information, and management trail records" (p235). Thus, the rating system used for large firms is not, on the whole, suitable for SMEs. In the years 2011 and 2012, SMEs' employment growth was 3.9% and 6.4%. The employment growth in larger firms in those same years was 3.3% and 6% (Tehseen, 2016). The difficulties that SMEs face in accessing finance, especially in Asia, are highlighted by a number of researchers. For example, Yoshino and Taghizadeh-Hesary (2017) highlight financial infrastructure, including credit risk data base and credit guarantee corporation Not only this, but Yohsino and Taghizadeh-Hesary believe in the introduction of community-based financing schemes, including home-town investment. The main purpose of this study is to quantify feedback and opinions from a number of SMEs in Malaysia in order to attempt to understand some of the important qualitative factors which may form the basis of a more thorough credit rating model which may be of use in the future, taking into account the particular circumstances with SMEs in Malaysia.

LITERATURE REVIEW AND THEORITICAL FRAMEWORK

Credit Rating Criteria

Credit Rating can be defined as "an evaluation of creditworthiness which can be interpreted as probability of default" (Jorion and Zhang, 2006, p.6). There are a number of studies regarding credit rating and SMEs. Many argue that because many SMEs find it difficult to secure funding from banks, then an efficient credit rating scheme would enable banks make loans based on a thorough analysis of a company's credit worthiness (Yoshino & Taghizadeh-Hesary, 2015). Studies find that credit rating for SMEs is far more problematic than credit rating for large companies, as SMEs are organised differently (Anwar, Mustafa, & Tanzo, 2018).

Credit rating is used by investors, intermediaries (investment bankers), issuers (corporations, financial institutions, governments, etc.), as well as business and financial institutions. Credit rating agencies use a range of rating methods making use of analysts, mathematical models or a combination of both. Some credit rating agencies rely on only quantitative data, which is subsequently incorporated into a mathematical model. This type of agency will focus on a company's assets, funding and profitability using data from the company's public financial statements. On the other hand, agencies can use an analyst approach taking into account not only published reports, but interviews and discussions with the company's management, thus leading to an analytical judgement in order to come to a conclusion regarding the company's credit worthiness.

A number of studies give a general background to credit rating in Malaysia, citing the links between banks, government agencies and the SMEs. For example, Yoshino and Taghizadeh-Hesary (2015) mention that the Credit Guarantee Corporation Berhad (CGC) has founded the SME Credit Bureau, offering information, credit reports and credit ratings, which has the effect of enhancing the competitiveness of SMEs as well as a promoting a healthy credit culture. However, quantitative factors such as currents assets, revenues and currents liabilities of SMEs are traditional considerations of bankers. The qualitative aspects of the SMEs such as potential growth and current profitability are often ignored. The purpose of this study is to prioritize the qualitative factors used in order to develop an up-to-date credit rating model to be used by bankers in the near future within SMEs in Malaysia. The following sections discuss these qualitative factors, profitability, growth rate and business risks of the SMEs.

Profitability of SMEs

Subramanian and Nehru (2012) found that a company with a consistently good profit will have a reasonable credit rating, than those companies with a lesser profit. A rating agency will determine a rate heavily dependent on whether or not the company is profitable. If the overall industry suggests a profitable future, the rating agency will give extra points (Anwar, Mustafa, & Tanzo, 2018).

A number of studies have been made concerning the specific profitability with SMEs in Malaysia. For example, Wasiuzzaman (2018), discussing the empirical evidence of debt financing decisions of SMEs in emerging markets in Malaysia: found that profitability was higher, but more volatile in more established businesses, rather than start-up SMEs. Further to this, Haruna (2017) goes on to point out that there is “limited internal equity” with SMEs in their early stages, due to the lack of retention of profits, thus, they have a greater need for funding from banks, etc. Firms with a higher profitability will be less inclined to see external financing, as they prefer to make use of their profits for investment, rather than taking on new debts, although these profitable companies are, in general, more attractive to banks.

Growth Rate of the Organization

Growth rate is compared with the industry, and if the growth of the organisation is on a par with the industry's growth, the credit rating will be positive, and will increase if the growth has performed greater than the industry average then the company will receive a higher rating (Subramanian and Nehru, 2012). Studies show that if the growth rate of SMEs will rise substantially, this can only be good for the overall economy (Anwar, Mustafa, & Tanzo, 2018). Anwar (2016) has pointed out that any cost reduction in capital is an aid to SMEs.

A number of studies have focused on growth in SMEs in Malaysia. For example, as Zainol et al. (2018) points out, compared to large enterprises, the growth rate of SMEs is greater than in that of large companies. In the discussion regarding the foundational competencies for enhancing work engagement in SMEs Malaysia, growth rate was one of the main beneficiaries of greater employee engagement. (Haruna, 2017). In the study of the growth of SMEs in Malaysia, Palanimally (2016) quotes to official GDP projection in 2012 as 4.5 – 5.0% based on the Economic Census of 2011.

Business Risk

Any consideration of a loan from a bank to an SME, will involve some level of risk. Most studies understand that SMEs represent a greater risk to a bank than a larger company (Anwar, 2016). An information gap will increase the level of risk, and thus credit rating agencies are essential in limiting the risk by minimizing the gap in information (Anwar, Mustafa, & Tanzo, 2018). Credit rating agencies can provide an insight into a company's sales, operational and financial composition, thereby assessing the risk element, and highlighting the overall health of the company (Subramanian & Nehru, 2012). With specific reference to Malaysia, Yacob (2015) believes in the importance of risk management and finds that a lack of systematic financial management can have the effect of having a negative impact on the long-term potential of SMEs. Diaz, Zurdo, and Sanchez (2015) concur with this sentiment, in believing that small business have more difficulty in gaining finances due to the fact that SMEs are generally believed to be of a higher risk than larger, more established companies. Figure 1 displays the conceptual framework of this study. The framework is formed based on the reviews of the literature for this study. It indicates the relationship of the variables in this study. Profitability of SMEs, Growth Rate of the Organization and Business Risk are the independent variables and Credit Rating Criteria is the dependent variable.

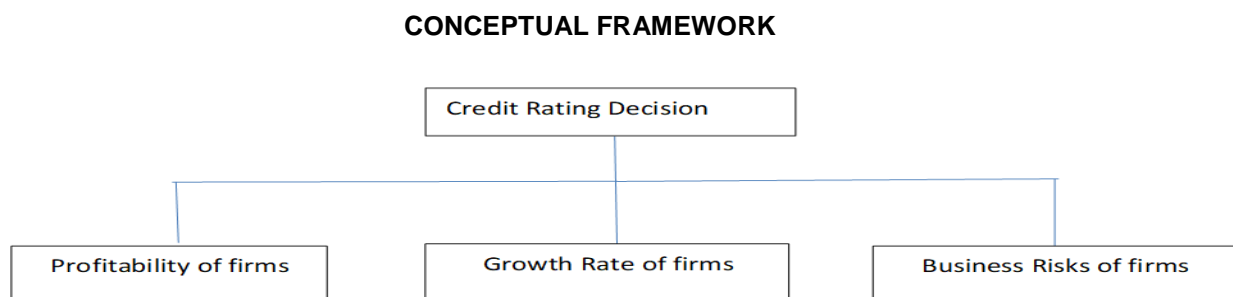


Figure1 Proposed Conceptual Framework

METHODOLOGY

The study concentrated on qualitative research where a range of questionnaires were sent to suitably 30 chosen SMEs across Malaysia basically Kuala Lumpur. The survey involved the three elements of SMEs which are micro, small, and medium in manufacturing, services and other sectors. The data was taken from questionnaires collected from the managers of SMEs. The data accrued concerned the opinions of the relative importance of profitability, growth rate of the organization and business risk. There will be two parts of the study: section A, which shows demographic and background characteristics, and section B which represents pairwise comparison (Analytic Hierarchy Process) using a specific scale. AHP is used to aid in decision with a goal in mind, criteria (sub-criteria), and alternatives, using a system of pairwise comparisons between different factors in order to determine the dominant factor. The purpose of this study is to identify the qualitative factors used in order to develop an up-to-date credit rating model to be used by bankers in the near future within SMEs in Malaysia. Data was garnered from sources within Kuala Lumpur, from Chief Executive Officers (CEOs), Directors, and General Managers, Entry Level Managers, and Supervisors (adhering to the Malaysian definition of an SME – micro, small, and medium), using a questionnaire in two parts: firstly, the demographic and background characteristics, and, secondly, using a pairwise comparison (Analytic Hierarchy Process), in terms of the independent variables (profitability, growth rate of the organization and business risk). The questionnaire based questions on the variables, scoring from 1 – 9 (1) equally between the two pairs, to (9) an extreme preference to one of the pairs.

The data for the research processed using a Pairwise Comparison (Analytical Hierarchy Process) which was developed by the theoretician; Thomas L. Saaty. AHP involves 9 values (from 1 to 9) as a response to 3 criteria: profitability, growth rate and business risk. The two numbers (sides) are evaluated at a time in terms of their relative importance with index values. If factor A (for example, the right hand side) has equal importance as factor B (for example, the left hand side), this pair receives an index of 1. If A is having extreme and absolute importance than B, an index of 9 will be graded. All gradations are possible in between using value 2, 4, 6 and 8. The terms used are 1 (Equal preference of both sides, 3 (a moderate preference of both sides, 5 (a strong preference from one side over another, 7 (a very strong preference of one side over another, 9 (an extreme preference of one side over another). The numbers 2,4,6,8 represent the intermediate values between two adjacent judgements. In the survey, the participants were asked to circle the relevant main factors (criteria), regarding three questions: profitability (the ability of the SME to earn a profit); growth rate of the SME (representing the compounded annualized rate of growth of the SME's revenues, earnings, dividends, as well as macro concepts such as GDP and retail sales); Business risk (the possibility of an SME making a loss rather than a profit).

RESULTS

A number of managers of 30 SMEs shared their experience in a short survey regarding the important qualitative factors which can be used to develop a new credit rating model for bankers in the future. The number of employees is considered one of the two main criteria when defining SMEs in Malaysia. 11 companies (37%) have less than 5 employees which represent the micro enterprise. While 14 companies (47%) have from 5 to 74 employees and Only 5 companies (16%) have from 75 employees and not exceeding 200. The turnover is second main criteria used to define SMEs in Malaysia. 10 companies (33%) had a turnover of less than RM 300,000. 13 companies (43%) had a turnover between RM 300,000 and not exceeding 20 million for the services sector of small and medium enterprise. 1 company (3%) had a turnover between RM 300,000 and not exceeding 15 million and 6 companies (20%) had a turnover of RM 15 million to RM 50 million. Due to limits in terms of resources and time and according to SME statistics (2016), 89.2 % of SMEs are engaging in the services sector. Therefore, 27 companies (90%) are in the services sector while 3 companies (10%) are engaging in the manufacturing industry.

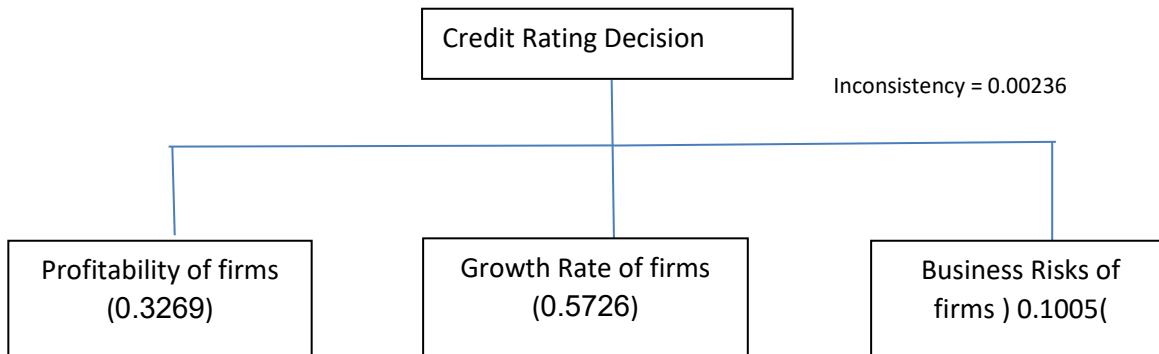
In terms of length of time employed in the company, the findings were evenly spread from between less than a year to more than 10 years. 8 of the surveyed employees which represent (27%) had been with the company less than a year. 7 of them (23%) are between 1 to 3 years. 5 of them (17%) are between 3 to 5 years. 3 of them (10%) have been with the company from 5 to 10 years and 7 of them (23%) have been with the company more than ten years. 57% of those surveyed were male and

43% were female. The questionnaire was distributed to 13 women and 17 men. In terms of the position of the surveyed employees within SMEs, 17 (57%) of those surveyed were executive, 9 (30%) described themselves as top management team, and the 4 remainder (23%) as a chief executive officer role.

TABLE1 Reporting the Data in the "Weighted Super Matrix"

Cluster		Criteria			Goal
Node Labels		1 Profitability	2 Growth Rate Of The Organization	3 Business Risk	Goal Node
Criteria	1 Profitability	0.000000	0.000000	0.000000	0.326899
	2 Growth Rate Of The Organization	0.000000	0.000000	0.000000	0.572617
	3 Business Risk	0.000000	0.000000	0.000000	0.100484
Goal	Goal Node	0.000000	0.000000	0.000000	0.000000
Done					

Figure 2 Network Results



The result of section B of the survey of the managers of SMEs in Malaysia regarding the relevant criteria (profitability of SMEs, growth rate of the organization and the business risk) with the goal found that the "growth rate" of the organisation received the highest figure, followed by profitability, and finally, business risk. Therefore, growth rate is most likely to be the main criteria for banks before releasing the loans to SMEs, followed by profitability. The pairwise was found to be reasonable, as it was less than 0.10, thus the AHP process was deemed to be acceptable and the inconsistency is less than 0.10 at 0.00236.

This preference among business leaders is borne out by the existing literature regarding SMEs in Malaysia and the rest of the world, who laid emphasis on the importance of growth. For example, if a manager shows a positive attitude to growth of the business, the manager will demonstrate more ambition towards the company (Wiklund, et al., 2009). Growth is generally agreed to be a measurement of a company's success (Palanimally, 2016). Writing specially on SMEs in Malaysia, many researchers have found that growth with SMEs in terms of employment is higher than that of larger firms.

THE IMPLICATIONS OF THE STUDY TO THE BANKERS

It is recommended that the bank (credit agencies) to take into account the views of management in SMEs and react to their belief that growth rate followed by profitability are not only the most important aspects of the management's business, but to use these factors in determining the creditworthiness of the company and to make decisions regarding loans based on this information. Growth rate and profitability of a company can be used by bankers to predict the ability to meet the financial obligations of any loans made to the company, and to share in the belief that these two factors are the driving force behind the strategic goals of the company. Although many other factors are involved in measuring the creditworthiness of a company, growth rate and profitability can become the core tenets of any decision making on behalf of the bank. This creates a symbiotic relationship between the banks and the management which is what is needed to give financial encouragement to SMEs across Malaysia and thus strengthen the economy of the country as a whole. In order to make more valid estimations of the risks of financial aid to SMEs within Malaysia, the growth and profitability of companies is dependent on many factors, both local and global. Growth and profitability are not fixed entities, but are interpreted differently by different management depending on the type and size of company (whether it is family run, etc.), the expectation of the company, and the long-term aims of the company.

LIMITATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

Although the study is of particular value to banks in terms of developing a new credit rating model from the perspective of the SMEs, there are limitations within the study, as the sample of SMEs is quite small, and the study restricts itself with urban SMEs, ignoring rural SMEs which make a strong contribution to the economy of Malaysia. A more extensive study of a wider range of variables would have given the study more depth. However, the variables used in the study give reflect the nature of issues regarding SMEs and credit rating within the country.

CONCLUSION

The research studies the creation of a New Credit Rating Model from the perspective of SMEs (Small Medium Enterprise), in Malaysia, basing the findings on a survey made using data from 30 managers of SMEs in Kuala Lumpur. The study offered a unique opportunity to create a New Credit Rating Model based on a pairwise Comparison (Analytical Hierarchy Process (AHP), comparing the relative importance of 3 main factors (criteria): profitability, growth rate of the organization, and business risk. As has been revealed in the research, the most important factor for their business is its growth rate. The dilemma facing both banks and the managers of SMEs is that it is often the case that to improve the growth rate of a company, the SME has to take on financial aid. Thus, banks may create a modified evaluation method in order to evaluate SMEs. It is important for credit agencies understand the qualitative factors of the SMEs before making credit decision as quantitative factors such as balance sheets and profit and loss account may not reflect the whole picture of the SMEs operations.

ACKNOWLEDGEMENT

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ORGANIZATION INNOVATION FOR INDUSTRY 4.0 IN MANAGEMENT PERSPECTIVE

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Abstract

Industry 4.0, also branded as smart manufacturing is an important topic and recently drawing much attention from researchers. It has potential to affect the manufacturing industry by transforming the traditional way of processing to an intelligent and advanced production system. In order to meet the fast pace of Industry 4.0 developments, continuous innovation is imperative for technology-focused organizations. Suitable management practices are vital in developing long term organization innovation capabilities and facilitate the implementation of Industry 4.0 concept. Therefore, this conceptual research seeks to highlight the significance of industry 4.0 for manufacturing sector of Malaysia. Besides, it pursues the aim of shedding light on mostly undiscovered management practices that are essential for organization innovation in context of industry 4.0. The objective is to strengthen manufacturing sector by sharing right practices that are useful for successful implementation of Industry 4.0.

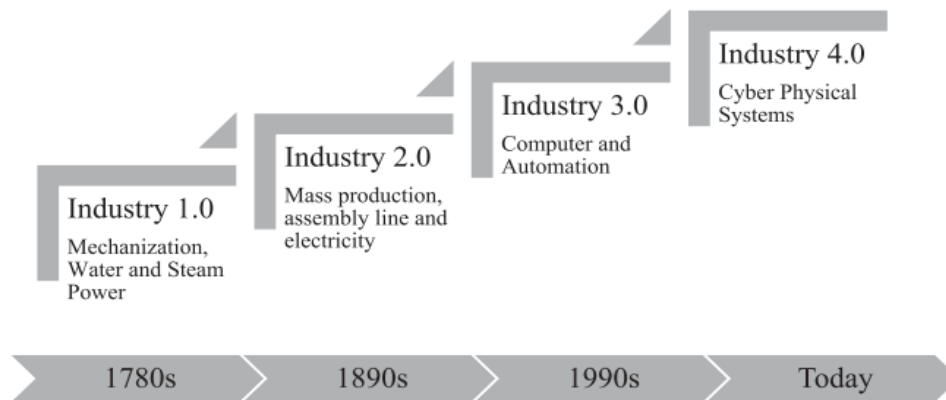
Keywords: Leadership, Human Resource Management, Organization Innovation, Industry 4.0

INTRODUCTION

Since the introduction of industrialization, manufacturing industries have experienced major paradigm shifts towards technological innovation. Of late, the change in the name of Industry 4.0 has revolutionized the whole concept of manufacturing. Before conferring about the Industry 4.0, there brings on the discussion of the first three revolutions. After understanding the history, only then one will be able to point out the shortcomings in historical revolutions and can be improved in Industry 4.0 (Özüdoğru, Ergün, Ammari, & Görener, 2018). The researchers contended that in the First Industrial Revolution, things like coal, water and steam energy paved the way for innovation. The Second Industrial Revolution emerged due to high use of oil and electricity, while the Third Industrial Revolution developed renewable energy resources like sun and wind (Figure 1). At present, the world is undergoing Fourth Industrial Revolution that is elicited by economic, technological and political changes (Shamim, Cang, Yu, & Li, 2016). Fourth Industrial Revolution (FIR) also known as Industry 4.0 is carried forward by the fusion of advanced manufacturing and Information and Communication Technology (ICT). It is thus connecting human and objects with the convergence of Cyber-Physical Systems (CPS) that is assisting the transformation of smart manufacturing industry (Ignacio, Santana, Afonso, Zanin, & Wernke, 2018). Therefore, Industry 4.0 will have a crucial impact on country's economy. Also, the rationale behind giving out Malaysian Industry 4.0 policy was also to take development in the facet of Industry 4.0 to a higher level. In a hope that Malaysian economy and tertiary sector will boost for advancement.

The present study traces its background from the time this concept of Industry 4.0 came into the active discussion. The basic idea of Industry 4.0 was initially presented in the Hannover Fair (Germany) back in 2011. Germany is a global leader in the sector of manufacturing equipment. Moreover, being a hub of competitive manufacturing industries, they introduced this (Industry 4.0) strategic initiative to transform and strengthen its manufacturing sector (Rojko, 2017). Different developed countries like the United States of America, Japan and Russia have already foreseen the significance of Industry 4.0 concept and implemented it successfully. While few developing countries

named China, Vietnam and Thailand are stepping forward to compete the world by applying the concepts at earliest.



Source: Kazancoglu and Ozkan-Ozen, (2018)

Figure 1: Industrial Revolutions

Recently, Malaysia has joined the race by introducing its Industry 4.0 policy. The purpose behind this comprehensive policy is three-fold; Attract, Create and Transform. Attract the stakeholders by developing policies are beneficial for them, Create a right eco-system for Industry 4.0 and Transform Malaysian industry capabilities in an accelerated manner (Ministry of International Trade and Industry [MITI], 2018). It is now known that the policy outlines broad strategies for main drivers of Industry 4.0 that are People, Process and Technology, so that the country may set off with its journey of experiencing and bringing about a transformation in its manufacturing sector.

PROBLEM STATEMENT

Industry 4.0 is an active topic in academic and industry communities. Whereas, "Industry 4.0" is about the implementation of Cyber-Physical System (CPS) by linking the machines with value chain. It includes highly customized products and additional value-added services (Schumacher, Erol, & Sihni, 2016). Therefore, it requires innovation to be part of their processes. However, such a dynamic business environment needs appropriate management practices that are important in developing organization's capability to innovate (Shamim et al., 2016). While describing Industry 4.0 as a concept in its wholeness, instantly there comes a point at which one is compelled to comment over the existing gaps in research as well as problems related by scholars on it. For instance, Hecklauer (2016) pointed out management related concerns on Industry 4.0. Moreover, one of the other challenges is the ever-increasing globalization, in which every process is interconnected and organizations will be needing updated equipment to run their system smoothly. Along with that, due to increasing competition all over the globe, there is a much-needed requirement of organization innovation capabilities. These capabilities can only be possible with the successful implementation of innovation-friendly management practices. Additionally, the markets are no longer homogenous or constant. This means if innovative capabilities are not inculcated, which is need of the day, then the markets and economy may collapse. Therefore, to meet the expectations of local as well as global markets, smart production systems should be streamlined in accordance with demand of time.

Mostly, the researchers have emphasized on the technological aspect of Industry 4.0, however they ignored the management practices that can play a vital role in the modern business environment due to their limited scope of study (Mohelska & Sokolova, 2018). Therefore, current study aims to highlight the existing gap in literature of delineating appropriate management approaches, the likes of which includes Leadership style, Human Resource Management practices and Organizational Culture. How these management practices are required to develop innovative capabilities of organization for successful implementation of Industry 4.0? In addition to it, with a critical lens, the paper seeks to explore any overrated concepts in the literature and seeks to present them to the reader. The National Policy announced by Malaysian government on Industry 4.0 has highlighted three key drivers. In

order to attain the objective of competitiveness, these factors must be of main focus. As organizations are made up of employees (people) and their success or failure is dependent employee's performance. Therefore, all employees should be hired and trained in line with company's objective (Hecklau, Galeitzke, Flachs & Kohl, 2016). With current advancement in processes and technologies, different sources have discussed the requirements of employees, yet there is a general lackness in literature about how employees should be for Industry 4.0? (Kazancoglu, 2018). Moreover, considering employees as an asset, their management is a real concern of any successful organization. Hence, suitable management practices such as Human Resource Management and Leadership style are required to recruit, train, motivate and control employees for accomplishment of organization's goal (Leroy, Segers, Dierendonck & Hartog, 2018). Whereas, for Industry 4.0, leadership that has an element of motivation and communication is highly recommended as it provides support to existing talent for the achievement of the firm's objective (Agarwal, 2017).

The current era of industrial development is not only the adoption of technologies but transformation of manufacturing processes as well. Manufacturing organizations are required to produce customized items and offer value-added services. Consequently, Industry 4.0 notion needs innovative business processes (Mohelska & Sokolova, 2018). On the other hand, as Industry 4.0 is all about Smart Manufacturing, Artificial Intelligence and other latest technologies. In order to use it in full, organizations are required to adopt new technologies. To encapsulate, organizations have to find a balance between people, process, and technology (Dworschak & Zaiser, 2014) to ensure their success.

LITERATURE REVIEW

While conferring about Industry 4.0, it can be asserted that with an ever-increasing technology and change in manufacturing dynamics, organizations will face new challenges. The likes of which may come from economic, social as well as technological facets. In order to make sure that Industry 4.0 survives the test of time, and serves the manufacturing industry in an accomplished manner, continuous improvement (innovation) at all levels of business is vital. Moreover, innovation can only be possible through appropriate management practice such as Leadership, Human Resource Management practices and Organizational Culture. When these facets combine, they enhance organization innovation happen and ultimately helps in the implementation of Industry 4.0. According to Shamim et al. (2016), appropriate management practices when carried out effectively will lead to an improvement in Industry 4.0 implementation and eventually in the manufacturing sector. Hence, it is essential to delve deeper into those factors which can amalgamate to make Industry 4.0 a success.

Leadership

Different scholars have defined the styles of leadership which must be practiced or viable considering the fact that they operate in Industry 4.0. Since it has been asserted that the effectiveness of Industry 4.0 lies in the fact that there are skills as well as knowledge that is required in leaders and employees. Leadership style hence carries immense significance for how decision making is carried out. The leadership style that is a cause of innovation and works as a driving force towards success in dynamic business environment should be weaved into Industry 4.0. According to a study cited by Prince (2017), leaders practicing leadership in Industry 4.0 projects are not everyday leaders. They are defined as digital leaders and digital transformers. This digital transformation encapsulates technologies like Internet of Things, Smart Manufacturing, Artificial Intelligence and 3D printing. For the current study, researcher will try to explore two extreme styles of leadership for better understanding in context of a non-routine fast-changing business environment.

Discussing the Transformational Leadership, we get to experience the four distinct features of it namely: idealized influence, motivation, intellect, and personalized consideration. This sort of leadership in Industry 4.0 is aimed at forming relationships which increase motivation as well as morality in both leader and the one being led. However, on the other hand, those who practice Transactional Leadership neither care about the needs of those whom they are leading nor about their development. Hence, a transactional leader has no focus on individualized needs (Prince, 2017). However, if we investigate deep into the literature, we see that there are mixed views on Transactional Leadership. For instance, in a study by Kalsoom et al (2018), references have been made of literature

from 1887 to 2003 and a mixed relationship has been found between employee motivation and Transactional Leadership. For example, a study conducted in the banking sector of Pakistan by Kulsoom et al (2018) concluded that employees show higher motivation when Transactional Leadership is applied as compared to Transformational Leadership. Hence, it makes the employees perform well for organizational productivity. However, a research conducted in Chile that Transformational Leadership is associated positively with performance while Transactional Leadership has negative associations with employee performance.

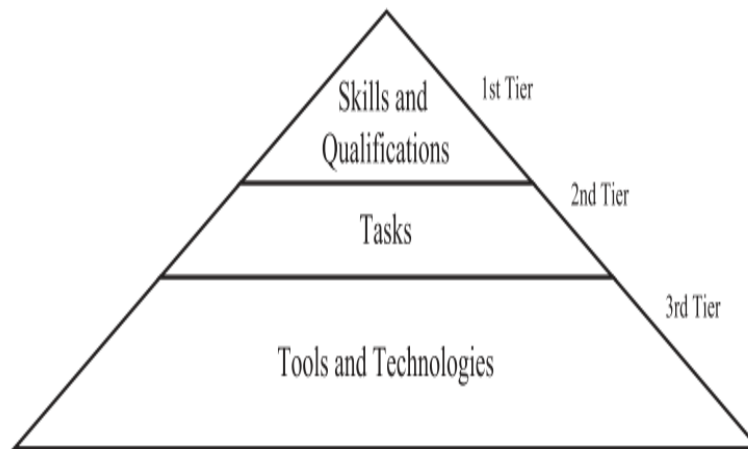
Existing literature like Prince (2017), mentioned that Transactional Leadership is associated with employee needs. It must not be overlooked that there is one feature of Transactional Leadership called contingent reward leadership in which individual wants and needs are taken care off. While it could be said that Transformational Leadership can take new forms because of digitization. It is always essential that leaders maintain a balance between these two forms of leadership. This is, in fact, a challenge because while on the one hand, leaders must take care that they nurture and look after the needs of their employees, set higher work standards, give rise to interpersonal skills, inculcate ethical behaviour and integrate communication. Additionally, they need to get their work done and focus on the objective. Finally, in such a scenario where there is Industry 4.0 and constant change, with technology revivals and addition of new technology in a fast pace, the leaders also need to go with the change, embrace it and apply the leadership style which best suits the scenario.

Human Resource Management

To address knowledge and competence challenges that are related to new technologies as well as processes related to Industry 4.0, there needs to be a holistic understanding of Human Resource Management (HRM). The management of human resource is of great need in Industry 4.0 because of continuous automation of manufacturing processes. Due to which there will be complex machinery included in the workplace. In order to operate such equipment effectively, staff with higher skills level is required. Here, Human Resource Management plays its role by developing the required human capital. Managing human resource is basically a challenge today as it requires great efforts for employees to shift their capacities to a workplaces in which they are destined to do more complex tasks and operate more complex machinery.

Performance of an organization, as well as competitiveness amongst other market players, is dependent on how employees are managed. Therefore HRM is considered as an essential facet of organizations of the future. It is defined as a strategic approach whereby there is an aim for effective employment and development of a workforce. A workforce that is extremely qualified and committed to achieving organization's objectives. Kazancoglu et al (2017) in a very comprehensive study on HRM talks about workforce and expectations from it in digital era. The authors contended that this digital environment hasnot only influenced technology in manufacturing systems but also on the workforce. It influences job positions of workers. Due to the ever-increasing technology, there is a lesser need for manpower. This means that the entire system of recruitment changes because the work previously done by humans is now carried out by the machines.

When the Human Resource managers carry out the recruitment, they make sure that the potential employees have self-organization, complexity as well as thinking skills. Not limited to that, employees also can perform number of tasks simultaneously resulting in multi-tasking skills. Thus, a potential employee who has greater chances of being recruited is the one who is multi-talented and can work in complex and tensed situations. A model proposed by Gehrke et al (2015) has a comprehensive detail about what is expected from employees or the workforce of Industry 4.0. There are three tiers of expectations as shown in Figure 2. The first tier includes qualification and skills set which an employee of this age is expected to possess. While the second tier refers to the traditional tasks which are supposed to be done by employees by using the basic skills and qualification. Finally, the third tier of expectation is the most essential one because those tools and technologies are the additional requirements for which a worker is destined to interact and utilize them better. It has been affirmed that recruitment tasks for HRM in digital era are a challenge because there are significant changes in the work environment.



Source: Kazancoglu and Ozkan-Ozen, (2018)
Figure 2: Expectations from Employees

On the other side, Lorenz et al (2015) have suggested that while recruiting an employee, capabilities must be seen instead of qualifications. This is because there is no dearth of variety of tasks in Industry 4.0 and skills are more important than qualification to handle those tasks. These skills may not be provided in employee's former education and hence it is essential that there is a focus made on searching for employees who have such skills. Industry 4.0 requires employees that have hard and soft skills like combining know-how related to each specific job or process, Information Technology knowledge and abilities, organizational and procedural understanding, ability to interact with modern interfaces, trust in new technologies, awareness of its security and data protection, flexibility to adapt new roles and work environments, continuous interdisciplinary learning and ability of dealing with complexities.

The above literature shows the value of HRM which this department can add to the organization. Moreover, the Contribution of HRM to business performance provides some overview as of how this concept can play a role in organization innovation. Organizations have to pay attention to Human Resource for organization innovation, by providing employees with rewards to promote creativity (Tuan, 2017). As stated by Lau and Ngo (2004) HRM is really necessary for innovative organizations. For a higher degree of innovation, Human Resource needs to include: performance-based reward system, training, and team development. Thus, it is significant to create a modern environment through proper Human Resource features. Additionally, organizations are required to provide skills to workers and develop capabilities for organization innovation by frequently offering different training programs (Authors, Al-ghamdi & Abdel-Razek, 2015).

Practices of Human Resource Management supports organization innovation by promoting the best use of knowledge in an appropriate way (Hong, Zhao & Snell, 2018). Studies suggested that Human Resource practices are key for innovation in an organization (Chow, Liu, 2008; Delery, 1998; Gooderham, Nordhaug, 1999; Lepak, 1999; Tzafirir, 2005). These practices can impact organization innovation by improving the desire of employees to share useful knowledge (Lopez-Cabrales, Pérez-Luñoa, 2009; Martinez-Conesa, Soto-Acosta, 2017), and this knowledge flow also open boundaries of business. Meaning that innovation occurs in between people and knowledge, and HR practices can positively impact the flow between them (Scarborough, 2003). Moreover, Human Resource practices can improve the ability of workers to get involved in the innovation process of an organization (Hong et al., 2018).

Organization culture

Organizational culture, also called as corporate culture means a pattern of values, beliefs, norms, attitudes and assumptions which may not have been only explicitly stated or articulated but it gets internalized in the employees and shapes their behaviour accordingly. The author asserts on the importance of norms and values, where the former are unwritten rules of behaviour while the latter is the important aspects of people and organizational behaviour (Mohelska & Sokolova, 2018).

Moreover, organizational culture is also defined as a deeper level of basic assumptions and beliefs which all employees in an organization shares, acts according to it subconsciously and forms the basis for company's reflection. Once the culture of an organization starts supporting missions, strategies and goals of an organization, it is said to be effective. However, being effective is not the only thing. Organization culture must be good enough that it matches the business needs, the company as well as employees. These are three main types of organizational culture, bureaucratic, innovative and supportive culture. However, for this paper, we will be integrating bureaucratic culture and innovative culture only as they are more relevant in context of a rapid changing environment.

There is a stronger market orientation in bureaucratic culture and the core values gird around being efficient, result-oriented, power and control. Moreover, loyalty is also a significant element of this type of culture in which the individual motivation for development comes from power. In the other form of culture which is innovative in nature, there is a sense of achievement and the core values gird around personal creativity, freedom, orientation towards change, innovation and risk. Unlike bureaucratic, there are fewer hierarchies in it (Zizlavsky, 2015).

Researchers believe that there is no bad culture. If your organization culture is supporting goals and strategies then it is fine whatever culture it is. However, Handoko, Setiawan, and Surachman (2011) discovered that both bureaucratic and innovative cultures are linked with employees' performance to some extent. They concluded in their study that, to improve the performance of employees, it is mandatory to focus on innovative culture as it increases creativity. Because the environment created by culture is the main factor that motivates the formation of innovative values.

Organization Innovation

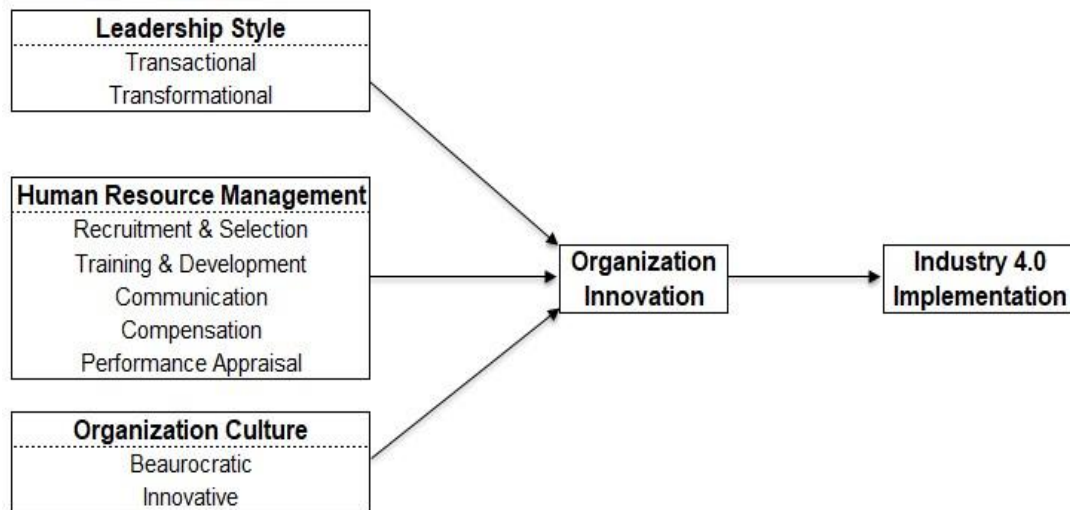
In course of the last couple of decades, scholastic research and practices have increased on how to ace manufacturing of new products effectively. However, ongoing rapid advancement in technology and other socio-economic difficulties requires successful organizations to reshape not simply their products but their processes as well (Burmeister, Lüttgens, & Piller, 2016). Many advanced nations depending on manufacturing sector have tried to transform their economy and revive their businesses. They suffer threats from developing markets and worldwide supply chain. Therefore, not only organizations are now looking to advance manufacturing innovation but started concentrating on continuous innovation in their processes too. Along these lines, the manufacturing industry will drive towards advanced manufacturing system.

In recent decades, with technology making use of its great potential, the world has witnessed an innovation which goes by the name Industry 4.0. Increasing digitization is likely to be immense potential for innovation. In fact, through the introduction of intelligent production systems, manufacturing has become quicker and efficient. These business changes are leading to new employment forms and business models. This phenomenon of Industry 4.0 encapsulates concepts such as smart manufacturing and cyber-physical systems for production purposes. Moreover, it includes sensors, networks of microcomputers, Internet of Things that link machines to the value chain. The purpose is to empower industry especially manufacturing sector that is among major contributor to the country's economy. However, these advancements involve risk at every level of organization. This flexibility directly means limitation of work, fast speed, and intense efforts with challenges as well (Buhr, 2015). Hence, it can be possible to deal with global challenges by utilizing and creating innovations in an effective manner (Lee, Kao, & Yang, 2014).

RESEARCH FRAMEWORK

Figure 3 shows the three main factors or independent variables named Leadership style (Transactional and Transformational), Human Resource Management practices (Recruitment & Selection, Training & Development, Communication, Compensation and Performance Appraisal), and Organizational Culture(bureaucratic and innovative). These all amalgamate to enhance Organization Innovation and thus results in the final dorm of Industry 4.0 implementation

Figure 3: Proposed Conceptual Framework



DISCUSSION AND CONCLUSION

The purpose of writing this paper is to bring on a new prospect by sharing the appropriate management practices that are useful for Industry 4.0. Through the support of literature and logical understandings the conceptual framework is developed. Initially, the concept of Industry 4.0 and its massiveness has discoursed in detail. Moreover, based on contention that due to ever-changing business environment in Industry 4.0, organizations depend on innovation. Therefore, this research offers a perspective on appropriate management practices such as Leadership, Human Resource Management Practices and Organization Culture. In addition to it, this paper focuses on the need of innovation as continuous part of organization processes. Finally, it provides direction for future research on management practices that are useful in building organization innovation capabilities in context of Industry 4.0. Since Industry 4.0 is a concept that carries immense potential for development, the concept definitely has room for making itself prominent in future endeavors. One could assert that the arguments made in this paper can be validated by conducting empirical and quantitative research.

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INTENTION OF PUBLIC TO ADOPT SOCIAL MEDIA PLATFORMS AS CHARITABLE CONTRIBUTION THROUGH CROWDFUNDING

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Abstract

For the last decade, crowdfunding has been a new concept that have been receiving attention and widely accepted as a tool of raising funds from the crowd through social media for social projects. Social media has become the modus operandi of the 21st century on building the foundation of Web 2.0 where social media platforms have facilitated unprecedented growth in human interaction in modern times. In fact, social media platforms could effectively accommodate public to raise a fund through the crowds. Despite its rapid development, little scholarly literature review has discussed about this topic. In order to address this gap, this research aims to develop a model that explains public intention to employ social media platforms as charitable contribution through crowdfunding specifically in Malaysia. Therefore, the proposed conceptual framework will be empirically validate using self-administered questionnaire data. The findings are very vital in order to determine the intention of public to adopt social media platforms as charitable contribution through crowdfunding.

Keywords: charitable contribution, crowdfunding, social media platforms.

INTRODUCTION

Crowdfunding can be defined as the process of raising funds via an open call over the Internet that provides an alternative way to raise funds from “crowds” for various social activities or projects (Lambert & Schwienbacher, 2010; Kaur & Gera, 2017). The term “charity” commonly refers to “the giving of aid to the needy”. More specifically, charitable donation through crowdfunding refers to the giving of monetary aid to the needy. Hence, charitable donation-based crowdfunding – a remarkable innovation of charity has become the mainstream charity participant mode with the advance of social media (Liu, Suh & Wagner, 2017). Social media such as Twitter, Facebook and LinkedIn have been defined as a group of internet-based applications that build on the ideological and technological foundations of Web 2.0 which allowed the creation and exchange of user generated (Kaplan & Haenlein, 2010). Ever since Web 2.0 technology was introduce, social media has provided notable opportunities platform for crowdfunding in the promotion of low-cost, easily targeted and viral marketing to disseminate the information on which can draw the attention of large audience on Internet community.

According to the Webster online dictionary, social media is defined as the forms of electronic communications through which users create online communities to share information, ideas, personal messages and others. With the current rapid development of payment technology and advancement of the Internet network has makes crowdfunding been accepted widely as a tool of raising funds from public through social media platforms for the social projects. However, little scholarly literature review has discussed about this research area despite its rapid development. Therefore, motivated by these research gaps, this research aims to develop a model that explains public intention to employ social media platforms as charitable contribution through crowdfunding specifically in Malaysia.

LITERATURE REVIEW

Technology Acceptance Model (TAM)

In this study, the researchers propose to use the Technology Acceptance Model (TAM) as the underlying theory. TAM has been introduced by Davis (1986) to theorize the usage behavior of computer technology. According Davis et al. (1989) TAM was specifically designed for explaining behavior regarding computer use. In actual fact, TAM has the power of explaining and predicting an individual behavior over a wider variety of end-user computing technologies and user groups while at the same time being both parsimonious and theoretically justified (Davis et al., 1989).

Mathieson, Peacock and Chin (2001) found that TAM has been extensively used for specific information systems and technology usage which is effective in predicting the individual acceptance of various corporate Information Technology systems and it is known as an intention-based model predictor since intention to adopt technology is a decent predictor of its actual usage. Simultaneously studies by Alrafi (2006) simplify that, TAM also grant an explanation on determinants of technology acceptance and capable of explaining user behavior across a broad range of end-user technologies and user population.

Technically, according Lee, Kozar and Larsen (2003) specified that TAM has become popular which has been mentioned in most of the researcher that deals with user acceptance of technology. TAM has two relevant determinants that denotes the primary drivers of technology users' acceptance of new information technology, namely perceived usefulness (PU) and perceived ease of use (PEOU) which are the instrumental explaining the user's intention and behavior towards the use of new technology (Davis, 1989). TAM theorizes that an individual's behavioral intention to use a system is determined by PU and PEOU. Nevertheless, in this research will build upon previous studies of TAM models to explain the voluntary usage behavior of social media platforms by end users in area of charitable contribution through crowdfunding.

In the context of social media, the user may asses the site based on how easy it is to use and how effective it is in helping them accomplish their social media related needs. Social media applications and tools need to be user-centric. The social media site should be intuitive for the first-time user, and should be efficient in getting tasks done. According to past studies by Rauniar, Eawksi, Crumbly and Simms (2009) found that an ease of use social media can develop the user's experience.

Perceived Usefulness (PU)

Perceived usefulness (PU) can be defined as a user's subjective probability that using a different system or technology will increase his or her job performance (Davis, 1989). In this context, PU can be explained to the extent to which a prospective user believes that he or she will benefit from using social media. Therefore, PU is one of a system which the user believes in the existence of a positive user-performance relationship (Davis, et al., 1989). In fact, an individual evaluation of the result of their behavior in terms of forecasted benefits base their choice on the desirability of the usefulness (Al-Daihani, 2010; Kim et al., 2007).

In addition, technology is excluded by users if perceived not useful even if the technology was easy to use. Davis et al. (1992) specified that PU do have a significant effect on user adoption and satisfaction across a range of technologies. Sago (2013) mentioned that the regularity of use of social media services is positively impacted by the level of PU which has been provided by the social media services.

Perceived Ease of Use (PEOU)

Perceived ease of use refers to the degree to which a user expects use of a system or technology to be free from efforts (Davis, 1989). In view of human's effort is a limited resource, an application perceived to be easier to use than another is more likely to be adopted by users (Davis et al., 1989). In fact, according Burton-Jones and Hubona (2005) stated that there are numerous studies have found PEOU is a key determinant of attitude towards a technology.

In addition, Sago (2013), concluded that PEOU of social media services is the reason for its frequent use. Hailpern et al. (2009) indicated there are few numbers of characteristics make social media

platforms ease to use such as interaction enabled features, which makes visually challenged interactions easily accessible and more simplified. In fact, social media platforms help users access information anytime and anywhere (Remenyui, 2008) whereas people are no longer required advanced IT skills to create and manipulate Internet content, as anyone can participate (Isaias et al., 2009).

CONCEPTUAL FRAMEWORK

Figure 1: Proposed Conceptual Framework

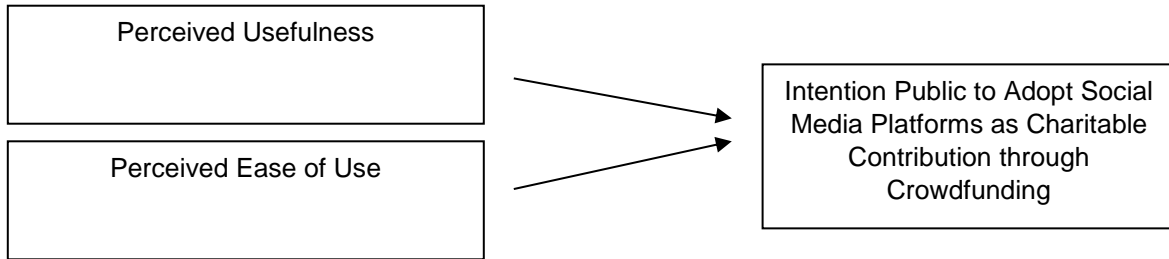


Figure 1 represents the possible determinants of intention public to adopt social media platforms as charitable contribution through crowdfunding. The intention of public to adopt social media platforms as charitable through crowdfunding might be based on the perceived usefulness of the technology as well as the perceived ease of use of the technology. Therefore, the more benefit of the technology can be offered to the public, the highly likely that the public will engage with social media platforms as charitable contribution through crowdfunding.

RESEARCH METHODOLOGY

Data will be collected from individuals using self-administered questionnaires. The respondents were mainly the individuals who actively indulge on social media platforms and were approached using purposive sampling. The exclusion criterion was placed as *“no charitable contribution through crowdfunding made from the social media platforms”*. To make the questionnaire context relevant, the questionnaire was adopted and adapted based on TAM. All constructs and items were adapted from the extent literature review and were customized to suit the purpose of this study.

CONCLUSION

Crowdfunding has been flourished as a feasible fundraising strategy through the collective efforts by public. Recently, crowdfunding platform has raised more than half million of Malaysia Ringgit which expected to encourage young and internet savvy entrepreneurs to participate in crowdfunding. Moreover, social media platforms have facilitated a new way of raising and giving money and which brought changes to the set of factors associated with success in raising charitable contributions through crowdfunding. Therefore, it is very important to identify which factors that influence the choice of public intention to adopt social media platforms for charity contribution through crowdfunding. TAM was the ground of the proposed model used in the current study and that involved two constructs: perceived usefulness and perceived ease of use. It is noted that, PU and PEOU influenced the adoption of technologies such as social media as align with time technologies has become very easy to use and their usefulness become obvious. Lastly, this study hopes to enhance and help the effort of the government in widening the internet coverage by providing more telecommunication infrastructure is commendable. Thus, government needs to be commenced to increase the internet usage among Malaysians which would eventually boost the development of the crowdfunding industry. On top of that, crowdfunding platforms operators should consider in communicating in the official language of Bahasa Malaysia on all the materials related to crowdfunding as additional effort to further reach out to the public.

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DETERMINANTS OF BIG DATA ADOPTION AMONG MALAYSIAN SMEs: USING TECHNOLOGY–ORGANIZATION–ENVIRONMENT FRAMEWORK

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Abstract

The growing significance of big data makes it imperative for companies to maximize the opportunity created by these data with a view to exploiting new opportunities and getting insights into the hidden values. Hence, Malaysian SMEs is not an exception as SMEs play significance role in the economy of Malaysia and regarded as the mainstay of country's industrial development. The level of participation of Malaysia's SMEs in big data is low, and they are unaware of the associated risk which non-application of big data could have on their business survivability. The issue is further complicated as Malaysia's SMEs are also far behind their counterparts in other countries in the region, which have recorded greater level of digitization adoption. Although several researches have been conducted on adoption of big data in developing countries, but only limited number of studies have made attempt to comprehensively examine the key factors that influence the adoption of big data in SMEs in Malaysia. It is expected that this study will bridge the literature gap for increasing the big data adoption in SME organizations in Malaysia, as well as leverage on the benefits and opportunities provided by big data with a view to enhancing the growth of the economy. An investigation of the technological features alone is insufficient to understand the adoption behavior of intricate organizational technologies. Consequently, the determinants of big data adoption in SME should be investigated from broad perspectives such as organizational, technological and environment dimensions with a view to providing holistic insights. Therefore in this study, the technology-organization-environment (TOE) framework offers a solid base for the assessment of big data within the Malaysian SME organizations. The study's population consists of SMEs located in large industrial cities in four states with the highest number of SMEs in Malaysia and will be done through survey questionnaire. The targeted respondents of this current study include the business partners, business owners, CEO, information technology (IT) managers, and information services (IS) managers who are directly involved in the organization's strategic decision-making.

Keywords: Big Data Adoption, SMEs, Technology–Organization–Environment (TOE) framework

INTRODUCTION

Organization in every sector are using big data to make better decisions, and companies using data-driven decision-making are more productive and profitable (Frick, 2014). As such companies have to deal with profound changes in the way they manage their organization, their customers and their business models (Tambe, 2014). This is taking place because new opportunities are emerging thanks to the fast evolution of big data technologies and to the enormous availability of data that firms can capture from many sources, such as social media activities, Radio Frequency Identification (RFID) tags, web information, mobile phone usage and consumer preferences expressed on the web (Davenport, 2014). Big data is a term that emerged in the last few years and its associated technologies are now relevant across industries and economic sectors. This phenomenon is in part due to the proliferation of digital data; in addition to the vast amount of data being produced by data intensive organizations. Data are present in every sector and function in the global economy. The use of big data has become the basis of growth and competition for organizations, and has become a crucial way for leading companies to outperform their competition (McGuire, Manyika, & Chui, 2012). Big data drives fundamental changes across all industries. Losing market position in a competitive and fast paced market has created a sense of urgency in incorporating big data technology into today's organizational decision-making. The introduction of new technology into an organization presents implementation and use challenges (Subashini & Kavitha, 2011). The computational analysis of big data, which consists of exceptionally large sets of data, is able to reveal patterns, trends, and associations valuable in making informed decisions. The processes used to analyze big data, however, are relatively new, and there is still much about big data and its use that remains unknown (Esteves & Curto, 2013). In addition, assessing factors that assist organizational

decision-makers involved in the use or management of technology with making informed decisions that influence the organizational acceptance and effective utilization of technology has become a critical direction for research (Venkatesh & Bala, 2008).

According to Scott (1999) an organization will be at a competitive disadvantage if it is unable to sustain the technology adoption process because it will not be able to adapt to the speed and instability caused by technological change. Technology can be a powerful tool to gain competitive advantage for two primary functions that are: 1) for supporting the business processes to produce products or services which are cost effective, and 2) for the time savings through the improvement of productive yields (Husain & Pathak, 2002). Technological progress crucially depends on the diffusion and adoption of new technologies (Fuentelsaz, Gomez, & Polo, 2003). Thus, managing the process of technology decision is imperative to ensure the implementation of technology (Rogers, 2003). This study introduces the motivation behind the study on the adoption of big data and has been narrowed down towards the small medium enterprise (SME) in Malaysia.

LITERATURE REVIEW

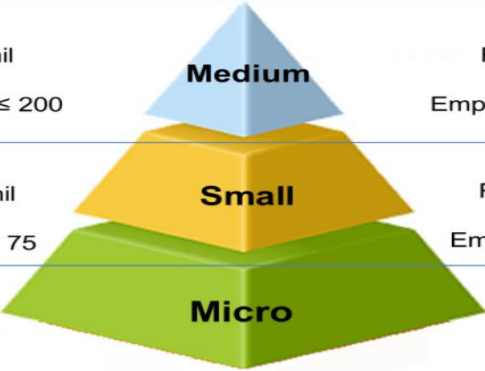
Malaysian SMEs

A general definition for Malaysian SMEs since year 2005 that has been certified by the National SME Development Council (NSDC) has been accepted across financial institutes, ministries, regulators and agencies. The implementation of a standard definition of SMEs is important to aid better recognition of SMEs in all sectors which will allow a more effective formation of SMEs policies and incorporation of improvement programs. It potentially may allow for better supervision of SMEs performance and their involvement to the Malaysia economy. The definition of SME is different between countries. In Malaysia, the definition of SMEs is:

- Manufacturing (including agro-based) and Manufacturing-related Services: Sales turnover of less than RM25 million OR full-time employees of less than 150
 - Primary Agriculture and Services (including ICT): Sales turnover of less than RM5 million OR full-time employees of less than 50
- Economy developments since 2005 such as revolutionize of business and price inflation has led to the reassessment of the definition in year 2013. The updated SME definition that has been approved in the 14th NSDC Meeting in July 2013 is
- Manufacturing: Sales turnover not exceeding RM50 million OR full-time employees not exceeding 200 workers
 - Services and other sectors: Sales turnover not exceeding RM20 million OR full-time employees not exceeding 75 workers

Detailed definition of SME by category is shown in Figure 1.

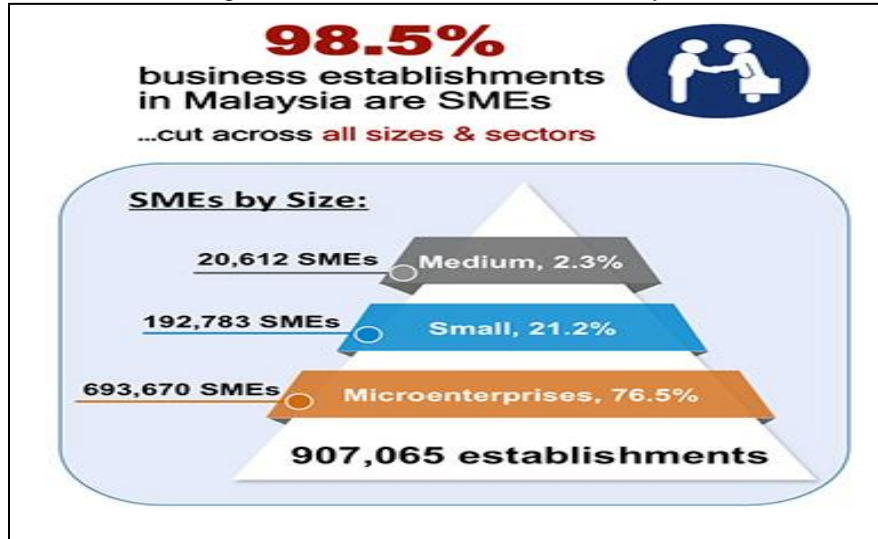
Figure 1: Detailed definition of category, namely micro, small and medium

Manufacturing		Services and Other Sectors
Sales turnover: RM15 mil ≤ RM50 mil OR Employees: From 75 to ≤ 200		Sales turnover: RM3 mil ≤ RM20 mil OR Employees: From 30 to ≤ 75
Sales turnover: RM300,000 < RM15 mil OR Employees: From 5 to < 75		Sales turnover: RM300,000 < RM3 mil OR Employees: From 5 to < 30
Sales turnover: < RM300,000 OR Employees: < 5		Sales turnover : < RM300,000 OR Employees: < 5

Source: SMECorp (2017)

SMEs play significance role in the economy of Malaysia, hence, they are regarded as the mainstay of country's industrial development (Ahmad, Abu Bakar, Faziharudean, & Mohamad Zaki, 2015; Ramayah & Ling, 2002; Saleh & Ndubisi, 2006). In fact, SMEs constitute 98.5% of the entire business organizations in Malaysia (Figure 2).

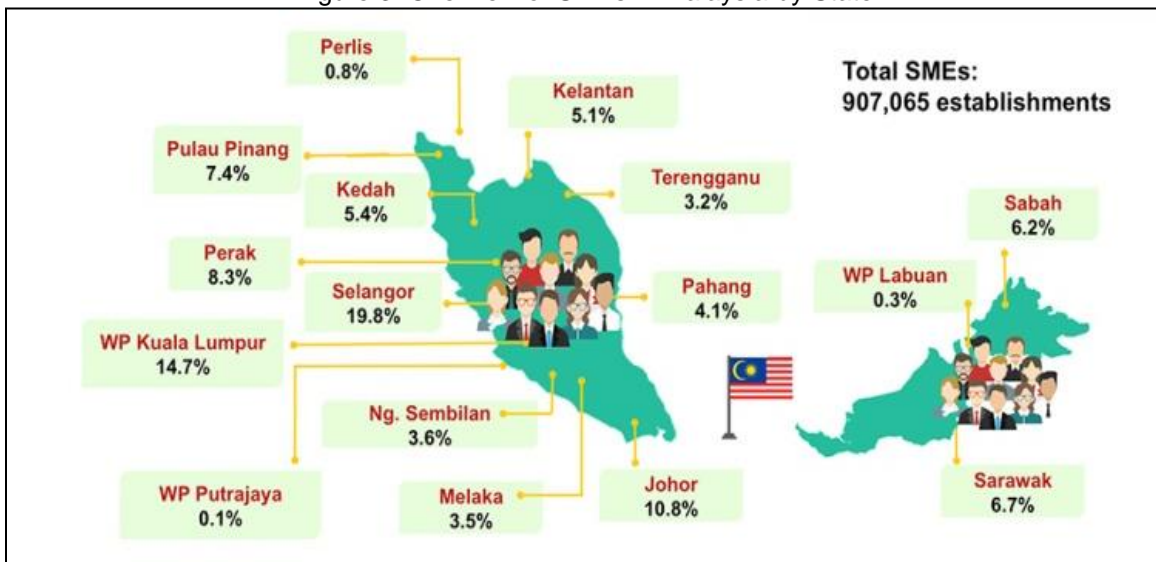
Figure 2: SME Establishments in Malaysia



Source: SMECorp (2017)

Figure 3 displays the number of SMEs in each state in Malaysia, with Selangor state having the highest number of SMEs.

Figure 3: Overview of SMEs in Malaysia by State



Source: SMECorp (2017)

Many studies have been performed over the years by academicians, business consultants and policy makers to identify the types of business issues experienced by SMEs. The issues faced by Malaysian SMEs are the short of skill and seldom use internet (Hashim, 2015). SMEs has uniqueness with limited resources, capital, human and technology (Davis & Vladica, 2006). There are also studies being done to understand the factors encouraging SMEs to use information technology (Morgan,

Colebourne, & Thomas, 2006). Most SMEs have the understanding that implementing technology in their organization as risky, complex and expensive (A. Y.-L. Chong, Chan, & Ooi, 2012).

Adoption of Big Data in Malaysian SMEs

Big data definitions have evolved rapidly, which has raised some confusion. According to Gartner IT Glossary (2017), big data is high-volume, high-velocity and high-variety information assets that demand cost-effective, innovative forms of information processing for enhanced insight and decision making. Apart from that, various scholars identify 'big data' as the "next big thing in innovation"; "the fourth paradigm of science"; "the next frontier for innovation, competition, and productivity"; "the next management revolution"; and that "big data is bringing a revolution in science and technology" (Sen, Ozturk, & Vayvay, 2016). The basis behind given arguments is that the capability of big data by changing competition by process transformation, altering corporate ecosystems and innovation; exposing value of business organization by releasing organizational capabilities and value; as well as tackling key challenges of business (Wamba, Akter, Edwards, Chopin, & Gnanzou, 2015).

Recently, although big data has attracted a great deal of attention from scholars, few researchers have attempted a comprehensive investigation of the main factors that affect organizational to adopt big data (Sun, Cegielski, Jia, & Hall, 2016). Big data are generated from social interactions, e-commerce, and business processes. Big data may provide business insights and new ideas fostering competitiveness and innovation (Esteves & Curto, 2013). By adopting systems that allow for the use of big data, organizations can realize cost reductions and improvements in the time required to offer a new service or product. The ability to use big data effectively also provides financial benefits and supports internal business decisions and objectives. Organizations must take corporate, social, and ethical responsibility for the data (Krasnow Waterman & Bruening, 2014). Emerging academic research suggests that companies that do not use big data to guide decision making are not as productive and do not experience the high returns on equity that competitors using big data experience (Brynjolfsson, Hitt, & Kim, 2011).

There is increasing recognition that the study of big data adoption has been important for policy makers, academics, businesses and governments (Chen & Zhang, 2014; Shin, 2016). The adoption of big data depended upon managerial, organization, environmental and technological factors (Dubey, Gunasekaran, Childe, Wamba, & Papadopoulos, 2016; Esteves & Curto, 2013; Kwon, Lee, & Shin, 2014; Shin, 2016). According to the mentioned researchers, apart from technological factors, there is a need to understand the impact of other factors such as benefits of big data adoption across firm and organizational and environmental characteristics. Thus, there was a need for a study from technology plus organization and environment aspects. It is not a surprise that large organizations are taking advantage of the benefits that big data offers but some entrepreneurs' are not aware that SMEs can do the same (Jones, 2014). Although large organizations are extensively utilizing big data due to the benefits that can be gained, many organizations are still divided on the necessity to adopt it especially in SMEs.

The adoption of big data at an organizational level is vital during the early diffusion phase (Sun et al., 2016). A number of organizations are still at a very early stage of adoption even though big data has been around for a couple of years (Klie, 2013). Organizations are still figuring out to completely understand the usage and benefits of big data (Sun et al., 2016). Learning to use this highly useful technology innovation application is now a strategic issue for leaders in many organizations. There are many challenges in adopting big data which has triggered practitioners and academicians to identify factors that influence the adoption of big data (Chiang, Goes, & Stohr, 2012; Ho, 2008). Other scholars have studied the challenges to big data adoption which are shortage of skilled employees, lack of training, privacy of data and so forth (Kian Chong, Shafaghi, & Leing Tan, 2011; McAfee, Brynjolfsson, & Davenport, 2012; Waller & Fawcett, 2013). Most of the technology adoption research has been carried out in developed countries (Alshamaila, Papagiannidis, & Li, 2013; Low, Chen, & Wu, 2011; Ramamurthy, Sen, & Sinha, 2008). Research in a developing country context is limited (Dubey et al., 2016; Saffu, Walker, & Hinson, 2007). Developing countries have been projected to have bigger economies than developed countries and are driving global growth (World Economic Outlook, 2014). Therefore, it is necessary to understand the usage and adoption of big data in developing economies also.

It has been stressed that theories and management practices developed in the context of developed countries need to be reexamined in the context of developing countries to fit the cultural contexts of the recipient nations (Al-Somali, Gholami, & Clegg, 2011; J. Tan, Tyler, & Manica, 2007). This is because those issues that might seem insignificant for developed countries may, otherwise, play an important role for big data adoption intention in developing countries. Thus, the need to understand whether existing theories apply to populations in the Malaysian SMEs is an important issue. As commonly known, there is a difference between developing countries and developed countries. These differences are not only from an economic standpoint, but they also concern political, environmental and social as well as cultural factors. Therefore, research findings obtained from developed countries cannot be applied directly to developing countries. Similarly, large companies are also different to small companies.

There are only a handful studies of technology adoption at the organizational level (Kung & Kung, 2015) specifically in Malaysian SMEs. This study intends to fill this gap. It is expected that the understanding the drivers to adopt big data will assist in the strategy and policy development and the shaping of the organization towards the adoption of big data. SMEs are not just 'a little big business' (Welsh & White, 1981), and so, because of their size, they exhibit unique features and behaviours such as centralized management control and decision making, being more likely to be risk averse, lacking resources and only having a limited share of the market (MacGregor & Vrazalic, 2007), all of which make it difficult for the SME to apply 'large company' strategy and especially an e-commerce strategy developed initially to fulfil the need of large businesses in developed countries.

Technology–Organization–Environment (TOE) framework

A higher unit of analysis of big data adoption is that of an organization and the environment in which it functions. Wejnert (2002) proposed a framework where determinants of innovation adoption were grouped into three major components; characteristics of innovations, characteristics of innovators, and environmental context. Similarly, Li, Troutt, Brandyberry, and Wang (2011) described a framework that classified decision factors into three dimensions; decision entity factors, decision object factors, and context factors. However, the most recognized attempt at identifying and categorizing determinants of technology adoption in organizations is presented by Louis G Tornatzky, Mitchell Fleischer, and Alok K. Chakrabarti (1990) in their book; *The Process of Technological Innovation*. Louis G Tornatzky et al. (1990) proposed a framework of how the determinants of technology adoption can be grouped into three contextual elements that influence the adoption and implementation of technological innovations in organizations. The TOE framework, recognizes that adoption of technological innovations is influenced by a range of factors in the context of the technology, organization, and external environment (Louis G Tornatzky et al., 1990). Being an organizational-level framework, TOE explains that these three elements of a firm's context stimulate and influence the technology innovation adoption-decision.

The technological context represents both the internal and external technologies available to the firm, which include existing technologies inside the firm, as well as the pool of available technologies in the market (Louis G Tornatzky et al., 1990). Researchers have primarily taken two different approaches to studying the technological context. The first approach focuses on the specifics of the innovation being studied. In describing the technological context for a given adoption-decision, most studies focus solely on the innovation characteristics; that is, the features or characteristics of the technological innovation itself (Hameed, Counsell, & Swift, 2012a; Hoti, 2015). The second approach to describe the technological context relates to researchers that look beyond the characteristics of the innovation. These researchers include a measure of the organization's readiness for the technology being studied, contending that adoption is contingent on complementary factors such as technological readiness, infrastructure, and maturity (S. Chong & Bauer, 2000; Olszak, 2015). Essentially, it is believed that the fit between the existing technology setting in a firm and the intended technology innovation will be the one of the determinants in the decision to adopt technology innovation.

The organizational context represents the intraorganizational environment, and describes the characteristics and resources of organizations that facilitate or constrain the adoption of technological innovations (Louis G Tornatzky et al., 1990). It refers to multiple characteristics that represent a firm

in general and can be in the form of organizational strategies, structure as well as policies (Teo, Ranganathan, & Dhaliwal, 2006). These formal and informal processes and structures in turn may have an effect in the adoption of technological innovation within organizations. The scholars explain that organization captures descriptive measures such as firm's business scope, management support, complexity of managerial structure measured by centralization, formalization, and vertical differentiation, the quality of human capital, and size and size-related issues such as internal slack resources and specialization.

Lastly, the environmental context refers to the domain in which a firm conducts its business – its industry, competitors, access to resources supplied by others, and dealing with the government (Louis G. Tornatzky, Mitchell Fleischer, & Alok K. Chakrabarti, 1990). This context fundamentally implies that in order for organizations to adopt new innovation or technology, there will be influences coming from the environment in which the organization operates. The external factors may include organization's clients, suppliers, its market competitors, government regulations and other related external pressure and forces. The support infrastructure for technology is also understood to impact adoption.

In most of the studies employing the TOE framework, researchers have treated factors of the technological, organizational, and environmental context as direct antecedents of adoption and implementation. To identify the antecedents of innovation adoption, the TOE framework targets the influencing factors under the technology, organization, and environment categories that can impact technology related decisions (Mishra, Konana, & Barua, 2007). For example, a study investigates the intention of discontinuing information systems (Furneaux & Wade, 2011). Another study takes up the TOE framework to investigate EDI adoption in small businesses (Kuan & Chau, 2001). A recent study explores how factors within the TOE framework influence the e-business adoption at the organizational level (Zhu, Kraemer, & Xu, 2006). A number of studies have utilized this framework to analyze IT adoption factors (e.g., (Lin & Lin, 2008; Pan & Jang, 2008; Teo et al., 2006; Zhu, Dong, Xu, & Kraemer, 2006; Zhu, Kraemer, & Xu, 2003; Zhu & Kraemer, 2005; Zhu, Kraemer, & Dedrick, 2004)). The TOE framework has substantial consistent empirical support in the literature. Thus, it provides a foundation for the analysis and consideration of suitable determinants for understanding an innovation-adoption decision (Agrawal, 2015). Therefore, present research draws upon this framework to understand the influence of antecedents within each sub-category.

Technology Factor - Cost of Adoption

Cost of adoption or in some cases called perceived cost is the cost that is incurred in the course of technology adoption (Machogu & Okiko, 2012). Chau and Hui (2001) mentioned that cost of adoption is the expenses of realizing required technologies in organizations and efforts dedicated to organizational reformation and process re-engineering. Cost is important in technology adoption. The cost involved in the adoption of technological innovations is another important technological factor that influences the intention to adopt, particularly within the SME sector (Ramayah, Ling, Taghizadeh, & Rahman, 2016; Sin Tan, Choy Chong, Lin, & Cyril Eze, 2009). Cost of adoption includes training continuity, employment, retaining technicians as well as cost of hardware (Folorunso, Shawn Ogunseye, & Sharma, 2006). Cost can also incur from planning, organizing and putting the new system into practice (Machogu & Okiko, 2012). Cost involved in big data adoption could possibly be costs of using big data technology and huge initial investment necessary to embrace big data adoption (Sun et al., 2016). One the major issues regarding big data is the infrastructure's high costs (Y. Wang & Wiebe, 2016).

Although cost of adoption has been said to be a obstacle to technology adoption (AlSoufi & Ali, 2014; Fonchamnyo, 2013; Machogu & Okiko, 2012), an organization can spend in technology adoption if returns on investment are attractive (Harfoushi & Obiedat, 2011). Likewise, cost is also found not to have a significant relationship with e-commerce adoption as the cost of software and hardware linked to this technology is not actually costly for SMEs (Rahayu & Day, 2015).

The cost of big data adoption enables organization to continue big data usage and future growth, so it is not a surprise that cost has a significant influence on organization's decision making. The cost allocation for the initial and overall investment impact an organization's intention to adopt big data

and therefore the cost of adopting big data may be a serious challenge for many organizations. Larger organizations have more funds to make possible adoption and implementation, so these organizations most likely to be early adopters of new innovations. It is not easy for small organizations to make the key investment of resources and time necessary for a successful adoption.

The use of innovations such as IT in organizations is typically followed by high start-up costs or very expensive software or online packages (Ghobakhloo, Hong, Sabouri, & Zulkifli, 2012). This condition forces SMEs to be wary about spending capital, as they recognize the cost of such technologies to be too expensive (Ghobakhloo et al., 2012). In organization level adoption of innovation, it has been said that adoption costs impact negatively on intention to use an innovation (Madlberger, 2009; Ramayah et al., 2016). Studies on the antecedents of Radio Frequency Identification (RFID) adoption intention in supply chain among firms in Austria showed that cost is one of the significant factors that impacts intention to adopt innovation (Madlberger, 2009).

Organization Factor - Management Support

Management Support refers to the level of the commitment of resources and support from the top management to the innovation (Hameed, Counsell, & Swift, 2012b). Managers such as top executives or CIO responsible for data management in the organization are prepared to allocate adequate resources and support the initiative adoption of big data (Sun et al., 2016). Technology innovation adoption is influenced by management support and thoughts toward alteration (Daylami et al., 2005). Management support has been a frequent influential factor in IS adoption investigation (Thong, Yap, & Raman, 1996), and is alleged to play a key role in all phases of innovation adoption (Hameed et al., 2012b). Management support is recognized as an vital factor in the adoption of new technologies and is positively connected to adoption (Alshamaila et al., 2013; Y.-M. Wang, Wang, & Yang, 2010). Jeyaraj, Rottman, and Lacity (2006) discovered that management support is believed to be the key link between individual and organizational technology innovation adoption. This factor is found to be crucial to preserve the importance of a potential change in the course of an articulated vision for the organization and by conveying signals to the diverse divisions of the organizations about the value of the innovation (Low et al., 2011). As a result, with better top management support, it would be easier for an organization to rise above the complexities and challenges run into in the adoption of IT (Ramamurthy et al., 2008).

Literature recommends that management support, defined here as the scale to which management acknowledge the significance of big data technology and the degree to which it is involved in related initiatives (Park, Kim, & Paik, 2015), is an necessary factor for organizational innovation adoption for two key basis. Firstly, studies have shown that management support is important for forming a encouraging environment for innovation adoption (Premkumar & Roberts, 1999). By virtue of their leadership role, top management are accountable for producing a accommodating organizational atmosphere that facilitates accessibility (Thong et al., 1996). Secondly, top management holds the power to make available and organize adequate organizational resources for inspiring, acquiring, and embracing innovations (Premkumar & Roberts, 1999). The crucial role of management in allocating resources for adoption and permitting related activities has constantly been highlighted by researchers (e.g., (Hung, Huang, Lin, Chen, & Tarn, 2016; Isma'ili, Li, Shen, & He, 2016)).

A new technology is more likely to be successfully adopted by employees and integrated into a firm's business if the employees understand the advantages of its use and have the support of their superiors. Support from top management may be necessary to ensure the commitment of resources and the cultivation of organizational climate, which are conducive to successful technology adoption. In particular, a firm's top management should be aware of the advantages that technology can bring for the future success of the firm and should influence employees to increase their awareness of the advantages that technology adoption can bring for the future success of the firm. Previous studies have regularly identified management support as a positive influential factor in the adoption and deployment of frequently studied ebusiness domains, such as e-commerce (Teo, Tan, & Buk, 1997), e-procurement (Teo, Lin, & Lai, 2009), e-markets (Duan, Deng, & Corbitt, 2012), cloud computing (Oliveira, Thomas, & Espadanal, 2014) and IoT (Hsu & Yeh, 2017). Additionally, top management support may be a significant conductor in overcoming unavoidable barriers and resistance to change in a firm.

Environmental Factor - Security & Privacy

Data gathering from individuals causes individuals' security and privacy concerns such as legal implications of collecting customers' private information (Sun et al., 2016). The utilization of big data raises apprehension as it challenges main privacy principles. Privacy is the "right of individuals or cooperative users to preserve confidentiality and control over their information when it is revealed to another person or organization" (Porambage et al., 2016). As more and more amount of data are gained about individuals, it is becoming more vital than ever to protect fundamental principles of privacy. Specifically, the substantial preservation and detail examination of socioeconomic, behavioral, financial, demographic and other exchange of data by authorities and organizations prevail privacy issues in about every area where big data is utilized (Ali et al., 2016; Jain, Gyanchandani, & Khare, 2016). From a privacy standpoint, the challenge is to make certain individuals have ample power over their individual data to avoid abuse and misuse by data owners. From the perspective of data owners, the challenge is to make sure conformity with data regulations, in parallel conserving the value of their data. Despite the fact that the conformity with privacy regulations ensure that consumers' personal information are being properly managed, the safeguard of personal data has become more and more challenging as data are shared and multiplied ever more extensively (Ghani, Hamid, & Udzir, 2016).

As the data availability keep increasing, the costs of storage are falling, and the need to preserve data is growing, governments and organizations are building substantial collections of data. With this come the mounting privacy and security concerns related to storage, access, and utilization of these data. Furthermore, the danger of data breaches is increasing. A latest occurrence in Malaysia where personal data of more than 46 million mobile phone users was reportedly leaked online, the leaked data comprised of personal details such as billing and e-mail addresses as well as SIM card information of post-paid and pre-paid mobile subscribers of at least 12 telecommunications and mobile virtual network operators (A. Tan, 2017). For the case of big data, individuals may be recognized from data that are originally extracted through the collection of multiple data sets. As a result, the prospects of big data come with risk; the users' privacy is frequently at danger. With progression in algorithms and techniques that can be used to re-identify individuals, control over personal information becomes tougher to maintain.

Data security and privacy are of major fear for telecommunications as they contain sensitive data of customers. Alongside development of big data tools, it is important to create defense to anticipate data abuse (Bryant, Katz, & Lazowska, 2008). Policies such as the South African Protection of Personal Information (PoPI) Act of 2013, and other such acts might not foresee the speedy development of these technologies, and provide only limited guidance on how an organization should collect and use data to predict or respond to issues such as natural disasters, national security threats or emergencies. Further, law with regards to the governance of Big Data is still nascent (Badrick, 2017).

Weak security creates user resistance to the adoption of big data. It also leads to financial loss and damage to a firm's reputation. Without installing proper security mechanisms, confidential information could be transmitted inadvertently to unintended parties.

The current study approached perceived security from a broader perspective, including not only the technical aspects such as confidentiality and authentication (Flavián & Guinalú, 2006), but also referring to a person's comprehensive sense of security and well-being in the cloud environment (Shin, 2013). A numerous studies have reported that security concerns were a major barrier to adoption of the new big data (Esteves & Curto, 2013; Kshetri, 2014). It is reasonable to infer that the perceived security of big data will influence the attitude and intentions towards adopting big data.

CONCEPTUAL FRAMEWORK

The conceptual framework in this study is developed based on the TOE framework. The dependency to adopt big data in Malaysian SMEs is researched from a direct effect of technological, organizational and environmental factors. The factors from this TOE framework which are cost of adoption,

management support, and security & privacy are tested with the determinant to adopt big data in Malaysian SMEs.

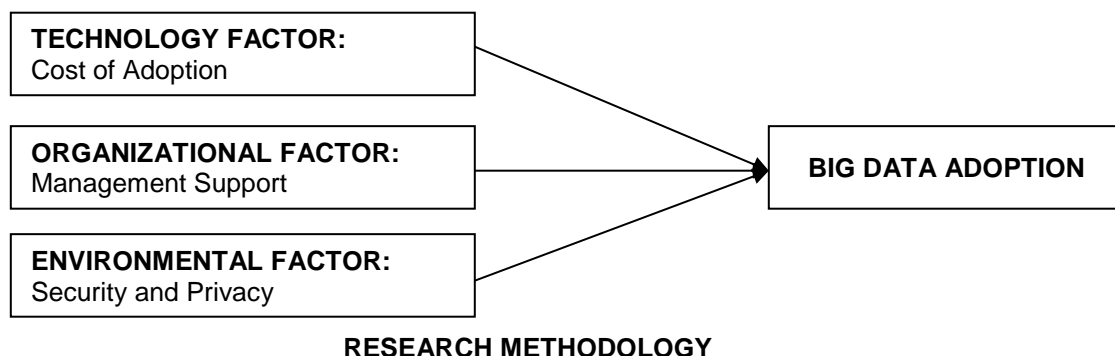
The cost required to adopt the technology innovations is a vital factor that influences the adoption of the technology (Folorunso et al., 2006; Kurnia, Smith, & Lee, 2006). For example, studies in understanding mobile marketing adoption by South African SMEs revealed that cost negatively influence the intention to use mobile marketing (Maduku, Mpinganjira, & Duh, 2016). In her study of the antecedents of RFID adoption in supply chain among firms in Austria, cost was indicated as one of the significant factors of innovation adoption (Madlberger, 2009). Cost of adoption was observed to negatively influence the chances of electronic supply chain management system (e-SCM) adoption (Lin, 2014). The implementation of innovations in organizations comes with a high startup costs (Ghobakhloo et al., 2012). This circumstance forces SMEs to be wary about spending money and influence their decision whether to adopt the technology or not. Organizations which perceive these costs to be very high or that they are incapable to invest financially will hesitate to adopt big data.

Management support especially top management support such as the CEO/Manager/Owner indicates the responsibility of the executive leadership in aiding and implementing innovation within the organization's strategy as a whole. Literature suggest that the top management acknowledge the value of big data technology (Park et al., 2015). Top management represents potential decision makers in an organization (Premkumar & Roberts, 1999) and can provide a positive atmosphere for adoption of new technologies by providing adequate resources and overcoming and resistance to change. Top management support significantly affects the adoption of mobile marketing in SMEs (Maduku et al., 2016) and noted that top management support is positively related to the likelihood of organization's adoption of e-commerce (Awiagah, Kang, & Lim, 2016) and e-SCM (Lin, 2014). However top management support was not significant in the adoption of cloud computing in the manufacturing sector (Oliveira et al., 2014). Therefore, the following hypotheses are proposed:

Security and privacy regulatory concerns indicate the extent of concern in making certain that the compliance to security and data privacy regulations in relation to big data adoption. Traditional data protection regulation was simply based on structured data which is easier to handle and analyze to ensure its relevant usage (Cumbley & Church 2013). From a big data perspective it mostly consists of unstructured data making it a challenge to comply with data privacy act. Most organization would want to comply with these regulations, however the total unstructured data the organization have to manage with in a big data environment makes it tough for them to do so (Kim et al. 2014). This may result in significant decline of organization's interest in big data adoption. Numerous studies have reported that security concerns were a major barrier to adoption of the new big data (Esteves & Curto, 2013; Kshetri, 2014a). In a study of cloud computing adoption in Australian SMEs, the findings revealed that security and privacy doesn't influence the adoption decision (Senarathna, Yeoh, Warren, & Salzman, 2016).

Along these lines, the conceptual framework as shown in Figure 4 is being proposed.

Figure 4: Proposed Conceptual Framework



Sampling Design

This research is a cross-sectional study that utilizes survey methodology to provide answers to the research questions. According to Saunders, Lewis, and Thornhill (2009), cross-sectional studies usually employ the survey approach. Basically, a cross sectional study selects a sample from the population under study so as to obtain an idea of the ongoing situation (Hussey & Hussey, 1997). A cross sectional study technique is not expensive, economical in terms of time and resources and is entirely safe. Therefore, the survey method is the most appropriate method for this study since a survey is an effective tool for data collection.

The study's population consists of the service SMEs located in large industrial cities in four states with the highest number of SMEs in Malaysia (such as Kuala Lumpur, Selangor, Penang and Johor) (SMECorp, 2017). The targeted respondents of this current study include the business partners, business owners, CEO, information technology (IT) managers, and information services (IS) managers who are directly involved in the organization's strategic decision-making. Therefore, the unit of analysis used in this research is the organization level (i.e. SMEs in Malaysia). This study uses a self-administrated method to conduct the survey. It is necessary to choose the appropriate sample size in a research. Basically, the minimum number of respondents should be at least ten times the entire number of variables for analysis (F. Hair Jr, Sarstedt, Hopkins, & G. Kuppelwieser, 2014). Since four variables will be analyzed in this research, the minimum number of samples should be 40 samples (i.e. 4×10).

The essence of the survey questionnaire is to collect the appropriate data for analysis. The researcher designed the questionnaire based on the conceptual framework to ensure that every latent variable is appropriately measured. The questionnaire contains clear instructions on how to respond to the items, and this will assist the respondents to understand what they are expected to do. The questionnaire has two sections, and each section has clear instructions. The Likert-type scale is the most frequently used scaled question. (Hair, Black, Babin, Anderson, & Tatham, 2006) recommended Likert scales as the best scales when a researcher uses a self-administered survey questionnaire for data collection. As an interval scale, the Likert scales enable the respondents to indicate their agreement or disagreement with a given item by rating various mental or behavioral belief statements (Hair et al., 2006). The remaining part of this section describes the procedure followed to design the questionnaire.

Data and Statistical Analysis

After data collection, it is important to analyze the data in order to provide answers to the research questions as well as test the proposed hypotheses in line with the objectives of the study. For data analysis, this study will use two statistical softwares namely IBM Statistical Package for Social Sciences (SPSS) version 23 and Smart Partial Least Squares (Smart PLS) version 3.0. The first part of the analysis is the descriptive statistical analyzed with IBM SPSS Statistics version 23. Thus, the statistical tool that will be employed in this study can analyze data and create the relevant reports, trends, charts and plots. The tool can analyze large quantity of data and diverse statistical analysis, which make it popular in the practical world (Hair Jr, Hult, Ringle, & Sarstedt, 2016). Furthermore, the study will use Smart PLS software version 3.0 to test the measurement model and the structural model based on the proposed hypotheses and conceptual framework.

CONCLUSION

This study will contribute to both management theories and practical applications to the SMEs not only in Malaysia but also in ASEAN countries. The conceptual research framework developed in this study is supported by TOE framework. Big data adoption is a complex organization technology and has multi-faceted effect on organizations. Thus, a model of big data adoption for organization in Malaysian SMEs is being proposed to explain this phenomenon. This research will be able to find crucial results about SMEs in Malaysia, regarding factors affecting big data adoption which will be able to assist SMEs in determining the crucial factors to focus on in order to accelerate the adoption of big data.

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THE IMPORTANCE OF GOOD CORPORATE GOVERNANCE PRACTICES AMONG SHARIAH-COMPLIANT COMPANIES IN MALAYSIA

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Abstract

The aim of corporate governance is to promote strong, viable competitive corporations accountable to stakeholders. Good corporate governance improves overall performance and promotes trust among shareholders and other stakeholders. Besides, good corporate governance also provides for sound strategic planning and better risk management. As Islamic businesses are currently gaining worldwide acceptance, Malaysia is becoming a centre for Islamic business activities. The concerns for Shariah-compliance have brought a new dimension of governance which falls under the corporate governance framework. Companies that embrace best practices for governance continually move toward long-term sustainability and Shariah-compliant companies also are not excluded. Good governance prevents litigiousness and provides far-reaching legal protections for Shariah-compliant companies. Thus, the importance of good corporate governance practices among Shariah-compliant companies is highlighted in this paper. This conceptual paper extends the current literature on corporate governance practice in Malaysia. This paper should be able to assist the regulators, industrial players, Shariah advisors and researchers regarding the good corporate governance practices among Shariah-compliant companies in Malaysia.

Keywords: Corporate Governance, Best Practices, Shariah-compliance, Performance

INTRODUCTION

Corporate governance is one of the vital parts of any corporation's development, as it plays a role in designing and promoting principles of fairness, accountability and transparency. It seems that the Western concept and principles of corporate governance are very similar to Islamic perspectives and are in fact highly commendable in Islam, despite the fact that they stem from two different epistemological orientations. Many people are with the view that only big established organizations or public companies with a long list of shareholders need to care about, or will be favored if corporate governance practices are implemented. The truth remains that every company, public and private, small and big, established or new startup, compete in a society where good governance is vital for business. There is no general size; nevertheless, a governance practice of the right size will cause a positive impact on the long-term viability and performance of every organization.

There has been much debate and discourse on the issue of corporate governance for many years. The concept of corporate governance is becoming much more popular since there have been more corporate failures due to ineffective governance. Basically, there is no consensus on the definition and concept of corporate governance. This is due to the different understandings of the goals of corporations with respect to different models of corporate governance, as well as a large number of distinct economic systems. As a result, there are various definitions and concepts of corporate governance propounded by different parties that basically reflect their special interest in the field. The increased attention on the issue of corporate governance is due to the growth of institutional investors, the weaknesses and defects of a 'shareholder model' of corporate governance, a shift away from the traditional shareholder value system to a stakeholder model, and impact of the globalization of the financial market.

Hence, the Malaysian Code of Corporate Governance is recommended to all listed companies including the Shariah-compliant companies. Shariah-compliant companies or Shariah approved companies are companies on Bursa Malaysia with core activities which are not contrary to the Shariah

principles (Securities Commission, 2018). Hence, companies whose activities are in conflict with the Shariah rules are classified as non-Shariah compliant companies. As at 31st May 2019 there are 689 number of Shariah-compliant securities listed on Bursa Malaysia or 77 % of total listed securities (Bursa Malaysia, 2018). In Malaysia, the Islamic capital market with Shariah-compliant companies is expected not to engage in activities that go against the religion code of conduct (Sanusi et al 2015). Malaysia with its unique historical background, multi-culture and religions with the majority of its population being Muslims has become a hub for Islamic business activities. As far as Islam as a religion is concerned, it is considered as a significant force in influencing accounting matters (Sulaiman, 2001).

REGULATORY BODIES IN MALAYSIA

There are three main regulatory bodies for the Malaysian capital market: the Bursa Malaysia Berhad, the Securities Commission and the Labuan Offshore Financial Services Authority (LOFSA), their scope and jurisdiction encompassing both Islamic and conventional finance matters.

Bursa Malaysia Berhad (BMB)

The first move towards securities trading occurred in 1930 when the Singapore Stockbrokers' Association was established, however, the first formal organization for the public trading of securities commenced when the Malayan Stock Exchange was established in 1960. The Stock Exchange of Malaysia came into being in 1964 and was known as the Stock Exchange of Malaysia and Singapore, but in 1973, it was divided into the Kuala Lumpur Stock Exchange Berhad and the Stock Exchange of Singapore (Bursa Malaysia, 2009a). The KLSE is a self-regulating organization that governs the conducts of its members (stock broking firms) in securities dealing. Established to provide a central marketplace for buyers and sellers to transact business in shares, bonds and various other securities of Malaysian listed companies, it is also responsible for the surveillance of the market place and the requirements and standards being maintained by listed companies (Bursa Malaysia, 2009a).

On April 14, 2004, the name of the Kuala Lumpur Stock Exchange was changed to Bursa Malaysia Berhad following its demutualisation³ and was changed with the purpose of enhancing its competitive position and to respond to global trends in the exchange sector. On 18 March 2005, Bursa Malaysia was listed on the Main Board of Bursa Malaysia Securities Berhad as an exchange holding company, approved under Section 15 of the Capital Markets and Services Act 2007. It operates a fully-integrated exchange, offering the complete range of exchange-related services including trading, clearing, settlement and depository services (Bursa Malaysia, 2009a).

Today, Bursa Malaysia is one of the largest stock markets in Asia with just under 1,000 listed companies offering a wide range of investment choices to the world (Bursa Malaysia, 2009b). All listed companies are either on the Main Market for large and medium size capitalised companies, or the ACE (Access, Certainty and Efficiency) market for high growth and technology companies. The main differences between the requirements for listing on the Main Market and ACE market are in terms of minimum paid up capital and profit track record. Currently, the Malaysian capital market is governed by the Capital Markets and Services Act 2007, the Securities Industry (Central Depositories Act) 1991, the Securities Commission Act 1993, the Companies Act 1965, the Offshore Companies Act 1990 and the Labuan Offshore Securities Industry Act 1995. Figure 1 represents the regulatory structure of the Malaysian capital market, which is ultimately governed by the Ministry of Finance.

Securities Commission

The Securities Commission is the sole regulatory body for the regulation and development of the capital market in Malaysia and was set up under the Securities Commission Act (SCA) 1993. The Commission is responsible for the regulation and supervision of the activities of the market institutions, reporting directly to the Minister of Finance. In addition the Commission is obliged to encourage and promote the development of the securities and futures markets in Malaysia (Securities Commission, 2009a).

Labuan Offshore Financial Services Authority (LOFSA)

The Labuan Offshore Financial Services Authority (LOFSA)⁴ is the authority which regulates the Malaysian offshore capital market and is assisted by the Labuan International Financial Exchange Inc (LFX)⁵, a wholly-owned subsidiary of Bursa Malaysia Berhad. The LFX is a web-based financial exchange that provides listing and trading facilities for a wide range of financial and non-financial products, including Islamic financial products.

ISLAMIC CAPITAL MARKET

The unique feature of the Malaysian capital market is that the Islamic Capital Market runs concurrently with the conventional capital market. The Islamic capital market refers to the market where capital market activities are carried out in ways that do not conflict with the conscience of Muslims and the religion of Islam. Transactions in Islamic Capital Market are free from elements such as usury (Collins & Hribar), gambling (maisir) and ambiguity (gharar) (Securities Commission, 2009b). Importantly, the requirements for disclosure, transparency and governance apply equally to both Islamic and conventional products, thus ensuring that an investor in an Islamic product receives the same legal and regulatory protection and recourse that would be available to investors in a conventional product, known as first tier regulations. For companies, products and services of the Islamic Capital Market, there is an additional requirement of complying with Islamic law, or Shariah, known as the second tier regulation.

SHARIAH COMPLIANT STATUS

The importance of the Shariah-compliant listed companies in contributing to the Malaysian economic growth is undeniable (Hooy & Ali, 2017). The Malaysian Shariah-complaint companies include large and small, private and public companies from different sectors namely consumer products, the consumer products, industrial products, mining, construction, trading and services, properties, plantation, technology, infrastructure, finance, hotels and closed-end fund. Part of Malaysia's pioneering efforts to create an organised and efficient Islamic capital market was the establishment of the Islamic Capital Market Department (ICMD) and the Shariah Advisory Council (SAC) in 1996. The Shariah Advisory Council is also responsible for screening, reviewing and identifying the process for attaining Shariah compliant status. There are two parameters considered in the selection process - qualitative and quantitative.

Qualitative Parameter

The initial focus is on the goals and services offered by the company using a set of criteria that have been formulated as basic guidelines in the selection process (Securities Commission, 2018). Companies that carry out any non-permissible core activities will not qualify as Shariah compliant. Non-permissible activities encompass: financial services based on riba (interest); maisir (gambling); the manufacture or sale of nonhalal products or related products; conventional insurance; certain entertainment activities that are not permitted according to Shariah; the manufacture or sale of tobacco-based products or related products; broking or trading in securities that are not Shariah-approved securities; and other activities that are regarded as not permitted according to Shariah. For companies with activities comprising both permitted and non-permitted elements, the Shariah Advisory Council considers two additional criteria: (1) the public perception or image of the company and (2) whether the core activities of the company are important and considered beneficial to Muslims and Malaysia. The non-permitted element must be very small and involve matters which are common and difficult to avoid, or are customary and are rights of the non-Muslim community which are accepted by Islam.

Quantitative Parameters

The second stage of evaluating Shariah approval requires assessment of relevant quantitative parameters. The Shariah Advisory Council has established several benchmarks in order to determine the tolerable level of mixed contributions from permitted and non-permitted activities, based on reasoning from the source of Shariah by qualified Shariah scholars (Securities Commission, 2018). The securities of the company will be classified as Shariah compliant if the contributions from non-permissible activities do not exceed the following benchmarks:

- a. A five percent benchmark for activities that are clearly prohibited such as interest, gambling, liquor and pork.
- b. A ten percent benchmark for activities that involve elements that affect most people and are difficult to avoid, such as interest income from fixed deposits in conventional banks, and for tobacco related activities.
- c. A twenty percent benchmark for non Shariah-compliant activities such as rental payments from premises that are involved in gambling, sale of liquor etc.
- d. A twenty-five percent benchmark for activities that may affect the Shariah-approved status such as hotel and resort operations, share trading, stock broking and other activities that are not Shariah approved.

The Securities Commission compiles the decisions of the SAC and published the list of Shariah-compliant stocks twice a year in April and October, however the issuing date was changed in 2007 to May and November in order to coordinate with the Bursa Malaysia Shariah Index. The list of Shariah-compliant stocks gives investors, especially Muslims, the necessary guidance, opportunity and confidence to select and invest in the listed securities or companies that comply with the Shariah principles.

CONCEPTUAL DEFINITION OF CORPORATE GOVERNANCE

The discourse on corporate governance as a discipline in its own right is relatively new as it has evolved over centuries (Cadbury, 1999). There are various definitions of corporate governance and the absence of any real consensus on its actual meaning leads to various interpretations. The OECD (2004) provides a general definition of corporate governance as “a set of relationships between a company’s management, its board, its shareholders, and other stakeholders”. The main function of corporate governance is to reduce agency costs due to conglomerate mergers and hostile takeovers; it then evolves into other areas, including the role of institutional investors as corporate monitors to control managerial shirking and to maximize shareholder value. Corporate governance system also is a set of legal rules, incentives and behaviours that support the reliance by investors in order to maximize the economic efficiency of the firm.

A definition by the Finance Committee on Corporate Governance in Malaysia in the Report on Corporate Governance (2002) stated that: “Corporate governance is the process and structure used to direct and manage the business and affairs of the company towards enhancing business prosperity and corporate accountability with the ultimate objective of realizing long term shareholder value, whilst taking account the interests of other stakeholders”. This indicates that corporate governance is not only applied to the shareholders but the other stakeholders as well. From the economic perspective, corporate governance is an important element of achieving an allocative efficiency in which scarce funds are moved to investment project with the highest returns. In practice, efficiency is achieved when at given level of risk, investments project offer the highest return exceeding its cost of capital. The crisis indicated how the failure to regulate good governance affected the mobilization of funds in an effective way.

Corporate finance on the other hand, concerns on the effectiveness of corporate governance as an assurance in protecting the invested funds and to generate returns. Corporate governance mechanisms assure investor in organizations that they will receive adequate returns in their investments. The basic principles of good corporate governance are to promote transparent and efficient markets, protect and facilitate the exercise of shareholder’s rights, ensure the equitable treatment of all shareholders, and ensure that timely and accurate disclosure is made on all material matters (Chen, Kao, Tsao, & Wu, 2007). Poor corporate governance practice in most Asian countries has been acknowledged as a significant contributing factor leading to the East Asian economic downturn and financial crisis (Kim, 1998). Besides the crisis, accounting scandals in Malaysia, such as Perwaja Steel in the mid 1990’s, hastened the Malaysian government to comprehensively review and reform corporate governance in Malaysia. The financial crisis and the tragic corporate scandals in the United States and Europe have led to several corporate governance reforms around the world.

The Malaysian Code of Corporate Governance (MCCG, 2000) which sets out the principles and best practices of corporate governance for Malaysian public listed companies was released by the Finance

Committee on Corporate Governance in March 2000. In January 2001, the Code was brought into effect with amendments to the Bursa Malaysia's listing requirements. Corporate governance in Malaysia has developed since the enactment of the Malaysian Companies Act in 1965 which established a governance framework including issues such as corporate structure, disclosure requirement, duties and liabilities of directors, protection of shareholders in general and minority shareholders in particular, as well as the reporting and compliance requirements. Before the Asian financial crisis of 1997, efforts to strengthen aspects of good governance practices in Malaysian corporate sectors had commenced with the introduction of the Securities and Industry Act (SIA) 1983, the Banking and Financial Institution Act in 1989, and the Securities Commission Act in 1993. In addition, the Code of Ethics for Directors had been introduced in 1996 by the Companies Commission of Malaysia as an initiative towards creating better board of directors.

POSITIVE ACCOUNTING THEORY

Positive accounting theory, as developed by Watts and Zimmerman in the 1980's, is based on the assumption that the behaviour of an individual is driven by self interest and will act in an opportunistic manner that will increase their wealth. Positive accounting theory highlights the importance of contracting costs and the roles of accounting policy choices in minimizing these costs. The theory argues that flexibility in choosing accounting policies leads to opportunistic behaviour since managers are rational and will choose accounting policies that are the most beneficial to their personal interest. (Watts & Zimmerman, 1986, 1990). Positive accounting theory also predicts that organizations will find ways and employ mechanisms to align the interest of managers (agents) to the interests of the owners of the firms (principal). On the other hand, according to agency theory, conflict of interest between managers and shareholders may arise due to separation of ownership and control of a firm (Fama & Jensen, 1983; Jensen & Meckling, 1976; Shapiro, 2005). The cost of resolving the conflict of interest between managers and shareholders is known as agency cost and it includes incentives to align managers' interests, and the monitoring cost of implementing control devices. Therefore, good corporate governance mechanisms play an important role in the alignment of the managers' and shareholders' interests and eliminate conflicts of interest between them.

AGENCY THEORY

Agency theory discusses the problems that surface in the firms due to the separation of owners and managers and emphasises on the reduction of this problem. This theory helps in implementing the various governance mechanisms to control the agents' action in the jointly held corporations. The principal or the owners, who invest their capital and take the risk to acquire the economic benefits, whereas the agents, who manage the firm are risk averse and concerned in maximising their private benefits. Both the principal and agent are having opposite risk preferences and their problem in risk-sharing creates the agency conflict, which is broadly covered under the agency theory.

Awareness of the potential drawbacks of agency problems has grown enormously over the past decade. By now it has become widely accepted that companies are exposed to agency issues whereby the separation of ownership and control leads managers to seek their personal interests at the expense of those of shareholders (Fama and Jensen, 1983). The reinforcement of the role of the board of directors and the tightening of audit and control mechanisms came to serve this purpose. The concept of corporate governance as "a set of relationships between a company's management, its board, its shareholders, and other stakeholders," has quickly emerged, fueled by the desire to mitigate recurring incidents of agency problems (OECD, 2004). In addition to that, shariah prohibits riba (interest), gharar (speculation), and the trading of money, and it calls for alternative modes of trading where the underlying products are real assets or services. Previous research of corporate governance at conventional corporations suggests certain compensation schemes linking managers' compensations to performance to align their interests with those of shareholders. Thus, without a doubt the contract structure of organizations that separate the ownership from control gives rise to agency problems resulting from the fact that the agents or managers do not bear the risks or the "wealth effects of their decisions" (Fama and Jensen, 1983).

BEST PRACTICES

There are five commonly accepted best practices. When corporations have settled on these five commonly accepted best practices, these best practices will introduce a healthy governance culture with top-down influence. Each category can be broken down further into specific concepts.

Create a diversified board of directors with a wide range of expertise, and evaluate their efforts.

Boards should include members with diverse backgrounds and skill sets. Board members should hold each other accountable for giving board duties adequate time to thoughtfully address important matters and decisions. The board should continually work to develop its members' knowledge in the area of corporate governance. Boards should collaborate with management, using their expertise to broaden perspectives and analyze decision-making. The board should do self-evaluations as part of strategic planning.

Define roles, responsibilities, and accountabilities.

Corporate bylaws should include descriptions, duties, and responsibilities of the key roles including board member, chairperson, CEO, and executive officers. The bylaws should clearly outline the responsibility and accountability for each position. Audit, compensation, and certain other responsibilities should be managed by committees. Board members should carefully review management's reports and perspectives and be willing to expand the scope of discussions with the knowledge and expertise of a qualified, diverse board.

The board should practice and hold good ethics and integrity in high regard.

The moral compass begins at the top. Corporations should emphasize the importance of integrity and ethics in all decision-making. Directors and officers set a culture of respect and compliance with state and federal laws that sets the standard for everyone else, including vendors and employees. Boards can reduce fear of incrimination by implementing policies for conflicts of interest, codes of conduct and whistleblowing. They should also establish procedures for managing and overseeing ethical matters. The board and its committees should practice financial accountability and transparency.

Tie compensation to performance.

There is a fine balance between establishing directors' fees that are high enough to recruit qualified members and setting it low enough that the directors will be challenged to perform their very best. Performance goals for all members should be specific and measurable so that their performance can be measured. A separate committee should oversee all executive compensation plans and be given responsibility for tying compensation to performance.

Board members should actively work towards effective risk management.

Board members should accept feedback from management teams about the amount of risk the company can tolerate. Potential risk should be carefully weighed with the potential return on investment. They should also build an internal framework that flags existing and potential risks. While the Sarbanes-Oxley Act of 2002 has changed the financial climate in a way that better protects consumers, efforts to comply with the Act come with increased legal, managerial, and technological costs. Smaller companies have been either forced to remain private companies or forced to delist their shares from public exchanges.

The current best practices evolved from the downturn in the financial climate in the early-to-mid-2000's. These are new trends which should be seen as guidelines at best. They are not legal standards and will not reduce exposure to state, corporate, charitable trust, and tax problems. Not having best practices is not a breach of fiduciary duty in any realm. While embracing current best practices is not a legal mandate, establishing best practices is certainly a good practice especially for the shariah compliant companies.

CONCLUSION

Corporate governance framework should ensure, in order to provide relevant information for investors' decisions, that the disclosure is timely and accurate on all material matters, is in accordance with high quality standards of accounting and disclosure and the audit and review of these disclosures

by independent, competent and qualified auditors is carried out. Moreover, there should be a high level of transparency and market discipline to build the trust of the shareholders and investors. It can be summed that the ultimate objective to achieve Shariah compliance can only be achieved by the collective supports from all involved parties. Employing good corporate governance helps the company to regulate risk and reduce the opportunity for corruption. Often, scandals and fraud within a company become more likely where directors and senior management do not have to comply with a formal governance code. A company without up to date books and registers is unlikely to attract the finest buyers. Additionally, companies are becoming increasingly aware of their public image and the need to behave ethically. By employing good corporate governance, holding board meetings and making decisions as a board, these goals can be kept in mind. Where company practices good corporate governance, with full disclosure, the public will feel that the company and brand can be trusted, ultimately helping the company reputation to grow.

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PEST ANALYSIS ON HOUSING DELIVERY SYSTEM: A STUDY ON SELL-THEN-BUILD AND BUILD-THEN-SELL SYSTEM IN MALAYSIA

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Abstract

Recent statistics have revealed that the current housing delivery system, namely the Sell-Then-Build (STB) system has failed to resolve the underlying problem to promote a sustainable housing development industry in Malaysia. Precisely, the STB system does not guarantee safeguard for house buyers from errant housing developers. The STB system has been attributed to the issue of project abandonment that is causing financial losses to housing buyers due to loan repayment even though they will not be receiving the houses. To mitigate the potential risks of the abandoned housing project, the government has encouraged all housing developers to adhere to a Build-Then-Sell (BTS) concept. However, the BTS system has contributed to property oversupply due to unsold houses. Since then, the supply-demand imbalances in the residential properties segments have increased. Several factors have been identified, including poor location, affordability levels and the need to manage profit against meeting the needs of the people. Considering the problem of the existing housing delivery system, that is STB and BTS from facing the same problems from occurring, PEST analysis is recommended for both house buyers and housing developers to assess their perspective towards housing delivery system in Malaysia. This analysis focuses on external factors to reduce the adverse impact related to housing delivery system in Malaysia. The purpose of this study to determine the importance of the external factor in relation to political, economic, social and technological; and also to evaluate how these factors will affect the housing delivery system in Malaysia to satisfy the interests of all stakeholders including property developers, house buyers, financial institutions and government agencies.

Keywords: Housing Delivery System, Sell-Then-Build, Build-Then-Sell, Developers

INTRODUCTION

In order to promote a better housing delivery system, it is vital to look into the interests of all stakeholders since their right is important as it can enable the success of the system or program implementation through better supervision. Similarly, Friedman and Miles (2006) highlight that stakeholders can be identified by considering the groups or individuals that have classifiable relationships with the achievement of the system's implementation. In Malaysia, the main stakeholders in the housing delivery system comprise housing developers, house buyers, financial institutions, and government agencies (Yusof et al., 2010). In this regard, the stakeholders' interests or well-being in terms of quality of life can be affected either positively or negatively by the decision of implementing the type of housing delivery system. Therefore, a sustainable housing delivery system should be developed, which can satisfy the interests of all stakeholders (Tan, 2013). The purpose of this study to determine the importance of the external factor in relation to political, economic, social and technological; and also to evaluate how these factors will affect the housing delivery system in Malaysia to satisfy the interests of all stakeholders including property developers, house buyers, financial institutions and government agencies. Hence, PEST analysis is recommended for both house buyers and housing developers to assess their perspective towards the housing delivery system in Malaysia. This analysis focuses on external factors to reduce the adverse impact related to housing delivery system in Malaysia.

CHALLENGES IN HOUSING DELIVERY SYSTEMS

Sell-Then-Build Housing Delivery System

Over the years, the Malaysian housing policy uses the age-old Sell Then Build (STB) concept. In other words, developers get to sell the housing units to the public before the project is completed or started. The current Minister of Housing and Local Government Zuraida Kamaruddin (New Straits

Times Press,2018) has said in a statement that this current policy is being reviewed in favour of the Build Then Sell (BTS) concept since there were over 150 abandoned property projects in Peninsular Malaysia, and the highest is in Selangor. With the BTS policy, a housing developer can only sell the house after it is built. The STB policy has been attributed to the issue of project abandonment that is causing troubles for homebuyers. These current issues mainly involved first-time house buyers who bought their houses before it has been constructed, only to find out later that the developer has abandoned the project. Once projects have been declared as being abandoned, house buyers will have to continue to service their housing loans for houses that may be nowhere near completion. In the worst-case scenario, some house buyers need to continue paying for their rented accommodation while servicing their housing loans. Thus, they will need to cough up their monthly instalments even though they will not be receiving the houses anytime soon (if ever).

The severe consequences of housing projects abandoned that are caused mainly by dishonest and irresponsible house developers have prompted the Malaysian government to rethink the viability of the STB practice and adopt a more sustainable housing delivery system. The additional burden of paying rents and monthly instalments to the bank is more than a financial nightmare for them. To a certain extent, the STB system may have met its housing targets to provide affordable housing units for all income groups in Malaysia, but it is not without flaws. Over time, the STB system faced challenges as the first of many housing project abandonment cases was reported during the 1983 economic downturn (Yusoff et al., 2010). The large numbers of abandoned housing projects in Malaysia were partly caused by the economic downturn, and partly by dishonest and unscrupulous housing developers (Rahman et al., 2013). Some of the housing developers abandoned their projects due to poor take-up rates and absconded. These were mainly small-time developers who did not undertake proper feasibility studies of the housing projects before starting and subsequently suffered from financial shortcomings as a result of their poor financial management (Lee & Tan, 2006).

Build-Then-Sell Housing Delivery System

Every country has a housing delivery system, which adopted the concept varies according to every country's suitability. For the housing market, the delivery system is a process that allows people to meet their basic needs of shelter will involve many processes from the selection of site, the financial support, the cash flow design, house construction, and the negotiation process of buying and selling (Ahlbrandt, 1974). Every country will adopt a different concept of housing delivery. The housing delivery system practised in countries such as Singapore, Australia and Hong Kong is similar to Build Then Sell which the concept give priority to the completion of the house before buyer make full payment to the developer (Mustaza and Ghazali, 2012).

Therefore, the Malaysian government has introduced 10:90 BTS system in April 2007 (The Star, 2011; Thing, 2012) to safeguard all stakeholders' interests, particularly the helpless house buyers if they become victims of abandoned housing projects. Initially, the BTS system has been implemented by the Federation of Malaysian Consumer Association (FOMCA) in 1980, due to the problem faced by house buyers. As a result, the government approve the BTS system in 1992, reflected in the seventh Malaysia plan presented in the House of Commons and by then Prime Minister Tun Dr Mahathir Mohamad in 1996 (Almi and Hajar,2017). Although the BTS system was introduced, it is still not widely implemented where the developers are still given an option to carry out their housing development (Yusof, 2010). Although there are found to be different in both STB and BTS system, housing delivery in Malaysia still have common as in terms of their delivery process, and buyers still need to pay 10% to 30 % of the purchase price respectively, while remaining after completion of the project. According to Alagesh (2013), the 10:90 BTS system can benefit housing developers because actual construction costs are known at the time of sale. Furthermore, better quality houses will be built because house buyers will only seek quality houses, and subsequently, this will enhance the image of the housing industry. Undoubtedly, complaints such as substandard workmanship, late delivery of houses, and abandoned projects can be reduced with the implementation of the 10:90 BTS system (Jeyaraj, 2001).

In 2012, the government had planned to set 2015 as the policy date to make the 10:90 BTS system a mandatory housing delivery system in Malaysia. The implementation of this system was to be on a voluntary trial period for two years, followed by an evaluation of its effectiveness in enhancing the

sustainability of the housing delivery system in Malaysia. In order to facilitate the adoption of the 10:90 BTS system, the Malaysian government offered several incentives to encourage the housing developers, such as fast track approval in their applications for rezoning, subdivision, planning permission, and building plan approval within four months. For this, a one-stop-centre (OSC) was set up to accelerate the process of managing and approving the housing projects (Phang and Tan, 2016).

However, the BTS system has contributed to imbalance supply-demand within the residential property in Malaysia. The unsold residential property has increased with the majority of the unsold property being in the above RM250,000 price category (Economics Department of Bank Negara Malaysia, 2017). The statistic in 2017 shows that, there are 33.9% of unsold residential property within RM250,000-RM500,000 price range, 35.3% within RM500,000-RM1,000,000 price range and 13.8% for more than RM1,000,000 price range. Besides, there are also 17% of unsold residential property within the affordable price range, which is below RM250,000 (Economics Department of Bank Negara Malaysia, 2017). This scenario has proven that the house price is not the core factor for unsold residential property in Malaysia. Several factors have been identified that causes the increase of unsold property, including, the unattractive location of some affordable housing projects due to factors such as distance from workplaces and low transport connectivity. In addition, the unsold affordable homes may reflect households' preference towards landed properties over high-rise properties. Lastly, applicant registries maintained by providers of affordable housing may comprise many non-creditworthy applicants, resulting in delays in the allocation of affordable homes. As we are all aware, under the BTS system, the housing developers fund their projects using their internal funds and some of them exercising the proceeds from capital market issuances. In certain cases, if the developers are unable to secure bank borrowing from any financial institutions, they will require huge shareholders' fund and internal capital commitment. The issue on the unsold residential property must be resolved because it will give a negative impact on the financial capacity of property developers to carry out the housing development. As such, this issue needs to be observed by all parties especially the Federal, state government and housing developers itself to cope the imbalance of supply and demand in the property market and to mitigate any potential risks to macroeconomic and financial stability.

PEST ANALYSIS

PEST analysis is a measurement tool which is used to assess markets for a particular product or a business at a given time frame. PEST is an acronym for political, economic, social and technological. It is a way to assess these four factors and understanding how these external forces impact the industry in making strategic business decisions, planning marketing activities, product development and research.

Political factor related to government regulations or any defined rules for that particular industry or business. It also involves study of tax policy which includes exemptions if any, employment laws, and environment laws. Economic factors on the other hand, focus on the macro economy such as interest rates, economic growth, exchange rate as well as inflation rate. These factors also help in accessing the demand, costing of the product, expansion, and growth. Conversely, social factors involve the study of demographics, as well as the target customers. These factors help in gauging the potential size of the market. It includes study of population growth, age distribution, and career attitude. With these, an industry can understand how buyer's needs are shaped and what brings them to the market for a purchase. As we all know, technology changes very rapidly, and buyers are hungry to adopt new technology. Precisely, technological factor evaluate how technology can either positively or negatively impact the introduction of a product or service into a marketplace. These factors include technological advancements, lifecycle of technologies, the role of the internet, and the spending on technology research by the government.

Political Factors

Political intervention is considering as an ongoing issue exists in a developed and developing country. Indirectly, this intervention allows the government to play crucial roles in-country development and growth by implementing rules, regulations, policies and other legal issues within lines of national development. Zhang (2005) identified a stable political system, favourable economic system,

adequate financial market, predictable currency exchange risk, low-interest rate, long-term debt financing, a favourable legal framework and government support, as critical to the success of public and private housing projects cited by Musa et al. (2015). Li et al., (2005) identified good governance, a favourable legal framework, governmental involvement through the provision of guarantees, available financial market, political support, a sound economic policy and a stable macro-economic environment as critical factors to the success of public and private housing construction projects cite by Musa et al. (2015).

In addition, Musa et al. (2015), stress that political factor is considered as government support to both developers and house buyers, with intent to reduce the risk of management for former and provide affordable housing for all income groups. Chen et al. (2012) views that government intervention emphasises on providing incentives and enabling an environment for public housing development. Moreover, government failure affects the success rate of overall housing sector development (Pugh, 2001). In the finding of Musa et al. (2015) shows that political factor has a direct effect on project success and the result is consistent with Hwang and Lim (2013) and Cheung, Chan and Kajewski (2012) who stress the importance of a stable political environment in the successful implementation of projects. Besides, Taherkhani et al. (2012) argued that government support should be localised and precisely directed to reduce the loss of capital and income, as well as to provide a standard regulation for housing industries. Hence, political intervention gives a substantial impact on housing industries.

Economic Factors

For the housing delivery system is a process that allows people to meet their basic needs of shelter will involve many processes from the selection of site, financial support, the cash flow design, house construction, and negotiation on buying and selling (Alhbrandt,1974). According to Makinde (2014), he reviews the past and current housing delivery in Nigeria and analysed the demand and supply issue. This paper examined economic factors were responsible for housing delivery system. Agus (2001) found that low-cost housing represents a serious national problem in developing and developing countries. The problem is more in developing countries, but the issue of low cost has usually been increasing in economic, social, technological and political aspects. The Malaysia government realised the problem and has created ambitious public housing programs. Moreover, the cost of housing, which has escalated greater than household earnings, has given negative impacts on housing delivery system to the poor. Besides, it reduces the capability of the poor to have enough expenses and to buy an affordable house.

Housing demand is influenced by several factors, such as an increase in economic activity that has led to an increased demand for labour and urban-rural immigration. However, for housing supply, various authorities have offered strategies for improving housing delivery in Nigeria. Most of the researchers suggested the co-operative housing model, advocated a simple land allocation system and encouraged commercialising housing support services for the poor and low income (Fasakin,1998; Oduwara,1998 & Omele,2001). The study by Aribigbola (2008), explores the circumstances in which housing delivery are implemented in developing countries using Akure in the Ondo state of Nigeria as a case study. The paper reveals that the majority of residents of the city and low-income earners that cannot afford housing that is produced because of the system. In this paper, explore the various programs and policies that have been introduced to solve the housing problem in Nigeria. They examine the circumstances and economic conditions in Nigeria under which the policy is introduced. They found that due to the economic and environmental context of housing policy has a significant proportion of householders in the city are facing housing affordability problem particularly concerning the quality of housing to the quality of the built environment.

Social Factors

Social factors focus primarily on consumers and prospective customers. Buying trends, lifestyle choices, population rates, education level and social classes affect how consumers decide to buy a house. It a major concern as well from the perspectives of housing developers to build or construct a house based on the requirement to fulfil consumer's social needs. In order to achieve sustainability in the housing industry in Malaysia, housing developers should regulate their housing activities to suit households' needs and wants.

Housing developers should do an assessment called as housing evaluation, which it will, provides the necessary information to improve the design and development of housing projects in future (Preiser, 1989). In order to assess the performance of housing, an appropriate indicator has to be developed. Amongst the several indicators developed, the concept of satisfaction has become the most extensively used indicators to evaluate the performance of housing (Adriaanse, 2007; Kellekc & Berkoz, 2006; Paris & Kangari, 2005). Ogu (2002) has interpreted, housing satisfaction is the degree of contentment experienced by a household with reference to the current housing situation, and it is a non-economic and normative qualitative evaluation approach to assess the quality of housing units. Households judge their housing conditions based on the real housing situation and housing norms, and they are likely to express a high level of satisfaction with housing if the households' current housing situation meets the norms. On the other hand, the mismatch between housing situation and norms may result in a housing deficit, which in turn gives rise to housing satisfaction (Tan, 2008).

Previous housing studies have focused on the relationship between homeownership and housing satisfaction and test whether homeowners are satisfied with their housing and neighbourhood conditions. Homeownership has been shown to exert a reflective influence on residential evaluation (Barcus, 2004; Elsinga & Hoekstra, 2005). Previous researchers have developed housing satisfaction models and found a varying assortment of determinants to be significant to housing satisfaction ranging from housing, demographics, to socio-economic variables. This is supported by Tan (2008) that the degree of housing satisfaction depends on the types of homeownership externalities that households are expected to receive, as defined by local amenities and social capital investment, neighbourhood stability and financial benefits of homeownership which are reflecting the social context.

Besides that, the quality of communities and connection with neighbours can be improved through homeownership programs. Rossi and Weber (1996) have found that local amenities and social capital are the two elements most of the homeowners believed to be more likely to invest. DisPasquale and Glaeser (1999) supported that there are significant connections between homeownership and a wide variety of social capital and citizenship variables. The condition in the surrounding neighbourhood affect equity homeowners; thus, homeowners have to work to influence these conditions through participating in local amenities and social capital investment.

Additionally, this supported by Bolin, Lindgren, Lindstrom, and Nystedt (2003), which defined social capital consists of all the networks, norms, structures and institutions, which facilitate social interaction. Homeowners invest in social capital by developing a frequent connection with their neighbours through communicating and interacting. Kan (2007) revealed social ties with neighbours living nearby may mitigate neighbourhood instability and promote neighbourhood cohesion by encouraging households to stay on as they can derive financial and emotional supports from its social networks. Furthermore, frequent interaction with neighbours will develop positive health outcome of household (Poortinga, Dunstan, & Fone, 2008). Besides that, studies done by Aaronson (2000) and Harkness & Newman (2003) has found that as investment in social capital grows, it is possible that children of homeowners do better in school to be a better man and are less probable to be misbehaviour and can avoiding them from been trapped in social crime.

Another element that the housing developer needs to be concern is neighbourhood stability. Neighbourhood stability defined as those physical, economic or social structures of the neighbourhood that are linked with the preservation and potential value growth of a property owner's investment in a neighbourhood. Neighbourhood stability may be shown to have a positive relationship with housing satisfaction. Means that, the longer the homeowners stay, the more satisfied they become. Studies done by Rohe and steward (1996) proved that a higher rate of homeownership is often thought to promote stability in the neighbourhood. Homeowners will choose to stay in the neighbourhood for a long time because they will not incur transaction costs associated with buying and selling the houses. This supported by Aaronson (2000) and Lien, Wu, & Lin (2008) shown that there is a positive relationship between children education and behaviour with neighbourhood stability. Education outcomes and behaviour of the children of homeowners will improve as the

neighbourhood stability improves. Residential mobility has been as a critical threat to the maintenance of social capital (Crowder & South, 2003). In the senses of children development, children need to put less effort to adapt with the changes to the new social network for them to have better school environments experiences and residential stability (Lien et al., 2008).

Most of the empirical studies have identified the three most preferable housing characteristics, which are house structural attributes, location and neighbourhood condition as a key measurement of housing satisfaction among homeowner. First, Housing characteristics can be measured objectively and subjectively. (Chapman & Lombard, 2006; Khana et al., 2003). House structural attributes comprise of internal space in a house such as a kitchen, laundry and washing area, size of living area, dining area, number of bedroom and bathroom, a residence hall for a homeowner to describe the housing quality and privacy which all these aspects will affect the social densities. Safety and cleanliness factors such as garbage disposal, free from pollution area, ventilation and brightness, peaceful area, security guard, gates house are also an essential factor that housing developer needs to put more attention.

The second characteristic is location, good and favourable locational housing area is important to develop housing satisfaction among homeowners. Strategic location and accessibility to the central business district and local amenities such as schools, hospitals, shopping centres, public transportation centres, police station, sport and recreation needs are primary attributes likely preferable among homeowners (Gibson, 2007; Tan, 2011). Hence, housing developers to provide good features on the house at the right location. While, the third characteristic is neighbourhood conditions such as neighbourhood upkeep, free from pollution and crime are also significant to the household surrounding assessment criteria that housing developer need put high consideration in developing any housing projects.

Technological Factors

Technological environment under PEST analysis refers to both technical and practical aspects. The aspects include the level of automation available in current times, technical facilities and infrastructure, rate of technological progress and research and development activities (Mangsor and Low, 2019). According to Taherkhani et al. (2012), technological objectives are covered mainly by time, standardisation and quality, and the ease of construction. It included factors such as site accessibility and management, maintenance, innovation and new technology, productivity and flexibility. Based on their study, the implementation of the Industrial Building System (IBS) was affected by these technological factors. Construction standardisation produced higher quality and better products. Technological factors such as optimised use of material, environmental friendliness, flexibility with different environment and climate can reduce the construction waste and save material cost. Supported by Bello (2019), it has been implemented in Nigeria as one of the National Housing Policy (NHP 2006) objective, to develop and promote the use of appropriate technology in housing construction and materials production.

The adaption of technology changes is important in order to have a successful housing delivery. In a study to identify and rank the challenges influencing the delivery of the housing public-private partnership (HPPP) in Tanzania, Kavishe et al. (2018) found that those who are working for the National Construction Corporation acknowledge the needs of further skills development in PPP due to changes in technology in the world. Supported by Aris et al., (2019), the technology that well adapted by all parties involved can promote the sustainable supply of the affordable house. This development of technology can reduce the construction period and result in the successful delivery project (Taherkhani et al., 2012).

However, the cost of these technology adaptations is an issue for a housing developer. Adabre & Chan (2019) listed technology as one of the Critical Success Factors (CSFs) for sustainable, affordable housing. Their study found that efficient technology provided by government subsidy is equivalent to the gap between the cost of standard housing and the beneficiary's adjusted yearly income paid as rent. It can reduce the inflationary impact of housing where the prices of the house keep increasing from time to time without any improvements in the housing conditions. Furthermore, private

developers should be incentivised to apply sustainable technologies in existing properties and remain the housing price, which at the end can provide sustainable, affordable housing market.

IMPLICATIONS AND DISCUSSION

This paper aims to identify the relationship between housing delivery system and external factors, namely political, economic, social and technology. It allows academicians, policymakers, economist and scholar to enlighten new aspect of finding in housing delivery system. The major implication of this study is that housing developers should be more sensitive to the households' need and interest by investigating details homeowners need and demand on various aspect through political, social, economic and technologies to ensure the process of housing delivery systems can be more smooth and efficient to avoid unsold housing.

From the social perspective, housing developer should improve to provide better quality house, convenient and good location in the relation of employment and amenities. Besides, the housing developer needs to put more effort to consider developing housing in the neighbourhood with a high investment value in integrated accommodation and infrastructure services. Pattern and design of houses must suit with homeowner's need currently who wish to stay in their house for the long run. The developer also should take advantage of the current technology available nowadays. Well adaption of technology can improve the quality of the house, shorten the construction period and improvise the housing delivery system (Taherkhani et al., 2012). However, the challenges are still there, as mentioned by Phang and Tan (2016), where the developers have to bare the high-cost technology in order to improve the housing delivery system.

Undoubtedly, the importance of political and government intervention is insightful in the housing delivery system. Without the intervention of government, housing industries will face difficulties and challenges to overcome the existing issues. The policy and regulation implemented by the government, indirectly assist housing industries in delivery of the house either by using STB or BTS. Both types of the system were introduced by the government to support developers and house buyer. Even, the finding in Musa et al. (2015) study, shows that favourable legal framework and government provision to facilitate the participation of private and government developers in public housing development. Government intervention can improve economic activities and at the same time, can increase the housing demand. However, the cost of housing that escalated higher than household earnings gives negative on housing delivery system. Throughout this study, the government could realise that they need to prepare public housing programs that can increase the capability of the poor to buy an affordable house. Throughout these programs, buyers can have the advantage of buying an affordable house for their family. The government needs to come out with fair, acceptable and easy to implement housing policies in order to avoid any possibility of a destructive housing industry in Malaysia.

For decades, the STB system was implemented in Malaysia to accommodate the needs and dreams of every Malaysian to own home. Also, this system is a common and most preferable practice adopted by developers for ages. As well, the system gives benefits and advantageous to developers in building the houses after selling the prospect housing developments (Aris et al., 2018). Besides, the developing country prefers to adopt the STB system applicable in a developed country because it is seen as an excellent solution to increase the nation's housing development (Ibrahim et al., 2014). The concept 10:90 applicable in STB system, in some way, assist the house buyers and developers from facing financial constraints. Relatively, the execution of STB system by the government has directly satisfied housing targets to all income groups by providing affordable housing units in Malaysia, though, there are some flaws exist (Phang & Tan, 2016).

The existence of abandonment of housing project causes a lot of problems such as economic crisis, unscrupulous and dishonest developers. Therefore, the house buyers are facing challenged and financial constraints in the present day because of those errant developers. Moreover, house buyers intended to purchase a house with specific criteria such as quality and standard housing building, as well as a comfortable environment. On the other hand, there is some impact on the quality of house constructed by developers, even though the agreement signed by both developers and house buyer

requires certain standard on the house purchase (Yusof and Shafiei, 2011). Based on the problems as mentioned above faced in the STB system, the effectiveness of the housing delivery system, namely STB in Malaysia was challenged by stakeholders (Yusof et al., 2010a).

CONCLUSION

Throughout this conceptual paper, it can help the government to take action in order to improve the housing delivery system in Malaysia. Phang and Tan (2016) highlighted that the government had proposed BTS in order to overcome the issue of abandoned housing projects which caused by the unreliable developers that are taking advantage of the current STB system. By promoting BTS, it can protect the buyers; however, it is not preferred by the developer as there are some challenges for them such as high cost, less financial support, limited supply of housing and insufficient incentives provided by the government (Phang and Tan, 2016). Most of the stakeholders in the housing delivery system have confidence that BTS system can be more effective. However, some sources of risk in the BTS system exposed some risks to the developers. The fundamental risks include unsupportive financial institutions, higher interest in bridging loan, rigid incentives application, the dissatisfaction of housing quality by buyers and lack of skilled labour and technology. Most of the risks are not borne by the developers, but the mechanism of the BTS system itself has some several weaknesses. The government must revise the incentive scheme and develop a proper BTS system. Hence, the financial institution also should actively participate in ensuring successful BTS implantation. In order to achieve the sustainable housing delivery system in the country, all players in the industry such as developer, homeowners, financial institution, legislative institution, and government have to put effort and responsibility to play as the sustainable growth for the housing industry can only flourish in an environment of uniformity and good governance.

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CRITICAL FACTORS INFLUENCING BUYERS' INTENTION TO PURCHASE ECO-FRIENDLY HOMES

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Abstract

Technological advancement has both pros and cons for the world environment. On one hand, it is making humans' life easier but on the other hand the human behaviour due to unsustainable practices caused by technology is affecting world environment severely. There are various spheres of life where unsustainable practices have made massive negative impact. One of those areas where unsustainable behaviour is causing damage to environment is real estate sector. Use of unsustainable material and energy utilization during and after construction respectively are among the major sources of global warming. Due to the increasing negative impact of unsustainable behaviour, researchers and governments are now emphasizing on green or eco-friendly homes in real estate sector. Such homes have features which are environment friendly. Therefore, many countries across the world including Malaysia are now emphasizing on the necessity of buying eco-friendly homes. Unfortunately, the studies conducted on eco-friendly homes in Malaysia are scarce and results are dispersed. Therefore, the aim of this study is to propose critical factors through literature which influence purchase intention of eco-friendly homes in Malaysia. Therefore, this study will help to identify the factors which are considered critical for Malaysian home buyers' intention to purchase an eco-friendly home.

Keywords: Eco-friendly homes; Green homes; Environmental knowledge; Peer Influence; Green Technology; Social Media Networks; Green Trust; Purchase Intention

INTRODUCTION

With the growth of human population, demand for homes has also increased. However, as the demand increases, the construction of new homes also increases which results in further utilization of natural resources. Moreover, rapid migration of people from rural to urban areas is also adding to the demand of new homes. This results in negative consequences for the environment as resources are depleting at much faster rate. Due to high speed of natural resources' utilization and depletion, world is facing issues like pollution, flood and global warming (Nazir, Othman, & Nawawi, 2014; Nazir, Othman, & Nawawi, 2015). To overcome these issues which world is facing due to environment damaging activities, more and more countries are focusing to promote sustainability. Therefore, many countries across the world have set their own targets to reduce pollution, efficient utilization of water and energy and resource depletion (Olanrewaju, Tan, Tat, & Mine, 2017) to achieve sustainability. Whereby, sustainability is important to be achieved as it helps to reduce the damage to the Mother Nature thus improving the quality of life (Jamaludin, Mohamad, & Thani, 2014). One of the methods through which sustainability can be achieved is through construction by adoption of green homes (hereafter referred as eco-friendly homes), buildings and related activities (Powmya & Abidin, 2014).

Sustainability through eco-friendly homes can be achieved by using eco-friendly material from the first stage of the construction to the last stage and post construction as well. Main elements which are used in the construction includes "cement, sand, round iron, steel reinforcement (BRC), aggregates, ready mixed concrete and bricks" (Mansur, Hamid, & Yusof, 2016). Thus, efforts should be carried out that all the above-mentioned material should be prepared and used in such a way that there is minimum damage to the environment thus constructing eco-friendly homes. Similarly, maintenance of homes is also crucial to maintain sustainability. If the maintenance is not done in view of sustainable practices, issues like climate change, acid rain and deforestation may increase (Olanrewaju, Tan, Tat, & Mine, 2017). Although eco-friendly homes are vital for sustainable environment and efforts are being carried out by professional bodies as well as governments to promote them, unfortunately these efforts are still not paying off the way it was expected and there is

a need to make further efforts to promote eco-friendly construction (Powmya & Abidin, 2014). Among such efforts, it is important to know the home buyers' perspective. Buyers are the ones who will purchase eco-friendly homes. No matter, how many eco-friendly homes are constructed, if buyers are not willing to buy, all the efforts will go in vain. As there are many factors which can influence the buying decision of eco-friendly house (Wijayaningtyas, Handoko, & Hidayat, 2019) and very little is known regarding the factors which effect the intention to buy eco-friendly homes (Rashid & Shaharudin, 2017). Therefore, the aim of this study is to review and propose those factors through extensive literature review which effect buyers' purchase intention towards eco-friendly homes.

LITERATURE REVIEW

To overcome the issue of unsustainable practices in homes, the concept of eco-friendly homes is getting popular. Green buildings (homes) are referred as those homes where sustainability is the main focus during planning, construction and operational practices (Elias, Bakar, Bahaudin, & Husin, 2013). This will lead to eco-friendly homes which cause no or least damage to environment in comparison to traditional homes. Green or eco-friendly home is a relative term. This means that no home can be 100% green because each home will take more resources from nature than giving back (Bakhoun, Garas, & Allam, 2015). Therefore, homes should be built in such a way that quality of life should be enhanced by providing healthy life and connected neighbourhood at low cost (Jamaludin, Mahayuddin, & Hamid, 2018). Typically, a home lifecycle has three phases namely pre-construction, construction and post-construction. It is very important that eco-friendly practices are used during all phases. Next section of this paper will highlight the factors which are important during all the phases of an eco-friendly home.

Factors Identification

Green Construction Material

According to Construction Industry Development Board (CIDB) of Malaysia, construction material consists of "cement, sand, round iron, steel reinforcement, aggregates, ready mixed concrete and bricks" (Mansur et al., 2016). Development of any house whether traditional or eco-friendly depends on these materials. It is important that all these materials should be used in an environment friendly manner (Tan, 2014) in such a way that there should be least damage to the environment. Utilization of these materials in an environment friendly manner will help in constructing eco-friendly homes which will result in sustainable and healthy living without compromising environment safety. Thus it can be concluded that the material used in the construction of a home plays a significant and positive role towards purchase intention of eco-friendly homes if potential home buyers are selective about use of only green construction material during construction.

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 eco-friendly homes. 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 (Goh & Balaji, 2016) or eco-friendly homes. Therefore, it can be concluded that more environmental knowledge leads to higher environmental concern which will ultimately lead to higher level of intention to purchase eco-friendly homes.

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 (Khare, 2014). Similarly, peer influence can also play a vital role when making decision to buy eco-friendly home. Individuals whose peers have good knowledge and experience of eco-friendly homes and are living in such homes can influence intention of new home buyers by convincing them through the influence they may have upon them.

Therefore, it can be concluded that peer influence leads to intention to buy green products (Barua & Islam, 2011) or eco-friendly homes.

Willingness to Pay

Willingness to pay refers to the amount an individual is willing to pay in order to buy green products or services (Netemeyer et al., 2004) and in this case eco-friendly homes. Eco-friendly homes are expensive as compared to traditional homes thus it requires more commitment from potential home buyers to purchase. If the home buyer has higher level of environment awareness and is ready to involve in those activities which will result in least damage to the environment, then it can be considered that higher willingness to pay leads to higher intention to purchase eco-friendly homes.

Perceived Consumer Effectiveness

Perceived consumer effectiveness refers to an individual's perception towards the action taken to solve environment related issue (Ellen, Wiener, & Cobb-Walgren, 1991; Jaiswal & Kant, 2018). Those individuals who have higher perceived effectiveness will prefer to buy products or services which are eco-friendly or will incur least damage to the environment. Same is the case with eco-friendly homes. Potential home buyers who believe that buying eco-friendly homes will help in solving environmental issues will have higher intention to purchase eco-friendly homes (Straughan & Roberts, 1999) as compared to those individuals whose perceived effectiveness is low.

Green Trust

To buy a product, trust is an important factor. Trust refers to a person's belief that the product will help in certain ways to solve the problem or will benefit that individual. Similarly, green trust refers to a person's belief that buying green product, service or home will help an individual to live healthy life and at the same time it will help in incurring least damage to the environment. Green trust is also defined as "a willingness to depend on a product, service, or brand based on the belief or expectation resulting from its credibility, benevolence, and ability about its environmental performance" (Chen, 2010). Thus it can be concluded that higher level of green trust will lead to higher purchase intention of eco-friendly homes as buyers will believe that when an eco-friendly home is bought, it will help in achieving sustainability through healthy living and betterment of environment.

Green Technology

Use of green technology to achieve sustainability through constructing eco-friendly homes and promote green buying behaviour is on the rise. Many countries are emphasizing on the use of green technology in various aspects of life including construction sector. For instance, government of Malaysia has launched an initiative known as MyHIJAU. The purpose of this platform is to promote the use of green technology among Malaysian citizens in various aspects of life (Suki & Suki, 2019). Moreover, RM 2 billion were also allocated in the 2019 budget under Green Technology Financing Scheme (Robichaud & Anantatmula, 2010). This shows the significance of use of green technology towards encouraging green purchase intention which also includes eco-friendly home purchase intention of individuals. Unfortunately, cost of green technology is high (PricewaterhouseCoopers, 2018) which will add to the cost of eco-friendly construction thus creating a hurdle towards eco-friendly home purchase intention. Hence, it can be concluded that use of green technology may raise the cost of construction and will have a negative impact on purchase intention of eco-friendly homes.

Government Support

Government support is another factor which can play an important role while promoting the purchase of eco-friendly homes. The price of eco-friendly homes is normally higher than conventional homes thus people may not have purchasing power. To overcome this challenge, government needs to come up with strategies through which people can afford eco-friendly homes. For example, government of Malaysia reserved RM 2 billion for financing green technology (Robichaud & Anantatmula, 2010). In addition, government should also provide incentives like subsidies, price discounts, tax rebates in order to promote eco-friendly home purchase intention (Zhang, Chen, Wu, Zhang, & Song, 2018).

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 eco-friendly homes, the information spread through social media platforms becomes Electronic Word of Mouth (EWOm). Positive EWOm helps in encouraging potential home buyers to be better aware of eco-friendly homes and their impact on an individual's life and environment. Furthermore, professional bodies and government can also use social media advertisement to promote eco-friendly homes 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 eco-friendly home 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 eco-friendly homes through social media networks can play a positive role towards intention to purchase eco-friendly homes.

CONCLUSION

This study emphasized on the factors which play a significant role in influencing purchase intention of eco-friendly homes. Among the factors which are highlighted includes Green construction material, environmental knowledge, peer influence, willingness to pay, perceived customer effectiveness, green trust, green technology, government support and social media networks. Future work of this study should be to empirically test these factors and analyse which factor has more influence as compared to other factors.

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THE IMPACT OF STRATEGIC HRM PRACTICES ON THE JOB SATISFACTION OF GENERATION Y EMPLOYEES IN THE MANUFACTURING SECTOR

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Abstract

Strategic human resource management (SHRM) practices lead to higher job satisfaction and is a vital component for organizational productivity. However, there is a lack of studies that examine the impact of SHRM practices on generation Y employees, more so in the manufacturing sector. The current research therefore examines the impact of 5 SHRM practices (namely: training and development, reward systems, supervisor support, performance appraisal and job rotation) on the job satisfaction of generation Y employees in the manufacturing sector in Malaysia. A total of 165 generation Y employees working in Malaysia's top three manufacturing sector states (Selangor, Penang and Johore) were obtained. Surprisingly, based on the results, only 4 out of 5 SHRM practices (namely: training and development, reward systems, performance appraisal and job rotation) had a positive and significant relationships with job satisfaction. The exception being supervisor support. The lack of a significant positive relationship between supervisor support and job satisfaction was linked to the phenomena whereby the impact of supervisor support is somewhat mitigated or substituted by the presence of a strong teamwork oriented work environment. In other words, unique to the current student, generation Y employees that work under low supervisor support, were still satisfied as long as they had strong bonds with their peers. Overall, the current study contributes to the gap within literature whereby not much attention was given towards job satisfaction among generation Y workers in the manufacturing sector.

Keywords: Strategic HRM, Job Satisfaction, Generation Y employees

INTRODUCTION

Despite the wide usage of job satisfaction as a variable in research fields and normal everyday life, there is no final agreement for the absolute definition for job satisfaction. Positive emotions and favorable attitudes contributes to job satisfaction while negative emotions and unfavorable attitudes lead to job dissatisfaction (Armstrong, 2006). Job satisfaction is also perceived as the degree to which an individual is content with his or her job. The happier a person is with their job, the more satisfied they are perceived to be with their job (Kabir and Parvin, 2011). Although job satisfaction can be perceived differently by various researchers, the similarity among these perceptions is that job satisfaction is mainly represented as precursor to various benefits for organizations and employees alike. Job satisfaction can be considered as a component for the efficiency and effectiveness of any organization. The importance of job satisfaction can also be seen from the perspective in which job dissatisfaction can augment absenteeism, occurrence of accident and lack of loyalty (Aziri, 2011). Malaysia ranks at the 38th highest place in the global Gross Domestic Product with a total GDP of \$ 310 billion ("World GDP Ranking 2017", 2017). Among the various sectors that contribute to Malaysia's economy, the manufacturing sector also stands out as one of the biggest contributors. The manufacturing sector places heavy emphasis towards industrial processes in which basic raw materials are transformed into finished products which are then delivered for sale (Azer, Hamzah, Mohamad and Abdullah, 2017).

LITERATURE REVIEW

According to Department of Statistics Malaysia, the manufacturing sector contributed 22.8 % to Malaysia's GDP by the third quarter of 2017 (Department of Statistics Malaysia, 2017). Within Malaysia, the majority of the manufacturing sector sales' are derived from chemical, rubber, electrical & electronic, plastic, mineral as well as metal based products. Back in November 2014, employment within Malaysia's manufacturing sector totaled 1,030,383 people compared to the total of 1,015,347 employees in 2013 (Hooi, 2016)

By December 2017, the total further increased to 1,057,591 workers (Department of Statistics Malaysia, 2017). These figures indicate a steady increase of employees within Malaysian manufacturing sector over time. Malaysia's December sale from the manufacturing sector in 2017 also increased by 9.4 % from RM61.5 billion to RM67.3 billion compared to last year (Department of Statistics Malaysia, 2017). Malaysia's manufacturing sector is also predicted to see continuous growth in 2018, owing to strong product demands from the U.S and Europe. Strong demand will also be observed from China due to inventory rebuilding (Amarthalingam, 2018).

The right combination of human resource management has a massive impact towards the performances at firms of any kinds (Delery and Gupta, 2016). Human resource management can be defined as a collection of activities that focuses on handling and managing employees at every level of an organization in order to accomplish organizational goals (Byars and Rue, 2006). Pulapa Subao Rao (2014) defined HRM as managing the activities of recruiting, developing and applying human resource wherever necessary, which results in the formation of industrial relations that would shape the future policies of human resource management to contribute towards goals, be it organizational, social or individual goals. As firms face constant increasing pressure from technological advancements, academics of various backgrounds began considering how people are managed within organizations from a new angle. The convergence of these thinking led into what became known as human resource management today (Riordan, 2017). According to Armstrong and Taylor (2015), they perceived HRM to have an overall goal of contributing to the development of a high-performance working culture. HRM also serves to create positive relationships between management and employees to create an atmosphere of mutual trust as well as ensuring the organization has the talented and skilled employees that are required in achieving organizational goals.

The ever evolving technologies makes the world more competitive and unstable by every passing day. Manufacturing based industries seek to gain competitive advantages using various approaches. One of the mainly used approaches is to gain competitive advantage through innovative manners in using HRM practices (Tan and Nasurdin, 2011). The business world is constantly changing especially during the generational change of workforce majority from generation X to generation Y. Generation X can be classified as the people who are born between 1960's and 1970's. On the other hand, generation Y are considered as the people who were born between the 1980's and 1990's. The older members of the Generation Y have already penetrated job markets and they are constantly followed by the younger members of Generation Y who will enter job markets over the years. It is possible that generation Y will monopolize the working environment after generation X (Sa'aban, Ismail & Mansoor, 2013). Generation Y are perceived to be more cooperative and positive minded compared to previous generations since most Generation Y have better educational background or training and development compared to prior generations. With higher access to better education compared to the previous generations, most of Generation Y obtained at least Diplomas or Degrees from their respective colleges or universities (William, 2008). Generation Y are more familiar with the use of advanced technology. With a better utilization of technology, Generation Y can absorb information quicker, reach out for a wider range of knowledge as well as displaying high aptitude for multi-tasking (Dogan, Thomas & Christina, 2008). While generation Y is also perceived to be independent, they still favor teamwork by working together as a team to solve tasks. Generation Y prefer to work in a team because they believe can obtain more knowledge from the team. (Haynes, 2011)

Besides that, generation Y have the tendency to place lower expectations when it comes to balancing the social atmosphere surrounding them. However, they have higher expectations towards job content, provision of training and development, monetary rewards as well as career development opportunities (Vos, Stobbeleir & Meganck, 2009). Apart from that, Generation Y prefer to be casual at workplaces. However, they also expect their superiors to care and provide attention for their well-being (Gursoy, Maier & Chi, 2008). Generation Y also seeks continuous feedback and may prioritize the feedback from friends, family or employers instead of placing faith in their own judgment. The feedback is necessary for them to identify their respective aspects that require improvements or already good enough (Crumpacker and Crumpacker, 2007). Generation Y employees can be described as flexible, are team-players and skilled in utilizing advanced communication technologies. However, they may also be the generation that ignores previously established principles and

perceiving almost every colleague as a peer. It is inevitable that workplace managers must get familiar with the new generation of employees that are slowly filling up the workplace (Mackayova and Balazova, 2011).

Relationship between Training and Development with Job Satisfaction

Khan and Baloch (2017) performed a study to investigate the relationship between training and development among accountants from Afghanistan. Their study concluded that training played an important role to survive the dynamic of the business world in upgrading a variety of components, including capabilities and job related skills to enhance employees' performance. The ability to upgrade these components would lead to job satisfaction, motivation and commitment thereby materializing the organization goals. In a study performed by Zumrah, Boyle and Fein (2013) which targeted public sector employees in Malaysia, employees who transferred the knowledge, skills and attitude learned from training to their workplace, could demonstrate positive satisfaction towards their jobs. By undergoing training, the employees were able to improve the quality of their service to customers. Their findings were also supported by Chen (2010).

A study which was conducted by Hanayasha and Tahir (2016) revealed a positive connection between training and development with job satisfaction among employees working in a public university. Their findings were also supported by (Leppel, Brucker & Cochran, 2012; Chiang, Back and Canter, 2010). In a research conducted by Chaudhary and Bhaskar (2016), a significant positive correlation was found between training and development with job satisfaction among teaching staffs from India. Staffs who underwent training felt that they were able to enhance their functional areas and expertise. Training also equipped the staff with the skills that were necessary for career growth which in turn would bring in monetary benefits in the future. According to Schmidt (2007) who examined the link between training and overall job satisfaction, a positive link was discovered between these 2 variables for the case of customer service employees in the U.S and Canada. The study confirmed that employees highly valued training and deemed it a necessity for jobs. Training enhanced their ability to satisfy customers which led to customer satisfaction and ultimately, job satisfaction among employees.

Based on the literature review that was covered for the relationship between training and development with job satisfaction, only few were associated with manufacturing sectors. Hence, this project will focus on the manufacturing to narrow the knowledge gap for the relationship between training and development with job satisfaction for the case of the manufacturing sector. Since most of the covered journals reported a positive relationship between TD and JS, this research also expects to discover a positive significant relationship between TD and JS. Thus, based on literature, we propose that

H₁: There is a positive significant relationship between training and development with job satisfaction

Relationship between Reward Systems and Job Satisfaction

Ahmad, Ali, Nisar and Ahmed (2017) performed a study to examine the influence of rewards and other factors on job satisfaction and performance in education factor. The results showed that rewards had a positive impact on job satisfaction (Ahmad et al, 2017). Their findings were also supported by another study from Saeed, Lodhi, Iqbal, Nayyab, Mussawar, and Yaseen (2013). Chepkwony and Oloko (2014) established a positive link between reward systems and job satisfaction among the members of a Teachers Service Commission from Kenya. The job satisfaction among these employees were low because they perceived that the value of the benefit they received were not competitive enough compared to the benefits received by employees from other similar organizations. Gitamo, Koyier, Mageto and Wachira also discovered a positive correlation between reward systems and jobs satisfaction among employees within a forestry research institute (2016). The employees were satisfied because they felt that their inputs were fairly rewarded by the right amount of output. They then generally became happier with their work, more motivated in providing consistent input and become more satisfied with their jobs. According to (Galanou, Georgakopoulos, Sotiropoulos and Dimitris, 2010), the reward system was also vital in providing a sense of achievement and feelings of fulfillment for the worker. They then derived pleasure from their job and were more satisfied with their jobs.

Muhammad and Maqbool (2015) also discovered a positive relationship between reward system and job satisfaction among banking sector employees in Pakistan. The distribution of proper rewards enable employees to feel that they are treated fairly by the organization and their perceptions of fairness increase. These perceptions of fairness will in turn, foster higher job satisfaction among employees. As cited by Al-shaibah and Habtoor (2015), the positive relationship between reward system and job satisfaction could also be explained using the Expectancy Theory. Expectancy theory is a cognitive theory based on the idea whereby people believe that a relationship exists between the effort they place in their work and the rewards that they receive in return for their efforts. When employees perceive that they are compensated properly in response to the amount of effort they gave, they become more satisfied with their jobs. Based on the literature review that was covered for the relationship between reward systems with job satisfaction, few of these studies were associated with manufacturing sectors. Hence, this project will focus on the manufacturing to narrow the knowledge gap for the relationship between reward systems with job satisfaction within the manufacturing sector. This research also expects a positive significant relationship between reward systems and job satisfaction since the majority of the covered journals discovered a positive relationship between these 2 variables. Thus, based on literature, we propose that

H₂: There is a significant relationship between reward systems and job satisfaction.

Relationship between Supervisor Support and Job Satisfaction

Studies found that supervisory support could directly and indirectly reduce stress level of employees and positively associated with job satisfaction (Gok, Karatuna, & Karaca, 2015; Raziq & Maulabakhsh, 2015; Vann, 2017). Schroffel (1999) revealed that with good and effective supervision, employees' satisfaction level was high whereas for those with supervisors of poorer communication ability, dissatisfaction level among employees was higher. In addition, supervisory support was helpful in boosting job satisfaction and job performance, while decreasing work stress at the same time (Babin & Boles, 1996). Subsequently, Kang & Kang (2016) also supported that supervisory support in an organization significantly reduced job stress which in turn slightly improved the employees' job satisfaction. On the other hand, being unable to receive the support of a direct supervisor when encountering problems at work and even at home was revealed to involve a substantially increased risk of poor health and other work-related outcomes (Hämmig, 2017). As cited by Baloyi, Wavaren and Chan (2014), based on the Attribution Theory, when employees underwent experiences at workplace, they were very likely to link the experience to their leaders or superiors. When the employees received good supervisor support, they would link positive or happy incidents with their supervisors instead. Apart from that, Yang, Shen, Zhu, Liu, Deng, Chen and See (2015) also aimed to investigate the relationship between supervisor support and job satisfaction among the aging population within the United States. Based on their findings, a positive relationship was also established between supervisor support and job satisfaction. Supervisor support influenced job satisfaction as supervisors were the ones who assigned tasks to employees. When supervisors provided guidance for the task that they provided in the first place, they indirectly helped in reducing the job stress for employees which led to a higher job satisfaction.

Supervisor support also assisted employees in forming the perception that their work is just and fair since supervisors were considered as representatives or agents of the organization. When employees were provided with supervisor support, employees recognized that the organization did provide them with necessary means of performing their work such as guidance from supervisors (Qureshi and Hamid, 2017). Supervisor support in the form of communication and support disclosure also benefited in reducing employee role ambiguity of employees which reduced employee stress. Apart from that, employees who received greater supervisor support may have derived a greater sense of personal accomplishment since they perceived themselves to receive better treatment from supervisors. Ultimately, the reduction in stress and attainment of personal accomplishment that could be accessed via supervisor support led to higher job satisfaction (as cited by Charoensukmongkol, Moqbel and Gutierrez-Wirsching, 2016). This research expects a positive relationship between supervisor support and job satisfaction since most of the covered researches also established a positive relationship between these 2 variables. Thus, based on literature, we propose that

H₃: There is a positive significant relationship between supervisor support and job satisfaction

Relationship between Performance Appraisal and Job Satisfaction

Upon receiving positive feedback from performance appraisal, the employees would view the feedback as recognition for the hard work and effort that they have devoted to the organization. On the other hand, a negative feedback, while demotivating, could also be considered helpful to a certain extent. With negative feedbacks, supervisors identified weaknesses and potential development needs. This indirectly showed employees that the supervisor spent time and effort into considering the employee's future development. Whether negative or positive, both outcomes from performance appraisals could still lead to job satisfaction (as cited by Kampkötter, 2016). Weerakkody and Mahalekamge (2013) also revealed a positive association between performance appraisal and job satisfaction among bank workers from Ceylon. When employees were satisfied with the performance appraisal system, they became more motivated and committed in their work which in turn, increased job performance. Their findings of the positive relationship was also supported by (Karimi, Malik & Hussain, 2011; Naji, Mansour & Leclerc 2015; Agyare, Yuhui, Mensah, Aidoo & Ansah, 2016). A legitimate performance appraisal system that was free from error also ensured employees were getting proper and equal output based on their performance when they obtained accurate performance ratings (Saleem and Shah, 2015). The feedbacks from performance appraisal also strengthened their competitive positioning within the company. The identification of strengths and weaknesses could help employees to understand themselves better and produce more opportunities for them within the company (Salau, Oludayo, Omoniyi & Akinbode, 2014). Poon (2003) argued that performance appraisals may also cause job dissatisfaction. However, this applied when the performance appraisal was affected by appraiser personal bias and punishment motives. When employees believed that the distribution of performance ratings were manipulated for unreasonable factors such as personal liking or motives to purely punish employees, they experience greater job dissatisfaction. According to Jha, Pandey & Vashisht (2016), an unbiased performance appraisal system would give rise to job satisfaction among employees which also positively influenced the efficiency and effectiveness of employees. Since a majority of the covered journals found a positive attachment between performance appraisal and job satisfaction, this research expects a positive association between performance appraisal and job satisfaction. Thus, based on literature, we propose that

H₄: There is a positive significant relationship between performance appraisal and job satisfaction.

Relationship between Job Rotation and Job Satisfaction

Ho, Chang, Shih and Liang (2009) performed a study to investigate the relationship between JR and JS among nurses who had job rotation experience among hospitals in Taiwan. The results indicated a significant positive relationship between JR and JS among the employees. The study concluded that job rotation could be used as a tool to increase worker's job satisfaction and also encourage the workers to remain in their work in order to prevent high turnover costs. Their discovery of a positive link between job rotation and job satisfaction was also supported by (Ragel and Ragel, 2017; Ho, Chang, Shih and Liang 2009; Gürbüz, 2009; Huang, 1999). Job rotation was also an important program to allow employees to gain new skills, develop new relationships across various departments and also gain skills that were required for future advancements in career. Job rotation led to a higher job satisfaction, signifying a positive relationship between job rotation and job satisfaction (Adjei, 2012). Job rotation could also promote the psychological and physical condition of employees by reducing boredom through an increased variety in work, instill positive attitudes among employees and providing the opportunity for employees to view things from new perspectives (as cited by Tarus, 2014). Most of the researches covered had similar findings in which positive relationships were established between job rotation and job satisfaction. Hence, this research forecasts a positive relationship for JR and JS. Thus, based on literature, we propose that

H₅: There is a positive significant relationship between JR and JS.

CONCEPTUAL FRAMEWORK

Based on literature, we thus propose the following conceptual model in Figure 1

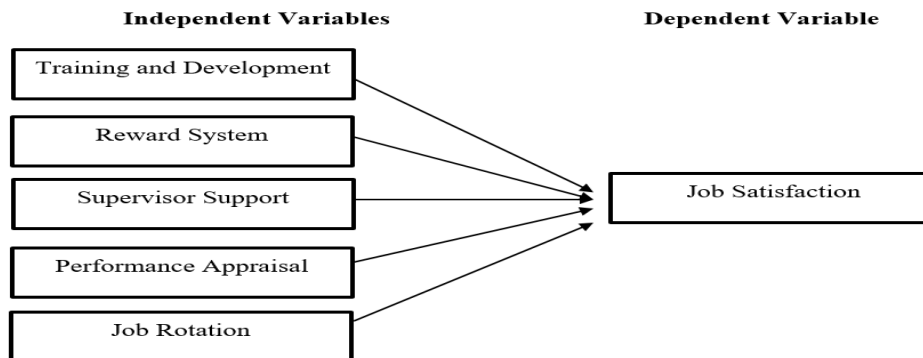


Figure 1: Conceptual framework

RESEARCH METHODOLOGY

The target population can also be perceived as a collection of which its units used for the findings are meant to generalize (Lavrakas, 2008). The target population of this research will be workers that are working within Malaysia's manufacturing sector. Manufacturing workers from the manufacturing sector, such as chemical, electrical, textile, wood, petroleum and food industries will be selected as the target population for this research. By referring to the Department of Statistics Malaysia (2018), employees within Malaysia's manufacturing sector by April 2018 total up to 1,069,410 persons. For this research, all these 1,069,410 manufacturing employees represent the target population. Workers from Malaysia's manufacturing sector are chosen as sampling elements which includes a diversity of gender, educational level, ethnic groups and salary ranges. However, the targeted respondents of this research project must from Generation Y. Reeves and Oh (2007) defined Generation Y or the Millennial Generation as people who are born between 1981 and 2000. Since Generation Y is the focus of this research project, the questionnaires will be mainly distributed among manufacturing sector employees who ages between 19-38 years old by the year 2018.

Hinkin (1995) recommends an item-to-response ratio of about 1:4 till 1:10 for every scale or question that will analyzed in order to have a better sample size. Since there are 31 questions for the questionnaire formed for this research, the ideal response amount is between 124 and 310. Due to time constraints of the research, 177 responses are collected. Past literature defined reliability as the consistency or the extent to which the measurements are repeatable. The measurements are said to be reliable when different people perform the measurements under different conditions, on numerous conditions and using alternative instruments, will still yield identical measurements. Reliability can also be defined as the stability of measurements over a multitude of conditions from which the same results can still be obtained (as cited by Drost, 2011). The reliability test for this research is conducted using Cronbach's alpha, which is the most widely used objective measure for reliability. Cronbach's alpha is expressed as a value between 0 and 1 to gauge internal consistencies. Internal consistency represents the extent to which all the items in a test to assess the same concept or construct. When the estimate from the reliability test increases, the portion of the test score that is associated to error decreases (Tavakol and Dennick, 2011). The following table represent the different ranges of Cronbach's alpha and the data's level of reliability. Regression analysis will identify correlations among multiple variables that have cause-effect relations. By using the correlations, future predictions can be made for the relationship between these variables. For this research, multiple linear regression analysis is used for this research since there are more than one independent variable. Through multiple linear regression analysis, the equation that represents the linear relations between the DV and IV synchronically is formed (Uyanik and Güler, 2013).

Table 1: Origins of Construct Measurement

Variables	Questions	Source
Training and Development (Independent Variable 1)	Questions 1,2,5 Questions 3,4	(Aldressi and Darun, 2017) (Schidmt, 2017)
Reward Systems (Independent Variable 2)	Questions 1,2,3,4 Questions 5	(Li, Yang & Lee, 2017) (Aldressi and Darun, 2017)
Supervisor Support (Independent Variable 3)	Questions 1,2,3,4,5	(Baloyi, Waveran & Chan, 2014)
Performance Appraisal (Independent Variable 4)	Questions 1,2,3,5 Question 4	(Aldressi and Darun, 2017) (Vignaswaran, 2005)
Job Rotation (Independent Variable 5)	Questions 1,2,3 Questions 4,5	(Tarus, 2014) (Ho, Chang, Shih & Liang, 2009)
Job Satisfaction (Dependent Variable)	Questions 1,2,3,4,5 Question 6	(Saleem, Mahmod & Mahmod, 2010) (Ho, Chang, Shih & Liang, 2009)

In this research, the relationship between every IV including training and development, reward systems, supervisor support, performance appraisal and job rotation with the DV, job satisfaction would be determined. The multivariate regression analysis model will then be formulated for these IV and DV.

DATA ANALYSIS

Based on Table 2, results shows a p-value of 0.000 for the model which is smaller than the alpha value of 0.05. Hence, the F-statistic value of 77.773 is also considered to be significant. The p-value also indicates that the developed model is a good descriptor in clarifying the relationship between the 5 IVs (training and development, reward systems, supervisor support, performance appraisal and job rotation) with the DV (job satisfaction)

Table 2: Analysis of Variance					
Model	Sum of Squares	dF	Mean Square	F	Sig
Regression	79.502	5	15.9	77.773	0.000
Residual	32.507	159	0.204		
Total	112.008	164			

Table 3: Summary of R Square				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate

1 0.842 0.710 0.701 0.45216

According to Table 3, R square is 0.710, which signifies that all the 5 IVs including training and development, reward systems, supervisor support, performance appraisal and job rotation accounts for 71 % of the variation for job satisfaction which is the DV. However, this also means that there is still another 29 % that remains unexplained in this research. Apart from the 5 IVs that are utilized in this research, there are still other unexplored variables that also accounts for the variation in job satisfaction.

Table 4: Parameter Estimates

Model	Unstandardized coefficients		Standardized	t	Sig.
	B	Std. Error	Coefficients		
Constant	- 0.558	0.238		-2.345	0.020
TD	0.307	0.044	0.338	6.969	0.000
RS	0.349	0.051	0.386	6.834	0.000
SS	0.010	0.047	0.010	0.217	0.829
PA	0.273	0.051	0.271	5.311	0.000
JR	0.242	0.045	0.238	5.333	0.000

Based on Table 4, training and development has a p-value of 0.000 which is less than the alpha value of 0.05 which makes training and development a significant predictor for job satisfaction. Training and development also has a positive value (0.307) for its unstandardized coefficient beta which exhibits the positive relationship between training and development with job satisfaction. Hence, the null hypotheses of H1 is rejected and the alternate hypotheses is accepted instead. By referring to Table 4, reward systems has a p-value of 0.000 which is smaller than the alpha value of 0.05. As a result, reward systems is another significant predictor of job satisfaction. Training and development also has a positive value (0.349) for its unstandardized coefficient beta which signifies the positive relationship between reward systems and job satisfaction. Thus, the null hypotheses of H2 is rejected. The alternate hypothesis is accepted instead. Table 4 shows that supervisor support has a p-value of 0.829 which exceeds the alpha value of 0.05. As a result, reward systems not significant predictor for job satisfaction. Supervisor support still has a positive relationship with job satisfaction due to its positive value (0.010) for its unstandardized coefficient beta. However, the null hypotheses of H3 is accepted and the alternative hypotheses is rejected. Performance appraisal has a p-value of 0.000 which is less than the alpha value of 0.05. As a result, performance appraisal is a significant predictor for job satisfaction. Performance appraisal also has a positive relationship with job satisfaction due to its positive unstandardized coefficient beta value (0.273). Therefore, the null hypotheses of H4 is rejected and the alternate hypotheses is approved. Lastly, job rotation has a p-value of 0.000 which is smaller than the alpha value of 0.05 which makes job rotation a significant predictor for job satisfaction. With a positive unstandardized coefficient beta value (0.242), job rotation also has a positive relationship with job satisfaction Thus, the null hypotheses of H5 is rejected and the alternate hypotheses is acknowledged.

Regression Equation

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5$$

Whereby,

Y = Job Satisfaction (JS)

X₁ = Training and Development (TD)

X₂ = Reward Systems (RS)

X₃ = Supervisor Support (SS)

X_4 = Performance Appraisal (PA)

X_5 = Job Rotation (JR)

B_i = value of parameter estimate for every IV, where $i = 1, 2, 3, 4, 5$

$JS = -0.558 + 0.307(TD) + 0.349(RS) + 0.01(SS) + 0.273(PA) + 0.242(JR)$

When the values of all IV is 0, the value of JS becomes -0.558. For every increase of 1 unit of TD, JS will increase by 0.307 units. While RS increases by 1 unit, JS will also increase by 0.349. Besides that, when SS increases by 1 unit, JS will increase by a meagre amount of 0.01 unit. Every increase of 1 unit in PA will lead to a 0.273 unit increase in JS. Lastly, every increment of 1 unit for JR leads to a 0.242 unit increment for JS.

Using the values of standardized coefficient betas from Table 4.19, reward systems contributes the most among all the IVs when explaining the DV (Job Satisfaction). The standardized coefficient beta value of 0.386 for reward systems is the highest among the 5 DVs. Hence, reward systems is the strongest predictor for job satisfaction. With a standardized coefficient beta value of 0.338, training and development has the second highest standardized coefficient beta value. Hence, training and development is the second strongest predictor in explaining job satisfaction. The variable in third place in terms of contribution is performance appraisal, with a standardized coefficient beta value of 0.271. Therefore, performance appraisal is the third greatest predictor for job satisfaction. Job rotation is the fourth highest contributor, with standardized coefficient beta value of 0.238. Thus, job rotation is the fourth strongest predictor for job satisfaction. Lastly, the standardized coefficient beta value of 0.01 for supervisor support is the lowest value among the 5 IVs. Supervisor support is the lowest contributor to value of job satisfaction among all 5 IVs.

CONCLUSION AND DISCUSSION

Theoretical Implications.

Basing off a theoretical viewpoint, this research further contributes towards the pool of knowledge regarding factors that affect job satisfaction as well as the preferences of Generation Y manufacturing sector employees. This study also explored the reasoning and justifications behind the relationships of HRM practices with job satisfaction among Generation Y manufacturing employees. As expected by the researcher, most of the HRM practices including training and development, reward systems, performance appraisal and job rotation has positive significant relationships with job satisfaction. These findings further affirms the results that are obtained in past researches. Even though supervisor support is not significantly linked with job satisfaction, it is still positively correlated towards job satisfaction. According to Griffin, Patterson and West (2001), the influence of supervisor support may be reduced in the presence of teamwork. This study can serve as the precursor in which future researches can investigate more about the impact of supervisor support in the presence of teamwork. By studying the relationship between these 2 variables, researchers can provide insights to managers on how to avoid reducing the impact of good supervisory support towards job satisfaction. Since this study has investigated the impact of 5 HRM practices towards job satisfaction, future researchers can conduct similar investigations using different HRM practices instead.

Managerial Implications

Apart from theoretical implications, this research helped to provide insights to managers to satisfy their employees since the HRM practices are found to have positive significant impact towards job satisfaction. Since the research discovered a positive significant relationship between training and development with job satisfaction, managers should ensure that all employee receive formalized training for them to learn the essential components of the job. Rules should also be devised in which employees must receive a minimum duration of training to ensure they have the basic work knowledge and skills. Another method in which managers can support training programs is by providing allowances or day offs for employees to attend training programs. Since reward systems also has a significant positive link with job satisfaction, managers can work with the HR department to enhance reward mechanisms such as increasing salaries or providing more promotion opportunities to employees. They can also use a combination of extrinsic and intrinsic rewards to further maximize the positive impact of reward systems towards job satisfaction. An alternative to upgrade the reward systems is by involving the employees in the development of reward systems so

that employees will view the rewards as worthwhile and understand better how to earn them. There should also be emphasis in matching the performance of employees with the appropriate level of rewards that they deserve.

While there is no positive significant relationship between supervisor support and job satisfaction in this study, managers should still acknowledge the importance of supervisor support. Supervisors should be required to provide guidance to their subordinates and become the medium of communication between subordinates and upper management in cases whereby employees wishes to express any suggestion. Supervisors should also attempt to listen to subordinate's dissatisfaction to show that the organization cares about their well-being. Another way supervisor support can be improved to provide more feedbacks that help employees to identify their shortcomings and strengths. Even simple praises from supervisors can greatly boost employee morale. Since performance appraisals have significant positive influence towards job satisfaction, managers should enhance the performance appraisal process. For example, employees can be educated on the objectives and procedures of performance appraisal to better prepare employees in scoring higher during the evaluation process. The element of transparency should also be integrated so that the perceived fairness of the performance appraisal system is maximized. The past contributions from employees should also be properly recorded to ensure no contribution from employees are left out during the appraisal process. Appraisers should also be properly certified and trained to avoid or reduce rater bias and errors.

Lastly, managers should also implement more job rotations to enrich the experience and improve the diversity of skills among employees. Managers can identify departments from which skills from one department is beneficial to other departments. Then, they can assign employees with new tasks that the employees did not perform before. By having a job rotation across various departments, relationships between different departments can be improved while also upgrading their employees at the same time. Among Generation Y manufacturing workers, rewards systems was the strongest predictor for their job satisfaction, followed by training and development, performance appraisal, job rotation and lastly supervisor support. Hence, managers can invest more resources towards improving the reward systems to obtain an overall higher level of employee job satisfaction. Policy makers can also draft laws to ensure that organizations should provide a minimum level of standards for training and development, reward systems, supervisor support, performance standard and job rotation. The minimum level of standards help to ensure that at least a fair level of employee job satisfaction can be achieved. These laws can also protect employees from being exploited from managers who provide little to no HRM practices that are at least satisfactory.

Although there are additional steps that must be undertaken by managers and policy makers to improve the HRM practices, these steps are necessary to improve the job satisfaction among employees. By increasing job satisfaction, organizations can obtain increased worker productivity, higher retention rate as well as reduced counter-productive work behavior. In the end, the research objective of examining the relationship between various HRM practices and job satisfaction among the Generation Y in the manufacturing sector has been accomplished. All of the established hypotheses are accepted and supported by research results, with the exception of the hypothesis that is developed for supervisor support. Supervisor support does not have a significant relationship with job satisfaction under the assumption that the impact of supervisor support is reduced in the presence of teamwork with colleagues. Although the findings that involves supervisor support in this research is not consistent with the majority of past findings, this inconsistency also paves a new door to further researches about supervisor support to obtain a better understanding of supervisor support. Although there is no significant relationship between SS and JS, this research still proves that HRM practices play vital roles in ensuring high job satisfaction.

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THE PERCEPTION OF FOOD SAFETY AMONG CUSTOMERS, INFLUENCES CUSTOMER SATISFACTION AND PURCHASE INTENTION: A CASE OF STREET FOOD HAWKERS

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Abstract

This paper aims to develop a conceptual framework on the perception of food safety and the influence it has on customer satisfaction and eventually on customer purchase intention, a case of street food hawkers. Although street food consumption is gaining popularity and attracting tourist to frequent destinations, existing literature points out that few conceptual studies have been done thus far to address the impact of perceived food safety to consumer purchase intention while being mediated by customer satisfaction. As a conceptual paper, a broad framework is developed by incorporating perceived food safety specifically looking into the health benefits and hygiene aspect, customer satisfaction and customer intention to purchase among young adults when consuming food prepared by street food hawkers. Theory of Reasoned Action (TRA) is used to develop the conceptual paper. This study emphasizes that health consciousness and hygiene influences the perceived food safety among young adults which in turn influences their satisfaction towards street food and finally it determines their purchase intention. It is expected that this paper should sound the alarm to the hawkers that the consumers would not compromise on hygiene and health values when they choose to consume street food. In addition, the influx of tourist to the state for the purpose of consuming street food would boost business for the hawkers, tourism sector and strengthen the economy of the state directly. Previous studies were conducted outside Malaysia. Very few studies of similar nature were carried out in Malaysia and almost none in Perak. Hence, this paper would provide valuable insights towards the perception of food safety, customer satisfaction and customer intention to purchase street food. Accordingly, the street food hawkers should be able to uplift the standard of food safety practices to satisfy the customers and eventually encourage them to continue purchasing street food.

Keywords: Purchase Intention, Customer Satisfaction, Perceived Food Safety, Street Food Hawkets, Theory of Reasoned Action (TRA)

FACTORS INFLUENCING THE WHISTLEBLOWING BEHAVIOR: AN EMPIRICAL STUDY AMONG EMPLOYEES IN PUBLIC SECTOR WORKPLACE

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Abstract

Whistleblowing is one of the best methods to rule out wrongdoing activities in an organization. Hence, this behavior should be made aware among professionals and personnel. This is a crucial behavior to be nurtured among workforce as unethical acts are at its alarming rate in Malaysia. Due to lack of awareness on this subject matter, there seemed to be difficulties in employing this behaviour. In addition to that, the inability of Whistleblower Protection Act (WPA) to protect whistleblower also leads to non-practice among those with knowledge. Therefore, this study aims to identify the factors influencing whistleblowing behavior among employees in public sector workplace. Theory of Planned Behavior has been applied to examine the relationship between attitude towards whistleblowing, subjective norm and perceived behavioral control on whistleblowing intention towards whistleblowing behavior. The data collected are analyzed through Structural Equation Modeling (SEM) with the use of Partial Least Square approach (PLS). This study is expected to encourage employees to report the wrongdoing fearlessly within a safer environment. It is also to promote the government to further improve the whistleblowing procedures and formal reporting channels.

Keywords: whistleblowing behavior, theory of planned behaviour, public sector.

INTRODUCTION

Nowadays, there are several numbers of wrongdoings such as fraud, corruption and sexual harassment cases globally. The issues of whistleblowing remain the most effective fraud discovery mechanism to provide the initial stimulus for improving organization efficiently and effectiveness to organizational problems. Therefore, Lee (2005) stated that whistleblowing is a risk management tool to penetrate safety in the interest of the company and the public. The effectiveness of whistleblowing depends on both the whistleblowers and the recipient organization (Lai & Wong, 2015). However, PricewaterhouseCopper Global Economic Crime Survey (2016) showed that whistleblowing mechanism in Malaysia is not effective. The survey also revealed the rate of corruption and bribery in Malaysia rose sharply from 19% in 2014 to 30% in 2016. In between, the survey conducted by KPMG in 2013 showed that the number of people who reported wrongdoings was still low. This is due to insufficient exposure and level of awareness on whistleblowing among employees (Ramlee, 2011). Not many were exposed and only a little of them were mindful of the importance of whistleblowing and how it could be useful to help organizations. Besides, the inability of the Whistleblower Protection Act (WPA) 2010 to protect whistleblowers is also a large contributor towards the non-practicing of whistleblowing (Institute for Democracy and Economic Affairs (IDEAS)).

Whistleblowing can be defined as the statement disclosed by employees (former or current) of misconducts and fraudulent activities which is not under the control of their employers to persons or authority organizations to affect the action (Near and Miceli, 1985). While whistleblowing behavior is characterized by intent and action when employees are confronted with organizational wrongdoing (Bjorkelo, Einarsen and Matthiesen (2010). On top of that, the person who acts to inform people in authority or the public that the organization they work for is doing something wrong or illegal is referred to the whistleblower (Oxford, Dictionary). In addition, employees should play their role to blow the whistle in tackling corruption activities even though there are possibilities of retaliation or even limitation in terms of the Whistleblower Protection Act (WPA) 2010. Monetary encouragement could be one of the strategies to trigger the intention to whistleblow among employees whenever they come across news about scandals of organizational illegal and

unethical behaviors (Ahmad, Smith & Ismail, 2012; Razak, Noor & Zakaria, 2015). Among the scandals that were successfully reported by whistleblowers within the private sector were Enron, WorldCom, and International Federation of Association Football (FIFA) corruption (Ab Ghani, Galbreath & Evans, 2011; FIFA informant Chuck Blazer, 2015). In significant to that, there is a need for employees to act as whistleblowers in order to prevent from the number of corporate misconducts to increase worryingly. (Verschoor, 2010).

Whistleblowing behavior can also be seen in the public sector. Razak, Noor and Zakaria (2015) mentioned that there is lack of transparency, hence permitting only a little or no scrutiny of the structural issue in Malaysia's public fund such as 1Malaysia Development Berhad (1MDB) funds. The study highlighted how whistleblowing could improve the transparency in wake of the 1MDB issues. However, there is no empirical evidence for the study. Salleh and Yunus (2015) investigated one of the public agencies in Malaysia which is Malaysian Rubber Board (MRB). The agency is responsible to implement all rules and regulations instructed by the Federal Government in Malaysia in compliance with the National Integrity Plan. It has already set up an integrity unit in 2014 to assist MRB in accepting, managing and increasing complaints or reports from employees. The result revealed very little factors that might influence the whistleblowing intention. This is due to limited respondent because only one agency was chosen. Therefore, our study is focused randomly on the employees in public sector workplaces. At the same time, our study empirically investigated the mediating factor which is whistleblowing intention towards whistleblowing behavior. Moreover, civil servant will be used in this study as a term to explain the finding and discussion. A civil servant or public servant is a person employed in the public sector on behalf of a government department or agency Stanley, (2016). The objective of this study is to identify the factors influencing the whistleblowing behavior among employees in public sector workplaces by using Theory of Planned Behavior. This theory includes three factors which are attitude towards whistleblowing, subjective norm and perceived behavioral control. This study aims to examine the relationship between independent variables on mediating variable which is whistleblowing intention towards whistleblowing behavior as a dependent variable. This study supports the Malaysian Government's plan in enhancing ethics and integrity in the Malaysian WPA (2010).

LITERATURE REVIEW

Attitude towards Whistleblowing

Attitude is a standpoint of approval or disapproval towards something. Ajzen (1991) defined attitude as a degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question. It showed that when individual perceives that the behavior will generate a positive outcome, he/she will have a positive attitude. Conversely, when individual feels that the behavior will generate negative outcome, he or she will have a negative attitude. Therefore, Ajzen (1991) concluded that attitude has a significant impact on intentions. According to Widagdo, Furqorina and Payamta (2017), attitude is where people evaluate the advantages and losses on their action of blowing the whistle. In their study, they examined attitude towards whistleblowing intention among civil servants with twofold scenarios; less corruption case and serious corruption case. They found out that attitude towards whistleblowing affect the intention to commit acts on both cases. It showed individuals can have confidence on their action which would be beneficial for themselves and organization. In addition, Urumsah, Syahputra and Wicaksono (2018) explained that strong professional commitment (attitude) would enable individual to work professionally that means he or she will work accordance with the professional ethical codes. Based on their study, it has been proven that professional commitment (attitude) among government employees has increase the whistleblowing intention. They concluded that the higher the level of an individual professional commitment (attitude), the stronger the assumption he or she has that whistleblowing is significant. On the other hand, Rustiarini and Sunarsih (2017) stated that attitude is assumed to be an independent factor that have direct impact on the intent of the individual's whistleblowing behavior. However, in their study, the results showed government auditors' attitude towards whistleblowing has an insignificant effect on whistleblowing behavior because whistleblowing has not been fully understood and appreciated by the government.

Subjective Norm

Subjective norm indicates individual's perception on a certain behavior where the perception is influenced by opinion of the significant others. Subjective norm can be defined as to the perceived social pressure to perform or not to perform the behavior (Ajzen, 1991). It also can be explained

by those who can influence one's decision by referent people such as members of family, friends, colleagues, neighbors and public. According to Rustiarini and Sunarsih (2017), lack of support from other people's decision can cause individual refuses to engage in the whistleblowing. Based on their study, subjective norm has insignificant effect on the whistleblowing behavior because employees' intention to blow the whistle does not rest solely on the social pressure exerted by those significant others around him or her. It showed that the whistleblowing intention requires more than just people around his or her community to make it a common behavior. Besides that, subjective norms denote the socially determined ways in which a given behavior is construed (Chudzicka-Czupala et al., 2016). In their study, they examined students' intention towards academic cheating. The result showed that the relationship between subjective norm and whistleblowing intention is insignificant. Subsequently, they found out that subjective norm of an employee to have intention in whistleblowing relies on their background or upbringing. Therefore, the reactions received from those around an individual will spark his / her intention to become a whistleblower. In addition, Richardson, Wang and Hall (2012) explained subjective norm as an individual's believes of what relevant others will perceive towards the behaviour if performed by him / her. They examined the whistleblowing intention within the context of Greek hazing. In contrast, they mentioned that subjective norm has been accepted as a strong predictor of whistleblowing intentions. Although, there is less need to rely upon the perceived opinions of others in order to make sense of the situation.

Perceived Behavioral Control

Perceived behavioral control depends on opportunities and barriers to behavior. Ajzen (1991) defined perceived behavioral control as people's perception of the ease or difficulty of performing the behavior of interest. The performance of people's behavior can be influenced by their confidence in ability to perform certain action. Ajzen (1991) emphasized that perceived behavioral control is an important factor that give impact on intentions and actions. According to Rustiarini and Sunarsih (2017), those individuals has intention to report on someone's wrongdoing must have a high level of confidence. In their study, they examined the individual factors that may influence the government auditors to become a whistleblower. The results showed that the greater perceived behavioral control the stronger the employee's intention to blow the whistle. They explained in their study that the employees will act when they perceive that action is easy to do, they will have the intention to commit acts of whistleblowing. Besides that, moral intensity can be categorized under perceived behavioral control where individual who has high level of moral intensity would tend to report the wrongdoings for their own good and for other people's goodness as he/she would think that such wrongdoings is not right and it must be reported (Urumsah et al., 2018). Hence, in their study, they focused on the level of intention to perform whistleblowing among government employees in Indonesia. Based on the results, the higher level of individuals' moral intensity, the more intention they have to do the whistleblowing. It showed that moral intensity (attitude) can be one of the factors that influence whistleblowing intention. However, Widagdo et al. (2017), rejected perceived behavioral control on both less corruption case and serious corruption case because of the weaker of the intention to perform the whistleblowing among civil servants in Indonesia. It showed that the consequence of doing whistleblowing might deter the intention of the employees.

Whistleblowing Intention and Whistleblowing Behavior

Ajzen (1991) termed intention as trying to perform a given behavior rather than in relation to the actual performance. He investigated on Theory of Planned Behavior where intention was used to measure the depth of effort individuals were willing to take in order to perform the behavior. He also pointed towards whistleblowing intention to be a predictor of an individual's ultimate behavior. According to Rustiarini and Sunarsih (2017), whistleblowing intention indicates the possibility of an individual choosing to blow the whistle, given the state of affairs. They investigated the factors that influence the Indonesian government auditor's intention and behavior towards whistleblowing. As a result, they found out that there was a significant relationship between intention and the actual behavior where intention usually leads to the actual behavior. On the other hand, in a local setting of 2013, KPMG Malaysia had conducted a fraud, bribery and corruption survey where it was founded that participants who partaken the survey had intention to blow the whistle. Based on the responds received, many seemed to have the whistleblowing intention but only scarce had practiced the whistleblowing behavior. Besides that, Ahmad, Yunus and Sanusi (2014) explained the types and effects of the variety of fraud that triggers whistleblowing intention among employees which will direct them to whistleblowing behavior. They also stated that employees in an organization may react differently to different types of wrongdoing depending on its perceived severity. Therefore, their study explored the types of

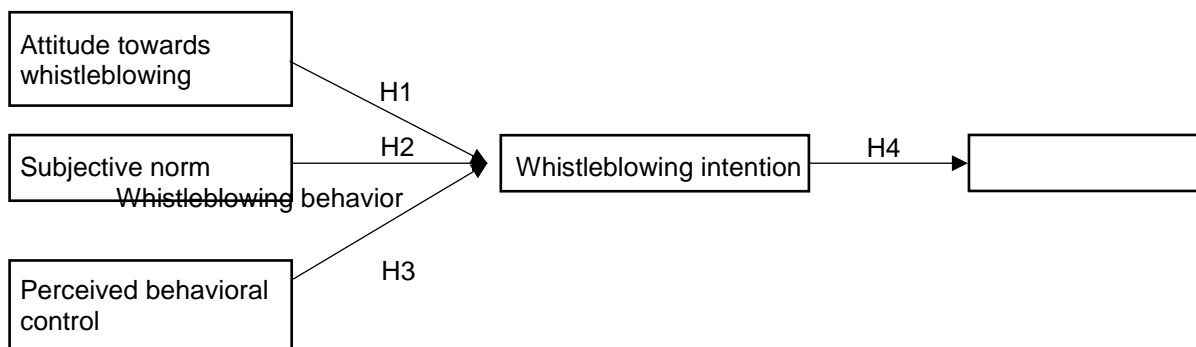
wrongdoing in examining individual's whistleblowing behavior. The result showed the potential implication to promote internal whistleblowing mechanism within Malaysian organization with which will stimulate the intention into whistleblowing behavior.

Theory of Planned Behavior

In light of the above prior studies on factors that influence individual to become a whistleblower, this study adopts the Theory of Planned Behavior (TPB) to investigate the influence of attitude towards whistleblowing, subjective norm and perceived behavioral control on whistleblowing intention as a mediating variable towards whistleblowing behavior. According to Ajzen (1991), TPB is an extension of the Theory of Reasoned Action (TRA) that dealing with individual behaviors that have incomplete volitional control. It is a process when individual decides on and commits to a certain course of action. Besides that, Ajzen and Fishbein (1980) stated that behavioral intention is the most significant predictor of human behavior. In addition, Ajzen (1988) emphasizes that TPB is the best prediction of behavior is given by asking people if they are intending to behave in a certain way because intention will not express itself in behavior. According to Rustiarini and Sunarsih (2017), the intention to engage in a whistleblowing behavior is predicted by individual's attitude where they believe in all consequences of behavior and the referent subjective norms that makes them engage in whistleblowing. Therefore, TPB was adopted to measure the factors which are attitude towards whistleblowing, subjective norm and perceived behavioral control. These are used to investigate whether there are contributing factors that influence whistleblowing intention as a mediating variable towards whistleblowing behavior among employees in public sector workplace.

CONCEPTUAL FRAMEWORK AND HYPOTHESE DEVELOPMENT

Figure 1.1: Conceptual Framework



Adopted from: Icek Ajzen (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes*, 50, 179 – 211.

There are three independent variables that consist of attitude towards whistleblowing, subjective norm and perceived behavioral control and one mediating variable that is whistleblowing intention. To examine whether there is relationship between these three independent variables and one mediating variable towards whistleblowing behavior, the following hypotheses are developed:

H1: Attitude towards whistleblowing has a significant relationship on whistleblowing intention.

H2: Subjective norm has a significant relationship on whistleblowing intention.

H3: Perceived behavioral control has a significant relationship on whistleblowing intention.

H4: Whistleblowing intention has a significant relationship on whistleblowing behavior.

RESEACRH METHODOLOGY

Quantitative data was used to examine the research objectives where the data collected was to generate numerical information. Hence, primary data was employed to collect the information using survey method which is self-administered questionnaire on a standard format (5 Likert-scale model). This study had adopted the questionnaires developed by Hays (2013); Nayir, Reh and Asa (2016) to measure attitude towards whistleblowing, subjective norm, perceived behavioral control, whistleblowing intention and whistleblowing behavior. Since the prior researchers developed the instrument for government auditors, government employees and civil servants in the Directorate General of Taxation, this study would customize the items accordingly

to suit with our targeted respondents which is civil servants in any government agencies. Therefore, TPB would be applied in this study to examine the factors such as attitude towards whistleblowing, subjective norm, perceived behavioral control on whistleblowing intention towards whistleblowing behavior. In addition, the self-administered questionnaire was constructed with two sections (Section A and Section B). Section A was demographic data such as gender, age and length of employment. While, Section B was psychometric data that consists of three independent variables which are attitude towards whistleblowing, subjective norm and perceived behavioral control, one mediating variable which is whistleblowing intention and one dependent variable which is whistleblowing behavior. The psychometric data were measured by four statements for each of the variables.

The targeted respondents were civil servants that is working in any government agencies. This study focused on civil servants because they tend to have better understanding and addressing the antecedent factors that trigger whistleblowing intention (Zakaria, Razak & Yusoff, 2016). Besides that, this study focused on civil servants because they might be exposed with any wrongdoing activities and they might have intention to tell or not to tell about it. Hence, the targeted respondents were selected from government agencies. This study was employed nonprobability sampling because the population cannot be well defined. According to Etikan, Musa and Alkassim (2016), nonprobability sampling is a sampling technique where the samples are gathered in a process that does not give all the participants in the population equal chances of being included. Therefore, convenience sampling is used since this type of sampling refers to selected samples that are not randomly been chosen because they happen to be at the right place and time (Awang, 2012).

A total of 200 set of questionnaires were distributed by hand and online survey. The survey was divided into 100 set of questionnaires and distributed by hand to civil servants in various government agencies. Meanwhile, another 100 set of questionnaires were randomly distributed to civil servants in various government agencies through online survey. The overall total of 151 set of questionnaires were successful collected by hand and online survey. However, only 145 set of questionnaires were useable to conduct this study. Hence, to test the conceptual framework and developed hypotheses, Structural Equation Modeling (SEM) with the use of Partial Least Square approach (PLS) has been employed in this study.

DATA ANALYSIS

The demographic profile of respondents indicated that age, 18 – 25 years old were 0.07%; 26 – 35 years old were 49.0%; 36 – 45 years old were 34.5% and above 45 years old were 15.9%. Next, the gender of the respondents was almost equally distributed between male (48.3%) and female (51.7%). Meanwhile, the length of employment showed that majority of the respondents were working more than 10 years (47.6%) in the government agencies and there was 23.4% for those working less than 5 years and 29.0% between 5 to 10 years. Table 1 showed the frequencies of respondents' demographic profiles.

Table 1: Descriptive demographic profiles (n = 145)

	Frequency	Percentage %
Gender		
Male	70	48.3
Female	75	51.7
Age		
18 to 25 years old	1	0.07
26 to 35 years old	71	49.0
36 to 45 years old	50	34.5
45 and above	23	15.9
Length of employment		
Less than 5 years	34	23.4
5 to 10 years	42	29.0
More than 10 years	69	47.6

Table 2 below highlights the reliability analysis results which states that attitude towards whistleblowing has a value of 74.5% followed by subjective norm is 85.7% then perceived behavioral control 72.8%, whistleblowing behavior is 59.7% and whistleblowing intention 89.9%.

Cronbach's alpha value for each construct was generated. From this test, the alpha level that more than 0.9 is considered as excellent reliability, from 0.8 until 0.9 is very good reliability, from 0.7 until 0.8 is considered as good reliability, from 0.6 until 0.7 is considered as moderate reliability, less than 0.6 will be consider as poor reliability (George & Mallery, 2003).

Table 2: Reliability Analysis Result

	Cronbach's Alpha
Attitude towards whistleblowing	0.745
Subjective norm	0.857
P behaviour Control	0.728
Whistleblowing Behaviour	0.597
Whistleblowing Intention	0.899

In Table 3, it shows the results of relationship between three independent variables on mediating variable. The attitude towards whistleblowing ($p < 0.05$) and perceived behavior control ($p < 0.05$) has a significant relationship on individual's whistleblowing intention then whistleblowing intention ($p < 0.05$) has a significant relationship on whistleblowing behavior. Therefore, H1, H3 and H4 are supported in this study. These results were consistent with the past studies (Widagdo et al., 2017; Urumsah et al., 2018) for attitude towards whistleblowing and (Rustiarini & Sunarsih, 2017; Urumsah et al., 2018) for perceived behavioral control and Ahmad, Yunus and Sanusi (2014) for whistleblowing intention towards whistleblowing behavior. Meanwhile, subjective norm ($p > 0.05$) has an insignificant relationship on individual's whistleblowing intention. Therefore, H2 is not supported in this study. This result is consistent with the past studies (Rustiarini & Sunarsih, 2017; Chudzicka-Czupala et al., 2016).

Table 3: Result of the Structural Model

	Sample Mean (M)	Standard Deviation	T Statistics	P Values	Hypotheses
Attitude towards whistleblowing on whistleblowing intention towards whistleblowing behavior	0.22	0.043	5.101	0	H ₁ accepted
Subjective norm on whistleblowing intention towards whistleblowing behavior	0.05	0.052	0.84	0.401	H ₂ rejected
Perceived behavior control on whistleblowing intention towards whistleblowing behavior	0.416	0.066	6.254	0	H ₃ accepted
Whistleblowing intention towards whistleblowing behavior	0.699	0.056	12.357	0	H ₄ accepted

DISCUSSION AND CONCLUSION

Based on the result obtained, subjective norm has no significant relationship on whistleblowing intention towards whistleblowing behavior among employees (civil servants) ($p > 0.05$). This finding shows civil servants chose to work in their safer environment. It is found to be consistent with the study of Rustiarini & Sunarsih (2017); Chudzicka-Czupala et al., (2016) which subjective norm has negative significant relation relationship in the whistleblowing. Furthermore, the results of R^2 shows 0.776 which mean there is 77.60% of the independent variables are able to explain the relationships of whistleblowing intention in this study. Meanwhile, there is 0.477 for whistleblowing behavior's R^2 . This mean that 47.70% of the independent variables are able to explain the relationship of whistleblowing behavior.

Thus, this study contributed reliable information in regard to the extent of understanding the relationship between independent variables of attitude towards whistleblowing, subjective norm and perceived behavior control on whistleblowing intention towards whistleblowing behavior of government servants. This study also can contribute the important factors that could influence people or civil servant specifically to whistle the blow in the government agencies. This is a good mechanism to enhance and create a new act or procedure to reduce number of bribery, corruption

and other wrongdoings activities in the government agencies. Besides, this study could provide some evidence that whistleblowing is not an unethical activities but could be used to deter and protect wrongdoings activities towards engaging good governance (Zakaria, et al., (2016). For future research, a bigger geographical area should be targeted to gather more information and include more variables to identify other factors that could influence the civil servant for whistleblowing behavior in Malaysia.

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GOING CONCERN OPINION BY AUDITORS FROM THE PERSPECTIVE OF AUDITING THEORIES

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Abstract

The going concern (GC) opinion by auditors provide important signals for shareholders on the financial status of companies, which may highlight the possibility of bankruptcy. This warning is crucial because generally the liquidation values for assets are substantially lower than their net book values in the case of insolvent companies. Thus, unforeseen bankruptcy will result in great economic losses which will be extremely costly for investors. However, auditors' GC assessment is highly subjective and involves a great amount of judgment. The confidence level placed on the auditors' report is challenged when a few giant corporate scandals revealed that auditors tend to under report GC risk. This paper discusses the issue of auditors' GC opinion by reviewing literatures of auditing theories focusing on the roles of auditors, the need for GC reporting and the causes of under reporting of GC risk. By doing this, this paper contributes to the growing literature on auditors' communication so as to gain insights for the betterment of monitoring mechanisms.

Keywords: auditors' report, going concern opinion, auditing theories, roles of auditors, under reporting

INTRODUCTION

According to the Conceptual Framework for Financial Reporting (2018) issued by International Accounting Standards Board (IASB), "Financial statements are normally prepared on the assumption that the reporting entity is a going concern and will continue in operation for the foreseeable future. Hence, it is assumed that the entity has neither the intention nor the need to enter liquidation or to cease trading. If such an intention or need exists, the financial statements may have to be prepared on a different basis. If so, the financial statements describe the basis used" (p. 20). Although it is the duty of the management to perform assessment of the entity's ability to continue as a going concern, para 6 of ISA 570 (Revised) stated that it is the auditor's responsibility to "obtain sufficient appropriate audit evidence regarding, and conclude on, the appropriateness of management's use of the going concern basis of accounting in the preparation of the financial statements" (p4). According to the U.S. Generally Accepted Accounting Principles (GAAP), financial statements are to be prepared using the GC basis unless there is information to the contrary. Thus, the duty is on the auditors to evaluate the validity of going concern assumption based on the audit evidence obtained through audit process and knowledge (Carson et al., 2013).

In Mo, Rui, and Wu (2015), GC reporting is defined as when an auditor clearly expresses his/her concern about the audited entity's ability to continue operation in the foreseeable future. Modifications to auditors' reports with respect to GC issues are as follows:

Table 1.1 Auditors' reports with respect to going concern issues

GC Opinion	GC Assessment
Adverse opinion:	auditors conclude that the GC assumption is inappropriate but the financial statements are prepared with the GC assumption (ISA 570 Revised, para 21, p. 7).

Disclaimer of opinion:	auditors are unable to obtain sufficient appropriate evidence to form an opinion whether the GC assumption is appropriate which involve “multiple uncertainties that are significant to the financial statements as a whole” (ISA 570 Revised, para A33, p. 16).
Qualified opinion:	GC assumption is appropriate, a material uncertainty exists but is not sufficiently disclosed (ISA 570 Revised, para 23, p. 8).
Unqualified, “Emphasis of Matter” (EOM), or “Material Uncertainty Related to Going Concern” (MURGC)	GC assumption is appropriate, a material uncertainty exists but is sufficiently disclosed. (ISA 570, para 19, p.8) (ISA 570 Revised para 22, p.7)

Source: ISA 570 (Revised) and ISA 570

Research Motivations

The current International Financial Reporting Standards (IFRS) has adopted the principles-based standards, which allows great discretions in the accounting professions. However, with these flexibilities, many a time, professional judgments need to be made. One of the judgments to be made by auditors is the GC of the reporting entity. The decision by auditors with regard to GC opinion is a complicated process which is not fully comprehended or easily captured (Geiger, Raghunandan, & Riccardi, 2014). GC assessment is one of the hardest and unclear audit tasks (Carcello, Hermanson, & Neal, 2003). Moreover, findings from Kuruppu, Laswad, and Oyelere (2012); and Martens, Bruynseels, Baesens, Willekens, and Vanthienen (2008) showed that even though the auditors obtained the same audit evidence, the conclusions they arrived at may vary due to different interpretation of auditing standards. This implied that the assessment on GC requires a substantial amount of judgment.

Although auditors' judgment on GC is highly subjective, the GC opinion is relied upon by the public to predict the solvency of the audited entities. The GC opinions by auditors are important signals for the shareholders on the financial distress of companies, which highlight the bankruptcy possibility (Sormunen, Jeppesen, Sundgren, & Svanström, 2013). According to Swanson and Theis (2017), the stakeholders of a company are concerned about the solvency status of the company because once a business fails, the shareholders and bond owners' investments may be eliminated; the creditors can only try to recover their debt from the residual value of the company; vendor will lose a customer and employees will lose their jobs. GC opinion can signal to the lenders on the differences between book value of the assets and the realisable values (Kausar & Lennox, 2011). According to Carson et al. (2013), GC opinion serves as a warning to the users of financial statements that the GC basis is used to prepare the accounts rather than the liquidation basis. This warning is crucial because generally the liquidation values for the assets is substantially lower than their net book value in the case of insolvent companies.

Blay, Geiger, and North (2011) stated that since auditors are expressly prohibited by the auditing standards to disclose additional information regarding the client, auditor's opinion is the only channel that the auditors can communicate their assessment of the client's financial viability. As much of the information used to assess the financial viability of the company are not publicly available, GC opinion can provide additional information content. However, all judgments involve elements of doubt, it will inevitably lead to higher risk to the profession. The confidence level placed on the auditors' report is challenged when a few giant corporate scandals revealed that auditors tend to under report GC risk. This paper aim to discuss the issue of auditors' GC opinion by reviewing literatures of auditing theories focusing on the roles of auditors, the need for GC reporting and the causes of under reporting of GC risk. By doing this, this paper can contribute to the growing literature on auditors' communication so as to gain an insight for the betterment of monitoring mechanisms.

LITERATURE REVIEW

Theories for Auditing

According to Ittonen (2010); and Hayes, Dassen, Schilder, and Wallage (2005), there are four theories for auditing, namely the policeman theory, the lending credibility theory, the theory of inspired confidence and agency theory.

Policeman Theory

This theory claims that the main responsibility of auditors is checking the financial statements for mathematical accuracy, discovery of error and detection of fraud. This was truly the case in the 1920s (Ittonen, 2010). According to Ajao, Olamide, and Temitope (2016), before 1840's, the sole duty of auditors was to detect fraud. He was 'seen as a bloodhound and not a watchdog (Policeman Theory)' (p. 33). However, there has been changes in the duties of auditors. With evolution of the business world, transactions have become too voluminous to be all verified by auditors. Auditors are unable to guarantee that the financial statements are free from fraud. Auditors have adopted sampling techniques, which can only give reasonable assurance of the financial statements' contents (Portor 1997). In the 1930s, the profession took the position that detection of fraud is the responsibility of the management rather than the auditors since the management has the duty to implement appropriate internal controls to prevent fraud (Vanasco, 1998). However, until now, responsibility of auditors for fraud detection is still a hot discussion issue, especially after the events when fraud is revealed in the financial statements (Ittonen, 2010). Sijpesteijn (2011) opined that the policeman theory is unable to explain completely the function and objective of auditing.

Lending Credibility Theory

According to this theory, the primary objective for auditing is "to add credibility to the financial statements". "Audited financial statements are used by management to enhance the stakeholder's faith in management's stewardship". (Sijpesteijn, 2011, p. 12). Thus, the role of auditing is merely to increase the confidence level of stakeholders in figures presented in the financial statements (Ittonen, 2010; Hayes et al., 2005). In the period of 1920's – 1960's, the lending credibility theory was developed due to the change in the main objective of the auditors' role from fraud and error detections to adding credibility (Ajao et al, 2016). However, there is limitation in this theory's explanatory power as it does not explain other functions performed by auditors (Sijpesteijn, 2011).

Theory of Inspired Confidence

This theory states that the demand for audit service is mainly due to the involvement of third parties or interested parties. These parties required accountability from the management, which is performed by the issuance of financial report. Auditors' main function is to ensure that the financial report prepared by the management is reliable and unbiased. Auditors should always endeavor to meet the expectation of the public (Limperg, 1932). Carmichael, the chief auditor at the PCAOB, commented that independent auditor has the social responsibility to use all possible mechanisms to meet society's need so as to restore public confidence (Carmichael, 2004). "The normative core of the Theory of Inspired Confidence is this: the accountant is obliged to carry out his work in such way that he does not betray the expectations which he evokes in the sensible layman; and, conversely, the accountant may not arouse greater expectations than can be justified by the work done." (Limperg, 1932, p18.). After assessing this statement, Carmichael (2004) states that the yardstick for auditor is to carry out audit procedures and to gather sufficient evidence to provide assurance what the public needs and reasonably expects. This theory connects society's needs for reliable information to the audit procedures to meet these needs. Public confidence is a condition for an audit function. When the society lose confidence in the effectiveness of the audit and the audit opinion, the audit is no longer useful to the society (Limperg, 1932).

Agency Theory

This is the most prominent theory used for auditing. As cited by Jenssen and Meckling, (1976), the agent-principal relationships has already been noted way back in 1776: "The directors of such (joint-stock) companies, however, being the managers rather of other people's money than of their own, it cannot well be expected, that they should watch over it with the same anxious vigilance with which the partners in a private copartnery frequently watch over their own. Like the stewards of a rich man, they are apt to consider attention to small matters as not for their master's honour, and very easily give themselves a dispensation from having it. Negligence and profusion, therefore, must always prevail, more or less, in the management of the affairs of such a company."

— Adam Smith (1776). It is defined in Jensen and Meckling, (1976), that “an agency relationship as a contract under which one or more persons (the principal(s)) engage another person (the agent) to perform some service on their behalf which involves delegating some decision-making authority to the agent. If both parties to the relationship are utility maximizers, there is good reason to believe that the agent will not always act in the best interests of the principal” (p. 5).

The principal-agent relationship arises when the owners delegate the power to managers to run their company. The principal (owner) is unable to access to the company’s information directly for decision-making purposes but need to rely on the information provided by the agent (managers), which may be biased or not faithfully presented. Furthermore, agents may have their own interest such as financial rewards, labour market opportunities and relationship with other parties etc., which are contradicting to the interest of the principals (owners). Due to information asymmetries and differing motives, it is hard for the owners to trust the management completely that they are acting to the owners’ best interest (Okpala, 2015). Hence, some mechanism has to be in place for monitoring and control. Some owners try to align the interests by having performance incentives or share options for the employees. However, this may create another new agency issue concerning the reliability of the profits reported. Management may window dress the financial statements to disguise their failure in profit achievement (Okpala, 2015).

The function of an independent audit is another alternative. An independent audit serves as a check on the management and the financial statement provided, which aids in maintaining confidence and trust (ICAEW, 2005). The auditor evaluates whether management has prepared the financial statements according to the international accounting standards and present a true and fair view of the affairs of the company. Management are made accountable to the shareholders for its stewardship of the company through the audit (Sijpesteijn, 2011). Hussain et al. (2014) highlighted that the lack of adequate monitoring and the agent’s unconcerned attitude are among the reasons that brought to the giant accounting scandals. According the Watts and Zimmerman (1983), in the mid nineteenth century, audit jobs were performed by individual shareholders (principal) who were independent from the agent running the business. However, not all the principals had the skills and knowledge to perform the task. Hence, they began to appoint expert auditors, which creates another agency relationship. As the agency model assumes all agents are not trustworthy and have conflict of interest with the principal, this generates another issue relating the audit independence. Please refer to Figure 2.1 for Agency Theory.

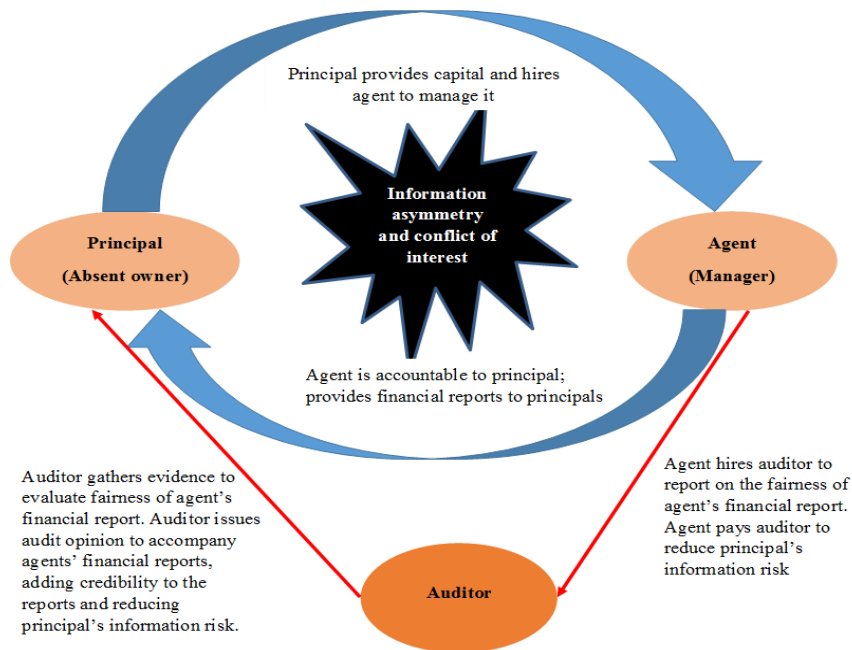


Figure 2.1: Overview of the principal-agent relationship leading to the demand for auditing
 Source: Eilifsen, Messier, & Glover (2014) McGraw-Hill Education (p.7)

On the other hand, some companies may not have divorce of ownership from control. This is in most of the cases for private limited company where the owner of the company still run the business. The audit may be seen as the price for limited liability since it is requirement by law that the financial statements need to be audited. In this case, the agency theory does not apply (ICAEW, 2005).

The Roles of Audit

Wallace (1980) developed three concepts to explain the role of audit in free and regulated markets, namely, monitoring perception, insurance perception and information perception.

The Monitoring Perception

The monitoring perception is derived from the agency theory where agents need to be monitored by the principal. Wallace (1980) combined the view of an economic theory on "rationale expectation" by Armen and Demsetz (1972) to arrive at this perception. Rational expectation proposed that the principals will not be constantly fooled because they will learn from past mistakes. Therefore, if the agents are not monitored, the principal will embed the cost into the remuneration packages (deduction of salaries) for the estimated loss resulted from the principal-agent relationship. As the principal is able to protect his/her own interest through a downward adjustment of wages, the agents themselves are motivated to be monitored if it does not exceed the related costs. As highlighted earlier, hiring of an auditor is also a form of agent-principal relationship with the owner. This could result in the independence issue, especially an audit requires the auditor to work closely with the management. Reputation of the auditors is a crucial factor since they are entrusted with the monitoring activities. Both actual independence and perceived independence are important (ICAEW, 2005). Therefore, auditors' behavior needs to be guided by a set of code of conduct and corporate governance such as audit committee.

The Insurance Perception

The insurance perception proposed that there is demand for audit to shift a portion of responsibility of the financial statements from the management to the auditors (Wallace, 1980). In US, under the Securities Act, the losses by third parties emanating from erroneous or defective financial statements are jointly and severally liable by the auditor and auditee. This could be important to the management as litigation risk is high in US. Therefore, when the financial statement is audited, the management can shift some of liability exposure to the auditor. The Securities Exchange Act of 1933 specifically provides the defense of "expert reliance" any party being prosecuted (Skousen, 1976). O'Reilly, Leitch, and Tuttle (2009) concluded that when the public perceives that auditor render some insurance, the going concern audit report is received less negatively. Evidence suggests that investors view auditors as guarantors of the financial statements (Menon & Williams, 2010).

The Information Perception

The information perception by Wallace (1980) may have some overlapping with the monitoring perception. It complements the monitoring perception by the argument that besides the need for monitoring according to the agency theory, there is demand for audit to provide information for better decision-making by investors (Wallace, 1987). Wallace (2004) added that audit could enhance the quality of the financial information to be used for making economic decision as well as to determine the market values of investments. The quality of financial data is improved by errors detection and making employees more careful because of the audit. This can also facilitate better internal decision-making by the managers (Wallace, 1980,1987, 2004). According to Elder, Beasley, and Arens (2010), the most frequently used method to get reliable information by reducing the information risk, is to have the financial statements audited. This can increase the trust of the intended users in the financial statements. Decision makers normally will assume the audited financial information to be reasonably complete, free from material error and unbiased.

Summary of Theories

When the theories of auditing are analysed with the roles of auditors, we can summarise the needs of all stakeholders in figure 2.2 as follows:

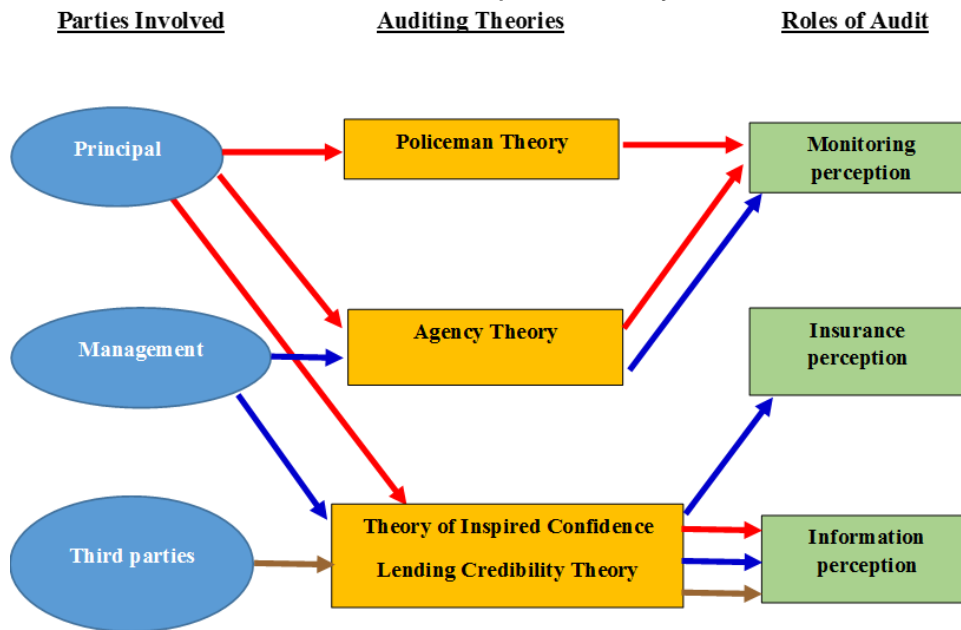


Figure 2.2: The role of auditors to principal, management and third parties as explained by the four theories of auditing.

Source: Adapted from the four theories of auditing and the perceptions developed by Wallace (1980)

According to the policeman theory and agency theory, the principal will need the auditors to monitor the management through the financial statements. The “expert” auditors can also contribute to improve the reliability of information the financial statement and increase credibility according to the theory of inspired confidence and lending credibility theory. The principal could use the enhanced financial statements to obtain loans and to improve decision making. As for the management, from the agency theory, they are aware that the principal will want to monitor them. In order to prevent salaries deduction as explained in the rational expectation theory in the earlier section, they are willing to be audited so as to gain trust from the principal. Furthermore, it is their responsibilities to prepare the financial statements. Knowing that the financial information will be used by all other stakeholders, auditors can share a portion of litigation risk in case of any frauds or misstatements identified. Moreover, normally the quality of financial statements will be improved after the audit. This can enable management to make better internal decision, and thus, enhance future performance, which could result in the improvement in their remuneration packages.

The third parties include all other stakeholders, namely, regulators, potential investors, suppliers, customers, employees etc. In Malaysia, the Companies’ Act 2016 requires statutory audit for all public listed companies. Furthermore, the audited financial statements for public listed companies are to be published. Because of this, the audited financial statement is now in the public domain. This can add confidence into financial statements prepared by the management. Once the confidence is installed, the stakeholders can use the information in the financial statements for decision making. Besides the agent-principal relationship and regulation requirement for audit, auditors’ service may be valued when directors believe that second opinion or independent advice is needed because they lack expertise in the area. Audit may help to improve decision-making, detection of errors in the financial statements or even help to eliminate unconscious bias by the directors. This explain why internal audit plays an important role in the larger corporations (ICAEW, 2005).

Going Concern Opinion (GCO)

In order to decide whether to issue a GCO, auditors need to determine the substantial doubt threshold, which however, is not defined in the professional standards. Auditors are frequently criticised for issuing too few GCO due to having high substantial doubt thresholds (Ittonen, Tronnes, & Wong, 2017). Feng and Li (2014) posited that concerning GCO, auditors acted with skepticism when they are evaluating the earnings forecasts. As a lot of decisions made by auditors are based on judgment, the audit quality is highly affected by the competency of auditors.

Based on the data collected from United States and United Kingdom, the empirical findings in Kausar, Taffler, and Tan (2017) concluded that investors have negative reaction towards GCO signal. Menon and Williams (2010) noted a significant adverse short-term effect on the market for GCO. In United Kingdom, a significant negative market reaction still could be seen over the following year after GCO (Taffler, Lu, & Kauser, 2004). Similar results were found by Kausar, Taffler, & Tan (2009) for the United States.

According to Kausar, Taffler, & Tan (2017), the negative first time GCO impact is found to be less severe in United States, which has a more debtor-friendly bankruptcy legal regime. Once a company enters Chapter 11 provisions under U.S bankruptcy code, the company is allowed to reorganise and rehabilitate to revive from the financial distress while the creditors will have to remain throughout the bankruptcy proceeding period. On the other hand, the negative GCO impact was found to be higher for United Kingdom, which has a more creditor-friendly bankruptcy legal regime, whereby the shareholders would have little chances to get any residual value once a company enters into the legal proceeding. Blay, Geiger, & North (2011) also concurred that as the United Kingdom bankruptcy regime are more towards creditors, GCO could be viewed more adversely by investors due to higher risk of abandonment of assets as compared to United States which legal regime is more towards adaptation of assets. Since Malaysia is a common wealth country which the legal regime resembles the United Kingdom, the GCO negative impact could be severe. Findings from Kuruppu, Laswad, and Oyelere (2012); and Martens et al. (2008), showed that even though the auditors obtained the same audit evidence, the conclusions they arrived at might vary due to different interpretation of auditing standards. This implied that the assessment of GCR requires a substantial amount of judgment.

According to Menon and Williams (2010), auditors are required to scrutinise beyond financial statement information (i.e. any mitigating plan by management to resolve liquidity issue), to access the company's GC status. Thus, GCO could give additional relevant information to the investors as most of the information is not publicly available. On top of information that is publicly available, auditors can also form their GCO after accessing the company's management, management's forecasts and budget based on their intimate knowledge of the client as well as the industry (Gissel, Robertson, & Stefaniak, 2010). Evidence gathered by Blay and Geiger (2013) implied that the decision on GCO may be affected by the future economic benefits expected from the client. The research results concluded that there was a negative relationship between the current year GCO decision and the subsequent two years' fees received by the auditor. The research findings by Öhman and Nilsson (2012) concluded that not many insolvent companies received GCO from auditors even though the companies shown signs of financial problems. This proved that it was the active decision by the auditors not to give GCO even though they were aware of the financial distress.

In most cases, auditors are reluctant to modify the auditors' report on ground of GC. Reasons given by Gallizo and Saladrighes (2016) on this was firstly, pressure received from the client. Secondly, auditor's belief in the audited entity and willingness to give time for improving the situation as qualified auditors' report will jeopardize the position further. Lastly, the negative impact on the development of the audit firm. According to Kauser, Taffler, and Tan (2017), as the GCO is highly attributed to professional judgment, it could be detrimental to users of financial statements when auditors are overly loyal to the client but were not punished for it. This implies that auditors' independence can affect the decision of GCO. Auditors may choose not to give a GCO as Type I error may have negative impact on the client. It not only highlights the financial problems to the investors but also may hinder the client from getting financing. This might deteriorate the financial position further and thus, increase the probability of bankruptcy. (Myers, Schmidt, & Wilkins, 2014; Öhman & Nilsson, 2012; Blay, Geiger, & North, 2011; Young & Wang, 2010). According to Granath, Kumlin, and Lundgren (2013), auditors were reluctant to give warning on the companies' financial problems for fear that it will eventually lead to the companies' bankruptcies. GCO will affect the ability of the company to raise additional fund (Foster & Shastri, 2016).

Under Reporting of GCO

Auditors' decisions to issue GCO are always made with caution. According to Granath, Kumlin, and Lundgren (2013); and Alfredsson and Fransson (2011), auditors have to undertake the risk of losing the audit clients should they choose to issue a GCO (as cited in Björkstrand & Nordholm, 2014). With the aim to prevent dissatisfaction from client or ever changing of auditor, auditors may purposely opt not to express a GCO even though the client is in financial distress (Kaplan &

Williams, 2012). From the studies conducted by Menon and Williams (2010); and Blay and Geiger (2001), GCOs are received adversely by the market. Thus, auditors are also concerned that the GCO would turn into a “self-fulfilling prophecy” or the audited entities became insolvent due to the GCO (Mo, Rui, & Wu, 2015). The decision by auditor concerning GCO is a complicated process which is not fully comprehended or easily captured (Kausar, Tauffler, & Tan, 2017; Geiger, Raghunandan, & Riccardi, 2014; Carcello, Hermanson, & Neal, 2003). For the year ended 2013, one of the top ten most common violation of auditing standards in the Russian Federation by auditors is with respect of auditors’ GC assessment activities (Shvyreva & Kruglyak, 2016).

In Tepalagul and Lin (2015), it has been concluded that the main problem of GC audit is in the methodology as audit evidence is obtained mainly through inquiries and analytical review. However, the “decision boundaries” is somewhat ambiguous. Auditors may not issue a GCO if the management provide a fictitious, but very plausible budget or forecast for future periods. In the empirical studies conducted by Tagesson and Öhman (2015), only 21.8 % of the bankrupt Swedish companies had received GC warnings in the latest audit report. Adiloğlu and Vuran (2011) assessed the financially distressed companies under the manufacturing industry in the Istanbul Stock Exchange between 1998 and 2006. The results reflected that auditors failed to highlight the GC issues or express qualified reports. GC issues attracted public attention in Indonesia since 1995 as the auditor of Summa Bank issued a clean report to it in the preceding year prior to its bankruptcy (Haron, Hartadi, Ansari, & Ismail, 2009).

Young and Wang, (2010) used the Altman’s Z-score model to match the GCR levels of the audited companies against the modifications in the auditors’ reports. It was noted that 75% of the GCR were under reported by auditors. With this, it was concluded that auditors had prominent agency characteristics and are not mainly served as a monitoring mechanism. As opposed to most of the previous U.S. researches, which concentrated only on subsequent bankruptcy of the audited entity, Wu, Hsu, and Haslam (2016) investigated failed company in United Kingdom between 1997 and 2010 on whether their auditors issued GCO prior to their failure. In this research, it defined a failed company as company delisted and was entered into liquidation, receivership or administration, which is a much wider scope. The result also showed that only 34% of the failed company received prior GCO. On the other hand, instead of Type II error on under reporting of GC issues, Geiger and Rama (2006) noted Type I error or over reporting of GC issues in their longitudinal study. The study covered a period of 11 years from 1990 to 2000 which found that the GCO companies that did not fail within one year of amounting to 87.7 percent. Similar results are found in Australia by Carey and Simnett (2008) for period 1994-1997 whereby 88% of the GCO companies did not subsequently failed. This is also conferred by Xu, Jiang, Fargher, & Carson (2011). However, bankruptcy is not the only resolution for GCO companies and bankruptcy may not happen one or two years subsequent to receiving GCO.

Nogler (1995) used a follow-through approach for GCO companies to the final resolution. It found that among them, 33% filed for bankruptcy, 18% were merged with other companies or acquired, 10% taken private, 3% voluntarily liquidated and only 36% still remained viable among which also could have undergone some debt restructuring or major sale of assets. Therefore, this implied that although the companies did not file for bankruptcy one or two years after GCO, the companies were actually financially distressed and the auditors might not be wrong in the issuance of GCO in the first place. The Financial Statement Review Committee (FSRC) of MIA, pointed out that from their selective reviews on the financial statements, the most common weakness noted is the appropriateness of audit opinion with respect of GC. It revealed that only 21.2% of the companies faced with severe financial crisis received GCO from Malaysian auditors (Osman, Abdul, Daud, & Nahar, 2014).

DISCUSSIONS

Auditing Theories and the need for GC Reporting

Policemen theory is unable to explain GC opinion as GC opinion involves judgment which is beyond the straight forward concept of “recorded accurately or not”. According to the **lending credibility theory**, audit can improve the stakeholders’ faith in the financial statement. Stakeholders will use the information in the financial statement to make decisions only when they can trust the information. As stated in Coram, Mock, Turner, and Gray (2011), audit reports can enhance the confidence level of financial statements and increase their usefulness for decision-making purposes.

GCO in the auditors' report is perhaps one of the most important piece of information for all stakeholders in the auditors' report. When the audited entities receive a GCO, potential investors may hold up their plan to invest in the company, potential lenders reject the new borrowing and existing lenders ask for more collaterals. Suppliers may revert to cash term in their supplies and employees start to look for alternative jobs. Customer may suspect the quality of the product or if the product is of long life-span as GCO could imply the company may not be able to continue to support the warranty or spare parts. Without GCO as a warning, even the principal may have the false impression given by the management that level of financial distress is still manageable. Blay, Geiger, & North (2011) opined that the GCO might influence the shareholder assessment of the company's value through abandonment (liquidation value) or adaptation (the value company's existing assets and liabilities after adaptation).

In Malaysia, the Companies' Act 2016 requires the audited financial statements for public listed companies are to be published. Anyone can access to and utilise the financial statements as well as the auditors' report. Thus, the reporting of GCO goes beyond the **agency theory** which only explain the relationship between the principal (shareholders) and management. GC reporting could affect public interest or interest of other stakeholders (non-shareholders) of the financial statements such as as creditors, customers, employees, credit agencies and even regulatory bodies, who will utilise it for varying purposes. As auditor not only need to answer just to the principal but also the public, this is thus, more complex and will not be able to be explained completely by the simple agency theory (ICAEW, 2005). According to the **theory of inspired confidence**, auditors should always attempt to meet the anticipation of the public (Limperg, 1932). Financial statements' users normally expect communication from the auditors regarding insolvency possibilities of the audited entities as they have the privilege of information to assess the situation (Miglani, Ahmed, & Henry, 2010).

Auditing Theories and Under Reporting of GC Risk

The issue of under reporting of GC risk could be partially explained by the **agency theory**. Auditors, the monitoring mechanism instilled by the owners on the management, are also agents of the owners who act in their own interest. It might be hard for them to maintain independence as the management can give pressure on them. Issuance of GCO may jeopardise their relationship with the management and they may lose their client. On the other hand, auditors need to weigh their own litigation and reputation risk if their do not issue a GCO and the audited entities subsequently become insolvent. "We are aware of the fact that auditors are agents too and will have their own motives and interests which, if the simple agency model was applied, would result in a lack of trust in auditors and an ongoing need to find further mechanisms for aligning the interest of shareholders, directors and auditors. This cycle can only over broken if trust in agents is established" (ICAEW, 2005, p.13).

Björkstrand and Nordholm, (2014) posited that two stages were involved for auditors to issue GCO. Firstly, they need to have the capability to identify the companies under distress and then they have to decide on whether to issuance of GCO. Building on this, in the first stage initial judgment on GCR of a company is highly dependent on the auditors' competence, guidance from the professional standards, regulations and monitoring by audit committee (AC). In the second stage however, the decision by auditor to issue GCO is highly affected by auditors' independence, the personal interest of the auditors as suggest by the agency theory. This conclusion coincides with Gul and Mahzan, 2015, "The likelihood of detecting material irregularities or errors depends on the competence of the auditor while the likelihood of reporting them depends on the auditor's independence" (p. 30). Auditors also will weigh the audit failure risk with the litigation risk and reputation risk. Therefore, it is crucial that auditors' behaviour is guided by the professional code of ethics. MIA By-Laws required auditors to maintain both independence in mind (or in fact) and independence in appearance.

As cited by Gul and Mahzan (2015), Mautz and Sharaf (1961) suggested auditors must preserve three types of "independence in fact", namely, programming, investigative and reporting independence. "Programming independence means the auditor must be free from interference by the client, and able to expand, restrict or modify the audit procedures to suit the particular circumstances of the audit assignment. Investigative independence means the auditor must have free access to books, records, correspondence and other evidence and reporting independence means the auditor must not allow any feelings of loyalty to the client to influence the obligation to report fully and fairly." (p. 35). Another theory that can explain the under reporting of GCR is the

theory of inspired confidence. The under reporting of GCR will not be an issue if public interests are not involved. Once an audited account is published, it will become public information. Not only the owners rely on the audited financial statements as explained in the simple agency theory, other stakeholders such as potential investors, suppliers, loan provider and even the employees may rely on the financial statements. Public will lose confidence on the auditors because they do not meet their expectation by giving warning signal on the GC risk.

However, the existence of expectation gap between the auditors and the users of financial statements is widely acknowledged internationally through the past studies of Litjens, Buuren, and Vergoossen (2015); Ruhnke and Schmidt (2014); Porter, O'Hogartaigh, and Baskerville (2012); McEnroe and Martens (2001); and Porter (1993) etc. Auditors' responsibility is only to render reasonable assurance of the financial statements due to the inherent risk of the financial statements and the test nature of the audit procedures. It is not possible for auditors to guarantee the financial statements are free from fraud and material misstatements. Moreover, GCO is highly judgmental and subjective in nature. Masoud (2017) built on Porter (1993)'s and Porter and Gowthorpe (2004)'s research framework and carried out a research of audit expectation-performance gap in Libya. 431 survey questionnaires were collected randomly followed by in-depth interview from four main groups of respondents, namely auditors, auditees, audit beneficiaries inside and outside the financial community. The results reveal that among other reasons, unreasonable expectation of the auditor by the society constituted 36% of the expectation gap. These unreasonable expectations of auditors' responsibilities include guarantee the auditee company is solvent, guarantee audited financial statements are accurate. Porter, O'Hogartaigh, & Baskerville (2012) in their empirical studies on expectation gap also noted 50% unreasonable expectation gap in New Zealand and 52% in UK. In order to safeguard the public interests and to facilitate stability in the capital market, the auditors' behaviours have to be monitored by the authorities. This is done through the issuances of professional standards, code of professional ethics and code of corporate governance.

CONCLUSION

In order to improve the quality of audit and auditors' report, the authorities imposed several monitoring mechanisms, which includes setting of new auditing standards, code of professional ethics and corporate governance. New ISAs has been issued such as ISA 701 Communicating Key Audit Matters in the Independent Auditor's Report to incorporate more information in the auditors' report, and existing ISAs have been revised which requires more comprehensive and clearer information in the auditors' report such as ISA 700 (Revised), Forming an Opinion and Reporting on Financial Statements and ISA 570 (Revised) Going Concern. As these new ISAs require more relevant information to be provided in the auditors' reports and the financial statements, it can improve the usefulness of the auditors' report, increase users' confidence and manage their expectation. The new reporting requirements could also renew auditors' focus on matters to be reported which could lead to an increase in professional skepticism (IAASB).

In Malaysia, the ethical issue is governed by Malaysian Institute of Accountants (MIA) By-Laws (On Professional Ethics, Conduct and Practice). MIA By-Laws spell out that it is an important requirement that an auditor must be independent. In 290.8 of the By-Law set out the requirement that an auditor need to have both independence in mind and independence in appearance. Section 290 also lists down guidelines on all aspect that could impair the independence of external auditor, such as financial interest, business relation, family relation etc. The first By-Law was issued in 1990, revised in 2002, 2007 and the latest version came into effect on 1 January 2011. Then, it has been updated and amended until 15 March 2017. This set of By-Laws is substantially based on the Code of Ethics for Professional Accountant issued by the International Ethics Standards Board for Accountants (IESBA), a committee of the International federation of Accountants (IFAC). Constant review of the MIA By-Laws is necessary to ensure the independence of the auditors.

To restore the public confidence in the capital market after the Asian financial crisis in 1997/1998 and corporate scandals, the Malaysian Code on Corporate Governance (MCCG) was introduced in 2000. One of the elements in the MCCG is the AC. Since then, the Code was revised three time, in 2007, 2012 and the latest is in 2017, which further enhance the function of AC. AC is required meet with the external auditors without the present of executive board members for at least twice a year, to facilitate free discussion and exchange of honest opinion between the two parties. Therefore, AC is one of the mechanism used to safeguard the interest of the shareholders

concerning financial reporting. In the MCCG 2012, it recommended that AC should have guidelines and measures to evaluate the appropriateness and independence of external auditor. In short, AC is empowered to monitor the activities of the external auditors.

To ensure better governance, in the MCCG 2017, the new requirement states that the Chairman of the AC is not the Chairman of the board and all AC members should be independent director. It further requires all AC members to undertake the continuous professional development (CPD) to keep themselves abreast with the relevant developments in the accounting and auditing standards, practices and rules. From these, we can see that the independence and the financial literacy of the AC members are given extra emphasis as they are viewed to have impact on the effectiveness of the AC roles to monitor the external auditors.

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THE TIMELINESS AND APPROPRIATENESS OF INTRODUCING DIGITAL TAX IN MALAYSIA

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Abstract

It is now a world-wide phenomenon in particularly among the developing countries to push for imposition of digital taxes onto global internet providers. In line with this global trend, Malaysia and neighboring Singapore will also be introducing similar digital tax on imported digital service effective January 2020. The number of digital based services offered by businesses to consumers has grown significantly in the past years. Presently, around 95% of businesses worldwide benefit from the high speed internet connection. However, the current tax rules and practices are no longer “fit-for-purpose” to tax the digital economy. Presently, Malaysia is practicing a territorial-based tax system in which income earned is only be liable to tax when it is derived within the country by an onshore company. If the overseas service provider that is located offshore, the income that is derived from Malaysia may not be taxable at all. Imposition of digital tax in Malaysia is one of the options that can enhance the government’s revenue base and at the same time to address the imbalance tax treatment accorded to both local and overseas digital service providers. The digital tax is practically aim at providing a level playing field among the local and foreign digital service providers as well as between online and offline service providers. This paper seeks to examine the timeliness and appropriateness of implementing the expected digital tax in Malaysia effective 2020. Our study includes the scope and mechanism of this tax regime, possible challenges of implementing and enforcing it and its impact to both the local and overseas businesses as well as to the local consumers.

Keywords: digital Tax, territorial-based tax system, overseas digital service providers, tax regime, global trend, a level playing field, challenges, enforcing.

INTRODUCTION

The global digital business trading in goods and services, conducted via the internet platform continues to expand at a rapid rate with world-wide e-commerce increased from \$19.3 trillion in 2012 to \$27.7 trillion in 2016 and about 12 percent of global goods trade are handled on the internet. (Hufbauer & Lu, 2018). The rapid development of the digital economy has created significant challenges with respect to the taxation treatment of cross-border transactions involving the movement of digital goods and services. With this rapid adoption of latest technology and newer digital advancements, the tax landscape is constantly changing and evolving. (Christenson et al., 2018) Taking into considerations all these digital developments; governments, policymakers and legislators from around the world have taken a number of steps to address the challenges of taxing the digital economy. (Christenson et al., 2018) Taiwan is also joining the revolution to tax the digital economy. As of this year, offshore digital services provided with support from Taiwan intermediaries or service providers will be treated as sourced in Taiwan and subject to income tax and VAT. Meanwhile, the Thailand Revenue Department wants to include international e-commerce transactions provided by foreign e-commerce operators to non-VAT-registered persons in Thailand (recipients) in the scope of the country's VAT rules. (Haines, 2018)

Under the Budget 2019 announcement in November 2018, it is proposed that service tax be imposed on the taxable services imported into Malaysia to ensure equal treatment for services supplied by both local and foreign-service providers. (MOF, 2018). The imposition of service tax on imported services will be carried out in phases as follows:

- i). services imported by businesses (business to business - B2B) be implemented from 1 January 2019; and
- ii). services imported by consumers (business to consumer - B2C) be implemented from 1 January 2020. (MOF, 2018)

LITERATURE REVIEW

Many countries have already started charging such service providers while some are in the midst of coming up with similar rulings in their own respective countries. Those countries that already started charging such taxes include Russia, Korea, Norway and New Zealand. In fact, some of these countries imposed a relatively higher rates in which Norway charges 25% while Russia and New Zealand impose 18% and 15% respectively. (Carvalho et al., 2019) The European Commission (EC) has recently proposed to introduce an EU-wide revenue tax on advertisement and online intermediation services in the form of digital services tax. This is in fact a tax campaign underway to introduce new taxes on those digital based services or onto firms with certain digital business models. This form of digital tax is directly targeted at large and highly innovative technology-driven international companies like Facebook, Google and Microsoft. However, these companies are hardly the only losers of the digital services tax. The tax would impact on those consuming digital services in particularly SMEs and micro businesses and their own employees and customers. (Bauer, 2018)

Unlike the corporate tax that is only applicable to business profits, the effect of a revenue tax would be far wider and have an impact on the overall economies. Just like other taxes imposed on corporates, business firms will respond to the digital services tax and the response is very much dependent on their capacity to ultimately avoid bearing the cost of the taxes. Ultimately, this is a tax that would have to be paid by workers and the micro entrepreneurs that utilize the digital services. Possibility, those businesses in particularly that are loss-making or operating at low-profit margins will have to go out of business or forced to make key strategic decisions to leave particular markets that are not economically viable. (Bauer, 2018) Any form of taxes will have direct and indirect effects. A tax on the gross revenues of digital service suppliers would substantially impact the overall effective tax burden, especially the tax burden of low profitability or loss-making companies, with adverse effects on solvency and downstream companies that depend on digital services. (Bauer, 2018)

In Italy, the Italian Senate is considering introducing a digital sales tax to tackle the problem of tax avoidance by those IT technology companies. This would be in the form of an equalisation tax based on the turnover of digitalised companies. The draft legislation provides for the imposition of a 6% tax on revenue from transactions from digital-based operations. The main idea behind is that the buyers will be paying the service provider 94% of the amount due, while the remaining 6% is forwarded directly to the Italian tax authorities. This is expected to be applied to transactions, but not e-commerce. The provision of digital tax will only be applicable to those operators that will exceed specific thresholds in terms of the number of transactions and overall value. (White, 2018). However, one critical issue with the digital sales tax is that the cost would likely to be passed onto the consumer by the companies facing this kind of tax levy. The effect could be regressive in the end with the worst case scenario will be major IT companies like Google and Facebook raising the advertising prices, which will increase the overall cost of digital marketing. Furthermore, there is potentially a risk that digital companies could reduce investment in a particular country that is taxing them too much. (White, 2018)

According to the Commission's Communication, "on average, domestic digitalized business models are subject to an effective tax rate in the EU of only 8.5 %", which is said by the authors to be less than half compared to traditional business models. It is also stated that in the EU, companies with "digital international B2C models" and "digital international B2B models" show average tax rates of 10.1 percent and 8.9 percent. Industry data show that these numbers do not at all reflect the overall tax burden of both traditional and digital corporations that operate in international markets including the EU. (Bauer, 2018). Figure 1 provides the average effective corporate tax rates for less-digital and non-digital corporations (EuroStoxx50 companies) and digital corporations (The Digital Group and MSCI Digital Services companies). The data show that the average effective tax rate of less digital or non-digital corporations was 27.7 percent (5y average) and 26.7 percent (3y average) and was therefore considerably higher (i.e. about 4 to 7 percentage points) than the numbers depicted by the Communication of DG TAXUD for the EU (Bauer, 2018).

For digital companies, the gap between the Commission's hypothetical tax rates and real effective corporate tax rates is much wider: for both well renowned (large) digital companies as well as less renowned digital companies, real effective corporate tax rates are significantly higher. While the Communication argues that the average tax rate for companies with digital international B2B

models is only 8.9 percent, the real average corporate tax rates of large (Digital Group) companies and other, less renowned digital (MSCI Digital Services) digital companies were 26.8 percent and 29.4 percent respectively for 5y averages (28.1 percent and 32 percent for 3y averages). In other words, the hypothetical numbers underestimate the effective tax rates of digital companies by about 20 percentage points if average tax rates are taken into consideration.(Bauer, 2018)

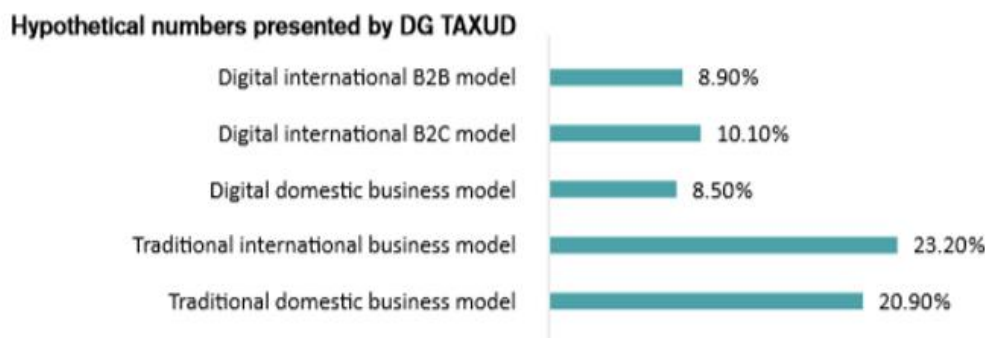


Figure 1: Effective average tax rates: EU estimates versus real effective corporate tax rates. (Bauer, 2018)

Industry data show that, in the past, digital corporations were on average more profitable than less digital or non-digital corporations. However, the difference is not significant. Even though it is difficult to draw a straight line between digital and non-digital businesses, the data indicate that the profit margins of companies that operate in traditional sectors (as represented Europe's 50 largest listed and internationally-operating companies) are on average 4.9 percentage points lower compared to digital corporations. (Bauer, 2018). In fact, India was the first ever country to tax foreign-based digitalized businesses which derived their income from providing online advertising services, in the form of facilities or space for online advertisements to businesses in India. Known as the Equalization Levy, this tax system is based on the mechanism of withholding tax. It was initially implemented by India in the month of June 2016 with the imposition of a tax rate of 6% on the payments done by any Indian residents to non-residents. So far, this Indian Equalization Levy has collected a fairly large sum of digital tax receipts in India. (Soh, 2019).

The digital tax will impact not just large US companies like as Google, Facebook or Netflix but also scores of much smaller technology or Internet-driven companies that have business operations in India. These international digital companies have a unique model of operation whereby they don't need to have physical presence in India to earn revenue and there was no system to levy ant tax on them. The equalization levy was imposed only for online advertising which is a very small chunk of their operations. (Aganwal, 2018). In South Korea, the lawmakers imposed a "digital tax" on US technology companies as these foreign businesses like Facebook, Apple and Google are being accused of not paying appropriate tax amount to the local tax authorities while earning billions of dollars in revenue yearly in their own country. (Kim, 2018).

South Korea required to levy a "digital tax" on foreign technology companies which sell advertising and other services in South Korea. Tech giant like Google is heavily criticized for paying very little tax compared to their revenue and even though the tech group has annual turnover in South Korea of almost 5 trillion won (\$4.5 billion). Google does not pay tax on ad revenues even though it makes a lot of money through YouTube. (Kim, 2018). Local internet companies in South Korea such as Naver and Kakao have also raised such issues by demanding fair and equal treatment of Google and other global tech players. The movement in South Korea is in line with that in the European Union which propose new rules to ensure that digital business activities are taxed in a fair and growth-friendly way in the bloc. With this tax ruling, online businesses especially those big US tech groups will contribute to public finances at the same level as traditional "brick-and-mortar" companies. (Kim, 2018). During the 34th ASEAN Summit plenary session with ASEAN leaders held in Bangkok in end June 2019, our prime minister, Dr Mahathir Mohamad has proposed to introduce an e-commerce tax in ASEAN countries. He commented since online businesses in the region are thriving and would definitely contribute significantly to the tax revenues of each government. He further said that the success of e-commerce businesses has come at the expense of traditional and direct-selling businesses. As the profitability of those direct selling businesses are affected, less tax will be collected. Meanwhile, online businesses which make profits in their countries of origin with the government gain nothing in terms of tax receipts.

ASEAN leaders proposed to collect at least half of the online businesses profit through an e-commerce tax. (Alagesh, 2019)

In other parts of the world, Israel also introduced the Significance Economic Presence (SEP) test in the month of April 2016 to tax non-resident enterprises which provides online services to consumers in Israel from a remote location in any place of the world. The SEP test prescribes various factors such as conclusion of online contracts with Israel customers to demonstrate that enterprises have a digital presence in Israel. However, Israel's SEP test only applies to foreign-based enterprises that is a resident in a country with no tax treaty signed with Israel. India also introduced a similar SEP rule which is effective in April 2019. (OECD, 2017). In the European continent, Austria is expected to publish forecasted revenues from the proposed 3% DST on gross revenues on digital transactions. According to Sebastian Kurz, the Austrian Chancellor, the main aim of the plans to impose a tax on large internet and technology companies that generate huge profits online but hardly pay any tax on them such as Facebook or Amazon. (EY, 2017)

Locally, Malaysians have gradually shifting their entertainment habits to the digital world. In the past, Malaysian consumers mostly purchased physical games to be played either on PCs or on game consoles. However, this no longer seems to be the case now as our local gamers have shifted their game purchasing habits away from traditional boxed and console games to digital distribution platforms such as Apple App Store, Google Playstore and Steam. Malaysians has in fact outdone all Asean neighbours in terms of spending for online digital games with an estimated 14.0 million gamers in Malaysia spending a total of USD 587 million or RM 2.45 billion in app purchases, game purchases or downloadable content. Since mobile game purchases are not taxable currently, our government is foregoing a huge tax revenue. (Lau, 2018). Besides games, music lovers also shifted their previous purchasing of physical CDs to acquiring song track from digital distribution platforms or purchasing subscriptions from music streaming services like Spotify or Apple Music. Spotify reported that Malaysians are among one of the most avid users of the platform in the Asia region with an average of 148 minutes played per day for each local user in 2017. In total, this is translated to over 7.5 billion minutes' worth of music and 2.9 billion songs being streamed over the platform by Malaysians in 2017. (Lau, 2018). Besides music and podcast, statistics provided by the popular entertainment video streaming platform, Netflix have indicated that Malaysians were ranked the biggest binge watchers within the Asean region. (Lau, 2018)

Challenges and Issues on the Digital Tax

With the introduction of the digital tax in Malaysia effective 2020, end users for certain services may feel the impact as it could be a different ball game for small and medium-scale entrepreneurs. According to Gritz Aromatherapy Holdings Sdn Bhd MD and CEO Nur Fateha Basran, the digital tax levied could be translated into higher digital business infrastructure costs like the usage of e-commerce platforms including cloud services. (Aziz, 2019). Since the digital tax is an indirect tax, collecting the tax may revenue be a bit challenging for our Malaysian government. The Malaysian Associations of Tax Accountants president Datuk Abdul Aziz Abu Bakar commented that it may be difficult to identify those foreign companies that have an excess of RM500,000 in revenue derive in the country and also the collection of data would be challenging. (Aziz, 2019). The National ICT Association of Malaysia advisor, Woon Tai Hai said most countries that implement a digital tax are facing collection mechanism issues. He commented that to get the foreign business sellers to register may be easier said than done as the the bigger issue as experienced in other countries is the collection mechanism of the platform. (Aziz, 2019)

On the enforcement of the digital tax, large and established global digital companies and platforms will take the necessary steps to comply with the requirements to register and collect the tax as they have done so in other countries that have implemented it. (Goh, 2019). For the smaller players and providers, our Malaysian authorities may firstly, attempt to try and encourage them to comply by making it easier for them to register online voluntary. If these initial efforts of encouragement do not work, the authorities including the regulator, the Malaysian Communications and Multimedia Commission (MCMC) may block the IP address of the service provider. (Goh, 2019) The RMCD may also face challenges in identifying and tracing the turnover level of the foreign service provider and ascertain whether they exceed the registration threshold of RM500,000 (Crowe, 2019) Another challenge in collecting this digital tax is the business-to-consumer transactions because it could be tough to track consumers as the liability falls on the service suppliers providing the services will have to register, pay and be accountable for the tax. (Goh, 2019)

When digital tax was initially introduced in Korea, it is difficult to get companies like Google and Facebook to pay their fair share of tax. In addition, these global giants argue that they already pay corporate taxes where their headquarters are located so that paying them again in countries in which they only provide services without having a physical presence would subject them to double taxation, (Kim and Kim, 2018). With the introduction of this new tax effective 2020 in Malaysia, there will potentially be uncertainties and ambiguities faced by both the foreign service providers and consumers. For the foreign service providers, the following issues and matters need further clarifications: -

- i) Application for Registration covering how to register, any prescribed form, can be done online?
- ii) Filing/Declaration of Return covering how to furnish the return and the types of information required in the return.
- iii) Remittance of the tax covering how should the payment be forwarded to RMCD.
- iv) Format of Invoice covering is it compulsory for the service providers to issue and invoice with all the prescribed and necessity particulars.
- v) Liability to register covering how is the service provider able to identify whether the services are provided to the consumer “in Malaysia” and not to another country, will those service providers who have unique business models be liable to be registered with RMCD (eg. Foreign domiciled company with or without an establishment in Malaysia, local agent who acquires the digital services from overseas and provides to the consumer in Malaysia), any exemption from registration in Malaysia?, and will there be double taxation of the digital services provided by the foreign service providers if the provider is taxed in both countries. (Crowe, 2019)

For local consumers in Malaysia who subscribe to the services provided by the foreign providers, the related issues to be further clarify: -

- i) Under what circumstances will a consumer be exempted from paying the service tax on the digital services acquired from the foreign service providers.
- ii) Will there be any cost saving to subscribe for the digital services from the foreign service provider through a local agent in Malaysia.
- iii) How will they know and be convinced that the tax imposed on them by the service provider is eventually be remitted to RMCD. (Crowe, 2019)

Likely impact and potential significance of the Digital Tax

With the imposition of the digital tax, consumers will definitely be devastated as they fear that the tax may raise prices for the digital entertainment and services that have become so ingrained in their lives. However, since the digital tax is aimed at “leveling the playing field”, there is the potential that the tax may spur both the local and foreign companies to provide better services and offer to its users as competition heightens within the market. (Lau, 2018). It is widely believed that the tax imposed will have little effect on the general public as free content can be easily found online. Those consumers who really acquire services online (eg. Apps, music, videos, advertisement subscription, etc) the digital tax imposed is not really significance as they are not really paying that much. (Lau, 2018). The digital tax may not constitute an adverse factor for consumers, but introduction of the tax may be detrimental to the growth of the digital economy. It is far too early to impose a digital tax as the digital sector and the digital market is still struggling to make profits. The fintech industry has made inroads in disrupting the financial industry and changing the way business is being conducted and players are still investing in the business rather than making a profit. The market place is still infancy and many companies within the digital industry are still struggling to break0evdn and at the same time, many new tech companies are taking risks while continuously investing in research and development to stay ahead. (Lau, 2018)

CONCEPTUAL FRAMEWORK

Research framework and hypothesis specifications

Base erosion profit shifting (BEPS) relates to business arrangements that achieve zero or low taxation by shifting profits away from the jurisdictions where the activities creating those profits that took place. With the rapid spread of digital economy and the current digitalization trend, BEPS has been worsened with the reduction of the tax base of countries around the world. These trends have also resulted in an unlevelled playing field between offline and online businesses. (OECD, 2013)

Hypothesis 1: Introduction of digital tax in Malaysia is to ensure fair and equal tax treatment for all digital based businesses.

Taxation policy should seek to be neutral and equitable between forms of business activities. A neutral tax will contribute to efficiency by ensuring that optimal allocation of the means of production is achieved. In this sense, neutrality also entails that the tax system raises revenue while minimising discrimination in favour of, or against, any particular economic choice. (OECD, 2014). Tax rules should be clear and simple to understand, so that taxpayers know where they stand. A simple tax system makes it easier for individuals and businesses to understand their obligations and entitlements. As a result, businesses are more likely to make optimal decisions and respond to intended policy choices. (OECD, 2014). Taxation systems should be flexible and dynamic enough to ensure they keep pace with technological and commercial developments. The structural features of the system should be durable in a changing policy context, yet flexible and dynamic enough to allow governments to respond as required to keep pace with technological and commercial developments, taking into account that future developments will often be difficult to predict. (OECD, 2014)

Hypothesis 2: Introduction of digital tax in Malaysia is to expand government revenue stream.

In managing the fiscal policy, it is important for the Malaysian government to have an efficient and well-designed tax system as well as ensuring the revenue collected is redistributed back to the rakyat in the form of quality public services and infrastructure as well as people-centric programmes and projects. This will also contribute towards enhancing the nation's competitiveness particularly by providing a conducive business environment and ensuring convenience to taxpayers thus improving their willingness to pay taxes. In this aspect, Malaysia's tax policy formulation is premised on the principles of reasonableness, consistency and fairness. (MOF, 2018). Referring to Table 1, for the year 2019, companies income tax (CITA) and individual income tax are forecast to register RM35 billion and RM70.2 billion respectively. However, CITA collection is expected to drop slightly to 70.2 billion from RM70.5 billion recorded in 2018 representing a reduction of 0.5%. The main contributor to CITA collection is from the services sector primarily financial services. In addition, the continuous IRB efforts in enhancing auditing and taxpayers' compliance also contribute to sustain the individual and CITA collection. At the same time, the government has established the Tax Reform Committee to undertake a comprehensive review of tax system aimed at broadening the tax base and reducing tax gap. Indirect tax collection for the year 2019 is expected to decrease with the reintroduction of SST which is estimated to contribute RM 22 billion to the total indirect tax collection. (MOF, 2018)

					% Change				% Share of Total Revenue			
	2016	2017	2018	2019	2016	2017	2018	2019	2016	2017	2018	2019
	Actual	Actual	Estimate	Budget	Actual	Actual	Estimate	Budget	Actual	Actual	Estimate	Budget
	RM' Mill	RM' Mill	RM' Mill	RM' Mill	%	%	%	%	%	%	%	%
Direct Tax												
CITA	63,625	64,465	70,536	70,187	-0.1	1.3	9.4	-0.5	30.0	29.2	29.8	26.8
Individual	27,566	28,945	34,800	34,954	4.7	5.0	20.2	0.4	13.0	13.1	14.7	13.4
Indirect Tax												
GST/SST	41,206	44,352	23,100	22,000	52.5	7.6	-47.9	-4.8	19.4	20.1	9.8	8.4
Excise Duties	11,705	10,112	10,691	11,380	-1.6	-13.6	5.7	6.4	5.5	4.6	4.5	4.4
Import Duties	2,905	2,784	2,800	2,940	6.3	-4.2	0.6	5.0	1.4	1.3	1.2	1.1
Export Duties	980	1,355	1,600	1,604	-5.7	38.3	18.1	0.3	0.5	0.6	0.7	0.6

Table 1: Malaysian Federal Government Revenue by nature of tax for Year 2016 – 2019 (MOF, 2018)

Based on the government's income statement, Malaysia has a new challenge in the form of sustaining its budget deficit targets despite the shortfall in revenue due to the switch from GST to SST in 2018 and tax measures to boost revenue. Since the year 2019, the Malaysian government's revenue to GDP has been hovering at about 20%, but this slowly decline to 18.9% in the year 2015 and dropped further to 16.3% in 2017. For the first half of the year 2018, this

figure is now just 15.4%. Clearly, the government's revenue has not kept pace with the growth of the economy itself as there were instances that revenue even fell year-on-year. (Kumar, 2018) Referring to Table 2, the Malaysian government collected some RM220bil, of which, just under 30% was corporate taxes; 20% from GST; 13% individual taxes; and about 10% in government's own interest and returns from investment. The 20% GST amount will now be reduced by half in 2019 to just 10% of the total revenue on the SST mechanism. (Kumar, 2018).

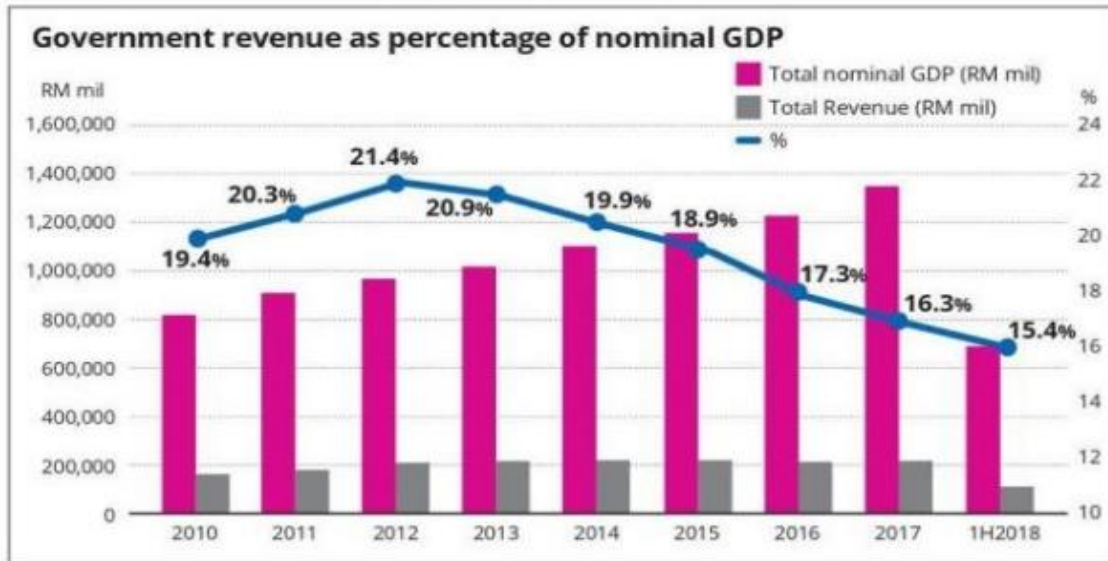


Table 2: Malaysian Government Revenue as percentage of nominal GDP for the Year 2010 – 2018 (Kumar, 2018)

Hypothesis 3: Introduction of digital tax in Malaysia is consistent with the current trend of developing countries worldwide pushing for digital tax.

Over a dozen countries worldwide (both developing and developed countries) have recently begun to enact the new digital services taxes (DSTs), which would generate 2 to 3 percent of the countries' domestic revenues from a narrow group of large internet companies. Supporters justify this unprecedented change in corporate tax law by arguing that most of these companies' value is created by users, and therefore the profits on that value should be taxed in the nations wherein the users reside. Even developed countries such as UK, France, Spain and Italy are considering ways to tax corporate revenues of multinational internet companies through digital services taxes, which would tax a small percent of the companies' domestic revenues. (Kennedy, 2019). These international countries that seek to tax multinationals on revenue believe they should have a right to tax, even if international tax rules do not grant them that right. In other words, they all reflect a view that the international tax system has failed to keep up with changes in the economy. (Faulhaber, 2019)

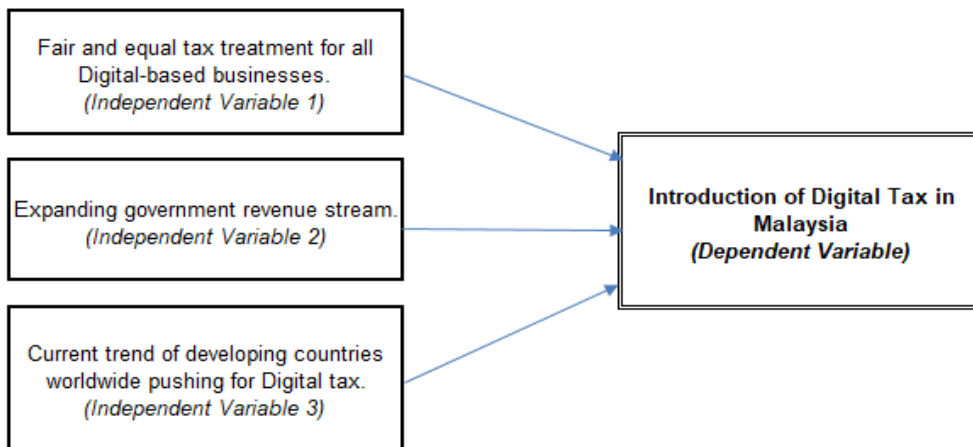


Fig.3: Determinant factors of the introduction of digital tax in Malaysia.

Research Methodology-Sampling design, Research procedures and Data collection

Based on research data compiled by the Malaysian Communications and Multimedia Commission (MCMC), the combined area of the state of Selangor, W.P Kuala Lumpur and W.P Putrajaya has the most internet user residents constituting 33% of the entire area of Malaysia. (MCMC, 2017). In view of the high density of internet users, the Klang Valley area is selected as our target sample area and samples selected are mostly convenience samples. It is noted that the non-probability sampling techniques is adopted in this research since generalization from the research findings is not the main concern and is often used in exploratory studies. This survey research gathered is still expected to provide a first exploratory and an insight of digital tax imposition in Malaysia and public perception of digital tax by Malaysian consumers.

Research questionnaires will be used to generate the relevant and required data for the cross-sectional study. The questionnaires are specifically designed to probe and analyse further the significance of digital tax in Malaysia. The first section of the research survey comprising the social-demographic of the respondents (eg. gender, age group, educational level and occupation). The second section consists of questionnaires related to the imposition of digital tax in Malaysia and the respondent's perception towards this new tax. The questionnaires were measured and evaluated based on the five-point Likert scale of 1 = strongly disagree and 5 = strongly agree. The data and information were collected through a self-administrative questionnaire in July 2019 with a total of 150 questionnaires were distributed to individual consumers in the Klang Valley area.

Data analysis

In view of the time factors, 100 set of data collected from the respondents. Considering the reliability and validity of the data collected, the Cronbach's Alpha test has been conducted to ensure the reliability and validity of the set of data. The outcome of the test related in the three independent variable, the reliability test is given the result of 0.84 which indicate the data collected are reliable.

Table 3: Descriptive Statistics for Respondents

Gender	Frequency	Percentage
Male	56	56.0
Female	44	44.0
Total	100	100.0
Age		
20 - 29 years old	24	24.0
30 - 39 years old	38	38.0
40 - 49 years old	28	28.0
Above 50 years old	10	10.0
Total	100	100.0
Qualifications		
Diploma	6	6.0
Degree	46	46.0
Master	30	30.0
Others	18	18.0
Total	100	100.0
Occupation		
Self Employed	42	42.0
Employed	58	58.0
Total	100	100.0
Subscribe to online portal		
Yes	32	32.0
No	68	68.0
Total	100	100.0
Awareness to Digital Tax to be introduced		
Yes	29	29.0
No	71	71.0
Total	100	100.0

Table 3, demonstrate the descriptive statistics for the respondents for this study is 56% male and 44% female, educated with various education background where 42% of them are self employed. Majority of the respondents do not subscribe to online portal where only 32% do subscribe to it. From the data collected, it show 71% not aware that digital tax will be introduced in Malaysia. The study has conducted the hypothesis testing by using the same set of data which collected from 100 respondents to determine whether there is any relationship between the dependent variable and the three independent variables. Researcher has used the Regression Linear interpret and analyse the result obtain from the hypothesis testing and analyse whether there is a significant relationship between the dependent variable and the independent variable.

Table 4: Hypothesis summary Model Summary

Model	R	R Square	Adjusted Square	Std. Error of the Estimate
H1	.149a	.022	.002	.505
H2	.169a	.029	.008	.503
H3	.125a	.016	-.005	.506

The R value for H1, fair and equal tax treatment is 0.149, which represents the simple correlation coefficient show strong the independent variable is related to the dependent variable. It indicates a very low degree of correlation. In this test, R² is 0.022, R² value indicated how much of the proportion of variance in dependent variable, Hence, the outcome show there is limited relationship between fair and equal tax and introducing digital tax in Malaysia. The R value for H2 expanding government revenue is 0.169, this indicate that the independent variable have only a little relationship with the dependent variable. Therefore, it is a low degree of correlation. 0.029 represented R², which mean there is only 2.9% of variance in "Introducing digital tax in Malaysia" can expand the government revenue. This indicated that there is not much relationship between introducing digital tax in Malaysia can expand government revenue.

The outcome of H3, indicates a low degree of correlations, the R value is 0.125, which showing that the independent variable have a little relationship with the dependent variable. R² value of 0.016 indicating a very small proportion of variance in dependent variable, "introducing digital tax", can be influenced by the trend of digital tax in developing country. All the three Independent variables show simple correlation with the dependent variable, which indicates little influence over the dependent variable. The outcome of the research may be due to lack of awareness of the consumer on the digital tax. Awareness and knowledge of the digital tax is an essential component to educate to the consumer to ensure they understand it is important to the government revenue. Delay in implementation of the digital tax will be hurting to the government revenue as the industrial country such as France already implemented the digital tax.

CONCLUSION AND DISCUSSION

The proposed digital tax to be implemented next year in Malaysia is not an entirely new tax system altogether but essentially an extension of the Sales and Service Tax (SST) that replaced the Goods and Services Tax (GST) on the 1st September 2018. As announced in the Budget 2019, it is considered as an indirect tax system since it is levied on sales transactions performed rather than on net profit earned by the foreign business providers. They also act as the initial tax collector receiving from consumers first before remitting them to our government. With this tax levied, foreign business to local consumer sales (B to C transactions) for digital services are taxable and will definitely level the playing field among the local and foreign digital companies, as well as between online and offline service providers.

As many countries globally are implementing similar digital tax, there should be consistency among the different countries in terms of tax treatment and procedures. This is to avoid confusion and ease of tax accountability. Greater details on how this digital tax is to be introduced, what type of documents is required, tax remittance methods and the registration and submission procedures ought to be further clarified to the foreign service providers. Those foreign-based digital businesses that are within this new digital tax regime should start initiating the proper and necessary actions to implement this B2C tax system which include updating its own internal systems to monitor those relevant transactions covered under the B2C tax regime. This is critical to be in full compliance with the new tax system before it comes into effect on the 1st January

2020. RMCD should intensify more educational effort on behalf of the government to create greater awareness on the mechanism of the digital tax. This is critical to enable those local online users who subscribe to digital services more familiarity on the framework of the digital tax especially on when and how it be taxable by the foreign-service providers.

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STRATEGIC OUTSOURCING AS AN ALTERNATIVE PARADIGM TO BANKS' PERFORMANCE: EVIDENCE FROM SELECTED NIGERIAN BANKS

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Abstract

Banking sector performs a pivotal role in capital formation, which is essential for the economic development of a country. However, the sector in Nigeria have been experiencing cut-throat competition from both local and multinational banks. This has necessitated the adoption of various strategies such as outsourcing to increase their efficiency and remain competitive. This study therefore investigates the effect of strategic outsourcing on the performance of Nigerian banks with specific reference to the selected banks in Osogbo metropolis. Specifically, the study determines the extent of strategic outsourcing by Nigerian banks, examines the effect of strategic outsourcing on deposit mobilization of Nigerian banks, examines the effect of strategic outsourcing on bank's profitability in Nigerian banks and identifies the challenges of outsourcing strategy faced by Nigerian banks. Survey research design was adopted in the study among 100 staff members of selected banks in Osogbo metropolis, Osun State. Data analysis was performed with the aid of simple percentage, mean and Ordinary Least Square (OLS). Result reveals that security services, catering services, advertising and marketing, recruitment services and training of employee services are fully sourced by Nigerian banks. Result further reveals that strategic outsourcing has significant effect on deposit mobilization ($F = 139.254$; $\beta = 0.766$; $t = 11.801$; $P < 0.005$) and banks' profit level ($F = 49.776$; $\beta = 0.580$; $t = 7.055$; $P < 0.005$) respectively. Result also indicates that risk of exposing confidential data, fear of losing management control, security risks, inability to develop clear objectives, share financial burdens, reduce quality control, company's attachment to its brand and processes and lack of top management support are the major challenges confronting the implementation of strategic outsourcing in Nigerian banks. Subsequently, the study recommends that management should use outsourcing as a strategic tool to free up the company's resources so as to focus on its core competencies and banks that outsource should continue to monitor the contractor's activities and establish constant communication.

Keywords: Strategic, Outsourcing, Bank, Profitability, Deposit Mobilization, NDIC, CBN

INTRODUCTION

Banking sector performs a pivotal role in capital formation, which is essential for the economic development of a country. They are acting not only as the custodian of the wealth of the country but also as resources of the country, which are necessary for the economic development of a nation. The general role of commercial banks is to provide financial services to general public and business, ensuring economic and social stability and sustainable growth of the economy. Globally, there is no nation can experience sustainable development without sound financial system. In Nigeria, the sector has witnessed several cases of collapses due to inadequate supervisory structures, as they were cases of official recklessness amongst managers, and the industry was notorious for financial abuse due to unethical practices, insider abuses, poor quality services and employment of unqualified staff and unhealthy competitions.

In order to checkmate this menace aforementioned scenario, federal government via regulatory authorities such as Nigeria Deposit Insurance Corporation (NDIC) and Central Bank of Nigeria (CBN) launched a modern corporate governance, which is in line with International standard setting agencies such as the International Organisation of Securities Commission (IOSCO), the World Bank, the OECD and the United Nations to emphasize the need to harmonize and upgrade accounting standards, enhance the accountability of boards/management of corporate, timely and accurate disclosure of performances. In spite of this promising and commendable policy, most of the banks are still facing distressed syndrome, while some are still thinking of mergers and acquisitions. This is evidenced by revocation of the operating licence of Skye bank by Central bank of Nigeria (CBN) coupled with the current merger and acquisition proposal between Access bank and Diamond bank. In addition, recently, report reveals that the nine banks suffer decline in interest income ranging from 7.8 percent to 29.6 percent of their interest income in the 2018

operating year. This connotes that banks in Nigeria have been experiencing cut-throat competition from both local and multinational banks. This has necessitated the adoption of various strategies such as outsourcing to increase their efficiency and remain competitive.

Strategic outsourcing is evidently documented in the management literature and acknowledged by strategists, scholars and professionals in developed nations as an alternative paradigm to organizational performance. According to Lilly, Gray and Virick (2005), strategic outsourcing improves different dimensions of organizational performance and is attractive to upper management. Strategic outsourcing helps organizations to increase focus on their core competencies. The strategic outsourcing of support activities allows the organizations to increase management attention and resource allotment to those tasks in which the firm has edge. This attention can improve performance and allows the organizations to be more efficient and innovative moreover, outsourcing helps to increase the "quality of work life". Jobs become more meaningful for the staff when firms ensure focus on their core competencies (Bolat & Yilmaz, 2009).

In this global financial competitive environment, Nigerian banks must focus on lean management strategies in order to focus on the core issues of their businesses for the sake of staying ahead of the competitors through the process of outsourcing. This involves reviewing the various activities of the business to determine what is core and what is non-core in order to arrive at make or buy decisions. In this way the organization is able to decide on what to handle in-house, what to accomplish through strategic partnerships and what to outsource to third party professionals or experts (Kareem, Unachukwu & Okegbemi, 2018). There are a number of studies that have focused on strategic outsourcing such as Ohikhena (2017), Musau (2016), Kamanga and Ismail (2016), Kenyon, Meixell and Westfall (2016), Vivian and Christopher (2015), Machua (2014), Suraju and Hamed (2013), Waweru and Kalani (2009), Barako and Gatere (2008). All these studies are foreign and their findings may not be applicable to Nigeria due to social and environmental factors. Only few available studies in Nigeria such as Kareem, Unachukwu and Okegbemi, (2019) and Akinbola, Ogunnaike and Ojo (2013) focused on Nigeria insurance companies and fast food industry respectively, while Ohikhena (2017) focused on human resource outsourcing which is one of the strategic outsourcing dimensions. By implication, the construct is yet to be explored in Nigerian banking industry. This current study intends to fill the gap in literature by examining the effect of strategic outsourcing on the performance of Nigerian banks.

Research Questions

- What is the extent of strategic outsourcing by Nigerian banks?
- To what extent does strategic outsourcing improve deposit mobilization in Nigerian banks?
- To what extent does strategic outsourcing improve bank's profitability in Nigerian banks?
- What are the challenges of strategic outsourcing faced by Nigerian banks?

Research Objectives

The main objectives of this study are to;

- Determine the extent of strategic outsourcing by Nigerian banks.
- Examine the effect of strategic outsourcing on deposit mobilization of Nigerian banks.
- Examine the effect of strategic outsourcing on bank's profitability in Nigerian banks.
- Identify the challenges of outsourcing strategy faced by insurance companies in.

Justification of the study

This study is justified on the premise that strategic contracting has become a trending phenomenon in financial institutions in Nigeria. It is currently used by various financial institutions to deliver a wide array of products and services to reduce the costs and boost organizational performance. There are plethora studies on the effect of outsourcing on organizational performance in both developed and developing countries, but in Nigeria concept, the construct is yet to be explored in banking sector. Thus, this study will serve as eye opener to Nigerian banks on how strategic outsourcing could be applied in the area of cash management services, security services, recruitment services, account opening services, ATM and Point of sales services. Also, the findings would be useful to business and industry leaders, government agencies, religious organizations, and non-governmental organisations (NGO's) when considering the option of outsourcing.

LITERATURE REVIEW

The Concept of Strategic Outsourcing

Outsourcing can be defined as the use by one company of another business to do particular tasks because it can do them more cheaply or effectively. Outsourcing was traditionally used mainly for downsizing and cost reduction at large corporations (Abraham & Taylor, 2006). Scholars advocate that outsourcing should be used as a strategic tool to deliver a forceful impact on corporate growth and financial stability (Holcomb & Hitt, 2007). According to Lacey and Blumberg (2005), outsourcing is a reliance on external sources for manufacturing components and other value adding activities. According to Sako (2006), outsourcing can be defined as the act of one company contracting with another company to provide services that might otherwise be performed by in-house employees. It was further described as a contract service agreement in which an organization hires out all or part of its operations to an external company. The major characteristics of outsourcing are; the activities initially performed in-house are transferred to an external party, the assets, knowledge and in some cases, people; there will be an external relationship between the parties involved over a long period of time, that in transferring the activity to the external party the buyer is exposed to a cost and a risk profile, both of which are new to the companies involved (Maku & Iravo, 2013).

Quinn (1999) also describes strategic outsourcing as a process of engaging the services of a provider to manage essential tasks that would otherwise be managed by in-house personnel. This, when properly done, allows a business to plan the optimal utilization of its resources and capabilities to achieve the best advantage. It also improves the achievability of an organization's strategic goals. This kind of outsourcing strategy can be utilized by any organization regardless of its size and has the effect of not only reducing the cost of operation but also providing an opportunity for optimal allocation of resources to the very necessary functions (Welch & Nayak, 1992)

The Concept of Organizational Performance

The concept of organizational performance emanates from the concepts of efficiency and effectiveness. According to Rosenzweig (2007), organisational performance is the actual output or results of an organisation as measured against its intended outputs (or goals and objectives). Pierre, Timothy, George, and Gerry (2009), however define organisational performance as the ability of an organisation to fulfil its mission through sound management, strong governance and a persistent rededication to achieving results. Effective nonprofits are mission-driven, adaptable, customer-focused, entrepreneurial, outcomes oriented and sustainable. Buchanan (2014) asserts that organizational performance can be measured by analyzing a company's performance as compared to its corporate goals and objectives based on three primary outcomes - financial performance, market performance and shareholder value performance. Businesses simply endeavor to perform well in a number of areas of organization. Most importantly, they strive to do well financially in terms of achieving superior profitability and realizing good returns on investment. In order to acquire as much market share as possible, it is imperative that companies produce a product that is in demand and offer it at a price that allows them to compete in the market. Finally, they need to perform well in terms of creating value for their shareholders by ensuring a sustainable level of growth and shareholder return. In the context of this study, organizational performance will be measured by two components – deposit mobilization and profitability.

Empirical Review

There are divergent views on the relationship between strategic outsourcing and organisational performance. For instance, Kareem, Unachukwu and Okegbemi, (2019) examine the relationship between strategic outsourcing and the performance of insurance companies in Nigeria with specific reference to the selected insurance companies. Purposive sampling technique was used to select top 10 best ranking insurance companies in Nigeria and five (5) staff members were select from each 10 insurance company, totaling 50 respondents as a sample size for the study. A structured closed ended questionnaire designed for the study was used to collect the data from the respondents. Data analysis was performed with the aid of frequencies, percentages and correlation analysis.

Result reveals that strategic outsourcing has significant relationship with the performance of insurance companies in Nigeria. Okechukwu and Okoronkwo (2018) assess the effect of outsourcing on the performance of selected quoted deposit money banks in Enugu State with

regards to influence of loyalty of outsourced staff affect organizational productivity and the effect of job insecurity on organizational growth. Descriptive survey design was adopted in the study among 271 staff of selected money deposit banks in Enugu. The study hypotheses were tested using linear regression. The result of the study revealed that dual loyalty of outsourced staff negatively affects organizational productivity of selected deposit money banks in Enugu state, Nigeria and job insecurity significantly affects organizational growth. Ohikhenana (2017) investigates the effect of Human Resource Outsourcing on the Customers in the Post-Consolidation Banks in Nigeria. Eleven banks out of the 21 Deposit Money Banks in Nigeria post consolidation were selected for the study. Spearman's Rank Correlation Coefficient was employed to analyze the data. The results indicate that there is a statistically significant rank correlation between lack of job satisfaction of outsourced staff in post-consolidation Nigerian banks and the quality of service delivery to customers and there is a statistically significant rank correlation between lack of commitment of outsourced staff to the goals of the post- on solidation banks to which they are deployed and customer satisfaction.

Musau (2016) examines the effect of outsourcing strategy on organisational performance with specific reference to fast moving consumer goods (FMCG) manufacturing industry in Kenya. The study was conducted in the period between September 2015 and April 2016. Result reveals that outsourcing has significant effect on organisational performance. In similar study, Kamanga, and Ismail (2016) study the effects of outsourcing on organisation performance in manufacturing sector in Kenyan firms. The study establishes that positive relationship exist between outsourcing and organisation performance. Vivian and Christopher (2015) examine the effect of Information Technology Outsourcing (ITO) practices on the performance of banking sector in Kenyan. The study further revealed that ITO has a positive and significant effect on financial performance, learning and growth, customer satisfaction and internal processes.

Fan (2000) also conducted a study on strategic outsourcing among British companies. It was established that peripheral activities are the most commonly outsourced with cost reduction being the main driver. A study carried out by on Commercial Banking Crises in Kenya established commercial banks in Kenya have since outsourced a number of non-core functions to third party providers to enable them focus on core activities of the organization. It was further clear that outsourcing is largely motivated by the need to overcome challenges and crises. However, findings of Insinga and Werle (2000) and Yeboah (2013) are contrary to the previous studies. Their studies did not support the claim that strategic outsourcing has significant effect on organisation performance.

RESEARCH METHODOLOGY

Research Design

The survey research design and snowball technique were used because survey is relatively easy to administer and can be developed in less time.

Sampling Technique and Sample Size

Five banks (Zenith Bank, First Bank Plc, UBA, Access Bank and Guaranty Trust Bank) were selected through purposive method. Judgmental sampling technique was also used to select Head of Operation, Accountant, Auditor, and Branch Manager from 5 branches each of the selected bank in Osogbo, Osun State, Nigeria, totaling 100 respondents as a sample size for the study. The choice of these banks is based on the fact that they are five banks ranked by Central Bank to hold over 60% of their total assets and also there are first set of banks to meet the required minimum shareholders fund of N25billion.

Data collection Instrument

The data collection instruments for the study were structured questionnaires that comprised of strategic outsourcing Questionnaire (SOQ), Deposit Mobilization Questionnaire (DMQ) and Bank's Profitability Questionnaire (BPQ). The scales were developed and validated by the researcher for the study.

Validity of the Instrument

Face and content validity of the questionnaire was assumed through comments from experts in measurement and evaluation, while their constructive criticisms, advice and suggestions were seriously considered to ensure the validity of the instrument. The scales were subjected to further item analysis as to determine their psychometric soundness as indicated in Table 1 below:

Table 1: Summary of Results of the Measurement Instruments Validation

Scale	No of Items	Meaning Bartlett	KMO	Eigenvalue of the principal Component	% of the Variance	α of Cronbach
Strategic Outsourcing Questionnaire (SOQ)	7	p = .000 (significant)	0.79	3.012	71.21%	0.79
Deposit Mobilization Questionnaire (DMQ)	5	p = .000 (significant)	0.75	2129	78.16%	0.77
Bank's Profitability Questionnaire (BPQ)	6	p = .000 (significant)	0.74	1.970	69.89%	0.68

From Table 1 above, factor loads of all the indicators are higher than 0.5 which shows that the questions highly explain the variance of their variables. This implies that the measurement model has high factor validity.

Method of Data Analysis

Simple percentage, mean and Ordinary Least Square (OLS) were adopted for data analysis.

Data Analysis, Results and Discussion

Table 2: Strategic Outsourcing by Nigerian Banks

Statement	Fully	Partially	Not outsourced
Automated Teller Machine Services	30(30%)	60(60%)	10(10%)
Account Opening Services	20(20%)	30(30%)	50(50%)
Point of Sales Services	25(25%)	55(55%)	20 (20%)
Cash management services	20(20%)	30(30%)	50(50%)
Recruitment services	70(10%)	20(20%)	10(70%)
Training of employees	65(65%)	23(23%)	12(12%)
Catering services	80(80%)	15(15%)	5(5%)
Security services	85(85%)	12(12%)	3(3%)
Advertising and Marketing	72(72%)	20(20%)	8(8%)
Information technology applications	25(25%)	30(30%)	45(45%)

Table 1 indicates that majority of respondents agreed that about the five functions were fully outsourced by banks in Nigeria. The first is security services (85% of the respondents agreed), the second is catering services (80% of the respondents agreed), the third is advertising and marketing (72% of the respondent confirm), the fourth is the recruitment services (70% of the respondents agreed), the fifth is the training of employee services (65% of the respondents agreed). The findings from the study further reveal that automated teller machine services (60% of the respondents agreed) and point of sales services (55% of the respondents agreed) were partially outsourced, while account opening services (50% of the respondents agreed), cash management services (50% of the respondents agreed) and information technology application (45% of the respondents agreed) were internally managed by most of Nigerian banks.

Table 2: Effect of strategic outsourcing on deposit mobilization in Nigerian banks

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.766 ^a	.587	.583	.38321	2.956

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	20.449	1	20.449	139.254	.000 ^b
	Residual	14.391	98	.147		
	Total	34.840	99			
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.314	.269		4.879	.000
	Strategic outsourcing	.715	.061	.766	11.801	.000

a. Dependent Variable: Deposit Mobilization

Table 2 shows that strategic outsourcing ($F = 139.254$; $\beta = 0.766$; $t = 11.801$; $P < 0.005$) has positive and significant effect on deposit mobilization. Result also indicated that strategic outsourcing has 58.73% decisive effect on deposit mobilization. This implies that strategic outsourcing is strong predictor of deposit mobilization. The implication of this result is that implementation of strategic outsourcing in Nigerian banks may enhance deposit mobilization.

Table 3: Effect of strategic outsourcing on bank's profitability in Nigerian banks

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson	
1	.580 ^a	.337	.330	.52441	.962	
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	13.689	1	13.689	49.776	.000 ^b
	Residual	26.951	98	.275		
	Total	40.640	99			
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.866	.369		5.063	.000
	Strategic outsourcing	.585	.083	.580	7.055	.000

a. Dependent Variable: Bank Profitability

Table 3 reveals that strategic outsourcing ($F = 49.776$; $\beta = 0.580$; $t = 7.055$; $P < 0.005$) has positive and significant effect on bank profitability. Result also indicates that strategic outsourcing has 33.7% decisive effect on bank profitability. This implies that implementation of strategic outsourcing is a veritable tool to bank profitability. The study corroborates Akeem *et al* (2018) findings that implementation of strategic outsourcing in financial institution is an alternative paradigm to financial institution performance.

Table 4: Perceived challenges of strategic outsourcing in Nigerian banks

Statement	Obs	Mean	Remark	Ranked
Fear of Hidden Costs	100	3.58	Accepted	13 th
Risk of exposing confidential data	100	4.67	Accepted	1 st
Company's attachment to its brand and processes	100	3.98	Accepted	7 th
Synchronizing the deliverables	100	3.87	Accepted	9 th
Security Risks	100	4.59	Accepted	3 rd
Failure to recognize outsourcing as a strategy	100	3.75	Accepted	11 th

Risk Public Backlash	100	3.62	Accepted	12 th
Fear of Losing management control	100	4.52	Accepted	2 nd
Share Financial Burdens	100	4.14	Accepted	5 th
Resource deficiency	100	3.29	Accepted	14 th
Reduce Quality Control	100	4.08	Accepted	6 th
Lack of top management support	100	3.92	Accepted	8 th
Resistance to change	100	3.80	Accepted	10 th
Inability to develop clear Objectives	100	4.29	Accepted	4 th
Grand Mean		3.92		

From Table 4, the grand mean of 3.92 (larger than the criterion mean of 3.0) shows that respondents agreed that the above listed items are the challenges that confront strategic outsourcing in most of banks in Nigeria. Furthermore, results show that risk of exposing confidential data, fear of losing management control, security risks, inability to develop clear objectives, share financial burdens, reduce quality control, company's attachment to its brand and processes and lack of top management support are the major challenges confronting the implementation of strategic outsourcing in most of Nigerian banks.

CONCLUSION AND RECOMMENDATIONS

The study investigates the effect of strategic outsourcing on the performance of Nigerian banks with specific selected banks. Specifically, the study determine the extent of strategic outsourcing by Nigerian banks, examines the effect of strategic outsourcing on deposit mobilization of Nigerian banks, examine the effect of strategic outsourcing on bank's profitability in Nigerian banks and identify the challenges of outsourcing strategy faced by Nigerian banks. Survey research design was adopted in the study among 100 staff members of selected banks in Osogbo Osun State. Data analysis was performed with the aid of Simple percentage, mean and Ordinary Least Square (OLS). Study establishes that security services, catering services, advertising and marketing, recruitment services and training of employee services are fully sourced by Nigerian banks. Study further reveals that strategic outsourcing is major predictor of banks' performance measured by deposit mobilization and profitability. Study also confirms that risk of exposing confidential data, fear of losing management control, security risks, inability to develop clear objectives, share financial burdens, reduce quality control, company's attachment to its brand and processes and lack of top management support are the major challenges confronting the implementation of strategic outsourcing in most of Nigerian banks. Subsequently, the study recommends that management should use outsourcing as a strategic tool to free up the company's resources so as to focus on its core competencies and that that banks that outsource should continue to monitor the contractor's activities and establish constant communication.

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MACROECONOMIC SHOCKS AND LEVERAGE EFFECT IN MALAYSIA ISLAMIC REAL ESTATE INVESTMENT TRUST STOCK RETURN: A CONCEPTUAL FRAMEWORK

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Abstract

Over the past decade, Malaysia Islamic capital market is emerging in achieving a total worth of 1.9 million or 61 percent of overall Malaysia capital market as per December 2018. The establishment of Islamic Real Estate Investment Trust (REIT) gained a demand from investors in the Islamic capital market that claims to be a safe investment as the underlying attached to the real estate. Nevertheless, the Islamic REITs structured and operating in accordance with the Shariah principle layout by the Malaysia securities commission, as it beneficial to the potential investors given its high liquidity and diversification opportunity rather than invested in the physical property. In addition, although Islamic REIT it is deemed to have a stable return given the underneath of real estate portfolio but there is still risk inherent such as an impact of the external forces. Thus, the impact of macroeconomic factors shocks towards Islamic REITs is significant review to the investors, policy makers and government to outline their relationship and facilitate their future growth. Nevertheless, the evidence that published on the listed Islamic REITs stock return in Malaysia are very limited and seldom been modelled. The Generalized Autoregressive Conditional Heteroscedasticity (GARCH) model and Exponential Generalized Autoregressive Conditional Heteroscedasticity (EGARCH) model would be employ to analysis the Islamic REIT stock return. Therefore, this conceptual paper is to layout a theoretical framework for the volatility clustering and leverage effect of macroeconomic shocks towards the Malaysia Islamic REIT stock return.

Keywords: Malaysia Islamic REIT, Stock Return, Volatility and Leverage Effect

INTRODUCTION

Islamic capital market experienced an outstanding growth since year 2000 in Malaysia. The Islamic capital market size has reached 59.26% out of total capital market which worth 1,931.14 million as at December 2018 (Securities Commission of Malaysia, 2018). The capital market in Malaysia is unique among the Asia as the market consists of conventional capital markets and Islamic capital markets. The Islamic capital market exists to provide more systematic platform for fund mobilization, especially among Muslim that want to avoid involving in the activities that prohibited in Islam, such as gambling and ambiguity. One of the investment tools that offer in the Islamic capital market is REITs else than Islamic equity and Sukuk. In November 2015, Malaysia government issued the Islamic REITs guidelines that proposed by Shariah Advisory Council to shape the Islamic REIT to the Shariah principles and differ from the conventional REITs in term of issuance and the underlying real estate (Dusuki, 2015). Islamic REITs and Conventional REITs shared the common features in terms of the management company, property manager, trustee and valuation method. However, Islamic REITs can only earn profit through halal activities to compliant with Shariah principles. It makes Islamic REITs are monitoring strictly on Shariah compliance investment vehicle. Hence, a brand-new real estate investment creates an opportunity to investors who are willing to invest in shariah-compliant instruments without owning the properties (Zainuddin and Nordin, 2016).

The Malaysia government has taken initiative to promote Islamic REITs actively as an investment vehicle to develop the Islamic capital market. The Islamic REITs which invest in income generating real estate based on Shariah-compliant become more popular for as an alternative Islamic investment vehicle. The first Islamic REIT called Al'Aqar Healthcare REIT was introduced on 28 June 2006 (Ripian & Ahmad, 2016). Al'Aqar Healthcare REIT which focused on hospital

and healthcare facilities was the first Malaysian company that launch Islamic REITs. It was also the first listed Islamic REIT in the world. Then, Al-Hadharah Boustead REIT was the second Islamic REIT listed in Bursa Malaysia subsequently delisted on 2017. According to Hussin et al. (2016), Al-Hadharah Boustead REIT involved in palm oil plantations and became the first Islamic plantation REIT in Malaysia. The third Islamic REIT introduced in Malaysia was AXIS REIT. It was the first Islamic office and industrial assets REIT that initially launched as conventional REIT in August 2005 but transformed to be Shariah compliant in December 2008 (Hussin et al., 2016). As stated in Ripian and Ahmad (2016), in May 2013, Malaysia issued KLCC REIT which was the world first stapled REIT that stapled two or more entities into a new financial instrument. Furthermore, KLCC REIT combined the current shares of KLCC Property Holdings Bhd (KLCCP) and made up of 3 major components: Petronas Twin Towers, Menara 3 Petronas and Menara ExxonMobil. KLCC REIT are registered and traded on main board of Bursa Malaysia (Wong, 2016). Nevertheless, the newly joined Bursa Malaysia, the Al-Salam REIT on September 2015, a well-established conglomerate with interests in various property sectors such as healthcare, plantations, food and restaurant services, and real estate property. The table 1 shown the market capitalization and portfolio value for each of the listed Islamic REIT in Malaysia as at December 2018. It noticed that, the market capitalization of the fours Islamic REIT are above than 1 billion ringgit Malaysia except for the new comer Al-Salam REIT. Nevertheless, the KLCC REIT with stapled portfolio value of 15 billion ringgit Malaysia are the top in the list and the total portfolio value of the fours Islamic REIT are 20 billion ringgit Malaysia. The Islamic REITs market continue to develop and reach 19 billion ringgit Malaysia of Islamic market capitalization which is 41.40% of the Islamic market (Securities Commission Malaysia, 2018). This shows that the Islamic REITs are developing well after the first introduction in year 2006 under the monitoring of Securities Commission.

Table 1: Malaysia Islamic Real Estate Investment Trusts as at December 2018.

Islamic REIT	Establishment	Market Capitalization (RM' million)	Portfolio Value (RM' million)	Assets Type
Al-Aqar Healthcare REIT	August 2006	1,041	1,462	Healthcare
Al-Salam REIT	September 2015	580	928	Diversified
Axis REIT	June 2005	1,848	2,482	Office
KLCC REIT	May 2013	15,598	15,724	Retail
Total		19,067	20,596	

Sources: Respective Islamic REIT Annual Report 2019

According to Lee and Pai (2010), claimed that there are many literatures have investigated on the volatility forecasting in financial products. However, the volatility of Islamic REITs has seldom been modelled and predicted as compared to the study on Islamic performance by Ong et al., 2012; Hamzah et al., 2010; Ong, Teh and Chong, 2011; and Rozman et al., 2015. Furthermore, Ahmad et al. (2015) emphasized that research paper based on Islamic REITs are comparable lesser than conventional REITs or any other REITs, due to different stock pricing and establishment date of REITs. Thus, the evidence that published on the stock return of listed Islamic REITs in Malaysia are very limited. The barrier was created for those Islamic REITs investor to have better understanding towards REITs stock price volatility due to lack of information. According to Pham (2012), the volatility of Islamic REITs' stock price is the main concern of the investors to invest in the Islamic REITs market given the prices fluctuation and benefits across regional diversification. Nevertheless, the stock prices are more difficult to forecast with the occurrence of market risk fluctuation and based on the random walk theory. However, there are researchers also indicated that economic conditions are unable to foreseen with the existence of uncertainty and its impact towards Islamic REITs as in the study of Hussin et al., 2017. In fact, the economy cycle can have time varying effect on the REITs and it is related to conditional volatility of macroeconomic risks.

Furthermore, the Islamic REIT faced an issue where it appears unattractive to an investor as the Malaysian REITs will remain to volatile due to global conditions that announced by Malaysian REIT Managers Association chairman, Datuk Jeffrey Ng in press release (theStar, 17 July 2019). He highlighted that, an investor should consider the uncertainty before the share prices become

volatile and the rapid rise of the interest rate would prompt the sell down of REITs in earlier of next year. On other hand, the Malaysia economic condition full of uncertainty which related to the government policies which have the significant impact on macroeconomic indicator given the changes in the new government on 14th general election (Moniruzzaman and Farzana, 2018). In line with the macroeconomic indicators, Kuwornu and Owusu-Nantwi (2011) emphasized that stock market price fluctuation influenced by macroeconomic variables such as inflation rate and exchange rate. The authors were urged a further exploration on the impacts of exchange rate fluctuations and systematic risk on the REITs stock return.

Moreover, according to Preis et al. (2012), a financial asset such as stock often possessed a leverage effect that explains a negative shock is greater than a positive shock given for a period of time. The leverage effect is the phenomenon of a future volatility is negatively correlated with past returns. In such a case, according to the past studies, the authors investigated the existence of leverage effect for stock market in different countries (Black, 1976; Christie, 1982). In fact, Suska (2015) found out that leverage effect is asymmetrical which the value of the Islamic REITs' stock decreases will lead to increases in volatility. The decreases of leverage effect also result in decreasing of risk. In addition, Chen and Wang (2006) stated that the leverage effect on volatility of stock market is more significant in market downward movement compared to upward movement. Nevertheless, a dynamic model of volatility that only captures leverage is difficult to find in such a way that the resources itself are restricted in only examining the impact of macroeconomic risks on the stock market. Hence, this study attempts to determine the volatility persistence and leverage effect of macroeconomic shocks such as Inflation, exchange rate, interest rate, money supply and economic growth on Islamic REITs market given its Shariah-compliant characteristics.

LITERATURE REVIEW

Islamic Real Estate Investment Trusts

In July 2006, the establishment of world's first Islamic REIT in Malaysia have initiated the growth of Islamic capital market and offered a new perspective in term of financial management. The Shariah compliant requirements makes a structural difference between Islamic REIT and conventional REIT where Islamic REIT regulated under tight supervision of property investment under Malaysia securities commission. Islamic REIT appears as an alternative investment channel for investors that interested in Shariah compliant properties investment. In fact, Islamic REIT basically invests their fund into well-developed sets of Shariah compliance portfolio that involves property securities such as residential, commercial, and warehouses. (Malaysia International Islamic Finance Centre, 2013). Securities Commission Malaysia 2005 Guidelines defines Islamic REITs as collective investment scheme in real estate, in which the tenant(s) operates permissible activities according to the Shariah principles" (Malaysia International Islamic Finance Centre, 2013). The investment activities included the property leasing and acquisition on Shariah-compliant basis. An Islamic REIT consciousness accept new investments that operate that considered non-Shariah compliance activities (Securities Commission Malaysia, 2005). However, in term of investments on mixture of both Shariah-compliant and non-compliant activities, the total rental income portion that generated from non-permissible businesses relative to Islamic REIT total turnover are required to be less than 20% (Zainuddin & Nordin, 2016). There are several rental activities are considered non permissible activities in Shariah perspective. First of all, Islamic REIT investment should avoid engaging in interest-based (riba) businesses and services since it violates the Shariah principles (Malaysia International Islamic Finance Centre, 2013). Islamic REIT will employ Takaful scheme for property investment protection, but the conventional insurance scheme is applicable when Takaful plans are unable to achieve the insurance coverage (Securities Commission Malaysia, 2005). Furthermore, property business involves haram elements such as alcohol, tobacco, gaming, gambling is prohibited in Islamic REIT. Besides, the decision on investments qualifications of non-space using activities must depend on ijihad, the discussion of Islamic jurists for legal ruling based on Shariah principles (Zainuddin & Nordin, 2016).

A strong regulatory framework in Malaysia plays an important role in governance and investors protections. An Islamic REIT in Malaysia is regulated by Securities Commission that provides clear guideline and incentives for Islamic REIT growth. According to Islamic structure, a typical Islamic REIT consists of investor, REIT manager, Shariah Advisory Committee, trustee, and regulatory authorities (Securities Commission Malaysia, 2005). The establishment of Islamic REIT investment must be approved by Shariah advisory committee in term of Shariah

perspective. Shariah Advisory Council was formed by Bank Negara Malaysia under Section 16b of the Central Bank of Malaysia Act 1958 to ensure Shariah compliance in Islamic products (Laws of Malaysia, 2006). Furthermore, rules and regulation for Islamic REIT was formulated on November 2005 that applicable in global Islamic financial sector. An Islamic REIT should comply with the Shariah principles and also the rules in Securities Commission of Malaysia.

Stock Volatility Persistence and Leverage Effect

According to Gatheral (2011), volatility is a type of rate or yield which the market price of an investment fluctuates for a given set of return. Volatility used to measure the risk of the securities by using standard deviation or option pricing formula to estimate the increases or decreases of return of underlying assets that may be happening in a short period of time. If the price of securities fluctuates rapidly in short period of time, it is considered as high volatility and encounter in high risk (Gatheral, 2011). Mitra (2009) stated that volatility show the dynamic pricing of securities because it is the key variables in controlling an asset price. According to Schiller (1981), the stock market is a famous leading indicator of the economy which involve the market volatility that can be applied to macroeconomic variables and measured of market efficiency.

In the study of Zhou and Kang (2011), sated that REIT's volatility can be forecasting by comparing the relative performance from the Autoregressive Fractionally Integrated Moving Average (ARFIMA) model and Fractionally Integrated Generalized AutoRegressive Conditionally Heteroskedastic (FIGARCH) model. In which the two models to be considered as long memory model can provide the best prediction for the REIT's volatility. Their findings recommended that the best model should be adopted to predict REIT's volatility is long memory model. According to Osmadi and Razali (2014), the authors provided a study about the performances of Islamic REITs during the global financial crisis from 2007 to 2009. Their study result showed that Islamic REITs are more volatile than conventional REIT when dealing with the global financial crisis.

On other hand, Sing, Tsai and Chen (2012) mentioned that the volatility persistence will cause the stock price of REIT to increase. Nevertheless, the declining of REIT stock price will be happened when volatility persistence encounter negative shocks. Beg and Anwar (2012) indicated that the volatility for stock price may only last for a few hours while the volatility for financial asset can last longer. Fakhfekh et al. (2016) explained that the volatility persistence should be investigated to estimate the propagation of shocks and economic downturn that would affect whole financial systems. The determination of volatility persistence is important to estimate the effect of a changing volatility. Diebold (1986) pointed out that high persistence in volatility may be bias in case there are structural shifts in the conditional volatility and it perhaps the increases in outlier returns would result by large volatility shocks. The expectation of volatility many periods in the future will be affected by the volatility clustering. The time series of financial asset returns always display the volatility clustering characteristic shows that the large price changes tend to cluster together will result in persistence of the amplitudes of price changes.

Macroeconomic Indicators

Liu, Loudon and Milunovich (2012) suggested that inflation has a statistically significant positive effect towards REIT which implying that REIT returns have stronger correlation with inflation. REIT returns will also be affected by inflationary expectations although the real estate provides a hedge against inflation. The study further supported by Kola and Furthermore, Kodongo (2017) stated that changes in inflation are significant positive variables which affect risks of REITs returns. Nevertheless Marfatia, Gupta, & Cakan (2017) reported that the inflation surprises have significant negative impact on the REIT returns because REITs are known to be sensitive to inflation across the world. The interconnectedness of the international real and financial economy will strengthen the impact of inflation in the post-2000. Furthermore, Ewing and Payne (2005) also support Marfatia et al (2017) statement by explaining there is expected with an aggregate price shock when the prices are slow to adjust. Thus, inflation lead to lower the expected return of REIT. Nishigaki (2007) also reveal that when inflation rate rises, the REIT performance will drop in the long period.

Moreover, Fang et al (2016) stated that there is a clear negative impact of inflation rate on the REIT. The researcher also found that there is no significant relationship in Japan at the same study. This is due to Japan as a developed country and its inflation is high. The demand of Japanese investors for REITs does not significantly reduced although there is increase in inflation rate in Japan, which leads not to affect its REIT index in the short time period. Thus, author mentioned that, inflations has no impact on the underlying real estate in the REIT. In the study of

Olweny and Omondi (2011) also found out that there was leverage effect which the volatility rises more when the price drops drastically than the following price rise of the similar magnitude. It takes a short time for the effect of shocks to wear off followed by a crisis that happen in the market.

The effect of exchange rate on Islamic REIT markets plays an important role in performing risk management strategies for financial market participants (Ewing, 2005). There are a plenty of research explored about the relationship between exchange rate and REITs' stock price. Most of the literature review mentioned that the changes in the value of exchange rate will result greater impact on the REITs price (Hussin et al, 2017). According to Maysami and Koh (2000), there is a positive relationship between foreign exchange rate and REITs' stock price when an increase the reserves and money supply caused the declining of interest rates could appreciate the currency of dollar and increasing the REITs' stock price. Besides that, Ibrahim and Aziz (2003) also found that the positive relationship fall between exchange rate and REITs prices significantly affect the movement of the REITs' stock price.

According to Loo, Anuar, and Ramakrishan (2016), examine the significant impact of several macroeconomic variables that impact on short and long-term interest rates with the Asian REIT market. The authors concluded that, the developing REIT markets such as Malaysia, Thailand, and South Korea have higher sensitivity towards the macroeconomic environment uncertainty as compared to developed REIT markets that consist of Japan, Hong Kong and Singapore. According to Mohamad (2016), study proved that interest rate has significant positive impacts on the REITs performances in Malaysia. Furthermore, in the study of Yusuf, Hussin, and Ramli (2015) said that, the existence of relationship between Islamic REIT with Islamic Interbank Rate. According to Allen et al. (2000), the scholars' research reported that REITs are more sensitive to changes with long-term basis instead of short-term interest rates and claimed to have stronger correlation with long term interest rate variation as compared to shorter term in the post global financial crisis context.

On the other hand, Osmadi and Razali (2014) evidenced that the negative impacts of interest rate that tends to deteriorate the performance of REITs. According to Dusuki (2015), the author reported that mortgage REITs more likely to have negative relationship with market interest rate fluctuations since the it held mortgages which the prices fluctuates opposite direction of interest rates. Besides, Wong (2016) claimed that there is a weak correlation between REITs and the variation of local interest rate where it unable to prove that REITs are pure yield-play instrument. Kola and Kodongo (2017) proved that macroeconomic risk is not fully related to expected return of REITs. However, they found that there is inverse relationship between the conditional covariance and expected returns of REITs portfolio and the uncertain fluctuation of macroeconomic variable such as de-trended short-term interest rates. Other than that, Kawaguchi et al. (2017) identified the volatility implications of equity REIT stock prices and documented a negative leverage effect in the pre and post Greenspan era, but not during the Greenspan era. These scholars claim that the positive elasticity of variance with respect to the value of equity during the Greenspan era can be explained by a decline in the spread between the interest rate on commercial mortgages and 10-year Treasuries.

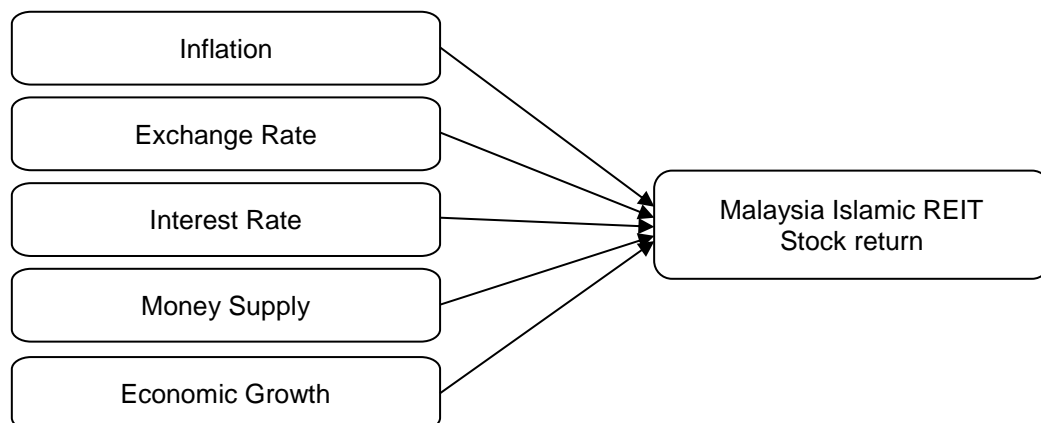
According to Ahearne et al. (2005), real estate price increased when the central banks tightening monetary policy to influence the economic situations. This shows positive relationship between the money supply and real estate price as it related to the central bank's monetary policy. This is because when the expansionary monetary policy is implemented, the loan-making ability of commercial bank will increase which lead to the increase in money supply in the market. The supply of credit to the real estate sector will increase as well and the demand of real estate will increase lead to the growth in price of real estate (Xu & Chen, 2011). However, it also changes the public inflation expectation which the increase in money supply may lead to inflation due to rising in price of real estate. Besides, the money supply is also affected by the supply of mortgage credit. If the central bank decreases the real estate specific credit policy on mortgage down payment requirements, the mortgage credit supply will increase and lead to increase in real estate price. There is a stronger impact on real estate price growth by the implementation of central bank's monetary policy as compared to deregulated markets (Xu & Chen, 2011).

Furthermore, Lee and Lee (2014) stated that money supply is positive coefficient in United Kingdom and France as an increase in money supply will benefit the investors in which the real estate stock responses to the changes of monetary policy. Besides that, Rushid & Kim (2008) mentioned that money supply has negative relationship with the real estate stock depend on more

pro-cyclical monetary policies. According to Lee et al. (2011), there is no evidence found on the influence of money supply to the property stocks in Malaysia and Taiwan as the real estate stock prices are random walk and depend on other factors.

According to the study of Mohamad, Saad and Bakar (2014), the author stated Gross Domestic Product (GDP) is one of the key factors that affect REITs return. The authors said an increment in GDP lead to more cash available to be invested in assets such as real estate. As a country performs well in economy, its GDP will show good statistical pattern and hence this infers the enhancement of overall well-being of a nation. This is supported by the findings of Kamweru and Ngui (2017), in which the increase in GDP results a better performance in real estate industry. Moreover, the research claimed that GDP per capita plays an important role in examining REITs performance on these countries, such as Hong Kong, Singapore, Japan and United Kingdom. The author concluded that there is a positive correlated relationship between them (Leone, 2010). The findings are in accordance to Liow and Yang (2005), in which the author stated the relation of several macroeconomic risks that includes GDP have long run impact in Asian markets. Besides, the research carried out by Hussin et al. (2012) also mentioned that there is a positive impact of economic growth on Islamic stock market in Malaysia. This is further explained by Azmin and Shariff (2016) highlighted that a growing economy lead to positive impact on REITs value and increase the rental received. In the other word, if countries possess different economic condition, in relation to the REITs return also offers difference level of rates (Alias & C.Y., 2011). Based on the research by Yunus (2012), reported that GDP is one of the factors that drives real estate return positively for ten other international market in the manner of short-term impact, given that the diverse of economies development across countries.

Figure 1: Proposed Conceptual Framework



RESEARCH METHODOLOGY

Research Design

The study is mainly to examine the volatility persistence and leverage effect of macroeconomic variables on Islamic REITs stock return. Therefore, the natural of study based on quantitative research to derive the empirical results of volatility and leverage effect of Islamic REITs stock return. According to Kruger (2003), the quantitative data allows the research to replicate the vast of information and facilitate the comparison across categories and over time. Secondary data has been chosen to study the relationship between the endogenous and exogenous variables and an empirical result are needed to provide for the exogenous variables make this research design best suit the study. The data of endogenous and exogenous variable which is the Malaysia Islamic REITs stock prices and macroeconomic variables are collected from Bloomberg terminal respectively. This study retrieves quarterly data of 52 observations from the period of 2006 to 2018.

The historical stock price of Malaysia Islamic REITs at the end of trading day of March, June, September and December from the period of 2006 to 2018 are collected from Al'Aqar Healthcare REIT, AXIS REIT and KLCC REIT, expressed in Ringgit Malaysia from Bloomberg Terminal. The Al-Salam REIT listed on September 2015 excluded from the study sample as the sample sizes for the respective i-REIT less than a minimum of 30 observation period for mean and deviation

estimates as specified in the central tendency theorem. In order to calculate the percentage change of i-REIT stock return, the equation as follow:

$$\Delta \text{i-REIT} = \frac{\text{Stock price}_t - \text{stock price}_{t-1}}{\text{stock price}_{t-1}}$$

Where,

$\Delta \text{i-REIT}$ = Percentage changes of i-REIT stock monthly return between t period and $t-1$ period.

Stock price t = The i-REIT closing stock price at end of the trading month t .

Stock price $t-1$ = The i-REIT closing stock price at end of the trading month $t-1$.

The quantification of macroeconomic variables for this study are retrieves from Bloomberg terminal as follow:

Macroeconomic variables	Proxy	Measurement	Unit of Measurement
Inflation	Consumer Price Index	(Current Period Price of the Basket)/(Base Period Price of the Basket) $\times 100$	Index
Exchange Rate	United State Dollar to Malaysia Ringgit	The quotation price of USD / MYR	Rate
Interest Rate	Islamic interbank rate	The quotation rate between Interbank	Rate
Money Supply	M3	Short term deposits + money market funds + coins and notes + other liquidity money equivalents	Monetary value
Economy Growth	Gross Domestic Product	Private consumption + gross investment + government investment + government spending + (exports – imports).	Nominal value

DATA ANALYSIS

Unit Root Test

The unit root test is used to determined order of each of the variable's integration. The series of data collected to check the stationary to prevent the result to be invalid. The mean, variance, covariance of series is constant across different periods indicate that the variables are in stationary trend (Gujarati & Porter, 2009). Hence, the stationary variables will provide more accurate result as compared to non-stationary variables. 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. (Ling et al, 2013). Hence, the Augmented Dickey-Fuller (ADF) test used to analyses the stationarity of the variables. Besides, Phillips-Perron (PP) test will also apply to strengthen the accuracy of result.

Generalized Autoregressive Conditional Heteroscedasticity (GARCH) model

Autoregressive Conditional Heteroscedasticity model is a stationary non-linear model which first proposed by Engle (1982), which is one of the most commonly used method to specify the volatility. The natural extension of the model was extended by Bollerslev (1986) and Taylor (1986) independently called it as GARCH model. This model allows the conditional variances to be independent upon previous own lags to overcome the limitations of ARCH model and make it more realistic. The heteroscedastic features and volatility of parameters can be captured by GARCH model and to reduce the chances of multicollinearity problem between the estimates, it only includes fewer parameters as compared to ARCH model. Furthermore, the GARCH model only can be used if there is a presence of ARCH effect by looking at the F statistics and Obs*R

squared (LM statistics). It is the improved version of the ARCH model by combining the MA (moving average). In addition, the volatilities also can be determined by coefficients of final output whether it is affected by new information (α_1) or moving average (α_2) effect by itself. The regression for this study as follow:

$$\text{LnREIT}_{st} = \beta_0 + \beta_1 \text{CPI}_t + \beta_2 \text{lnEXC}_t + \beta_3 \text{IIR}_t + \beta_4 \text{M3}_t + \beta_5 \text{lnIPI}_t + \varepsilon_t$$

$$\varepsilon_t \sim N(0, \alpha_0 + \varepsilon_1 \mu^2_{t-1})$$

Where,

LnREIT_{st}	= natural logarithm of Malaysia Islamic REITs stock
β_0	= Intercept term
CPI_t	= Inflation Rate
lnEXC_t	= natural logarithm of Exchange Rate
IIR_t	= Interest Rate
M3_t	= Money Supply
lnIPI_t	= natural logarithm of Economic Growth
ε_t	= residuals

The GARCH model estimation for this study as follow:

$$Y_{j,t} = \mu + \beta_1 \sum_{i=1}^n Y_{j,t-1} + \varepsilon_t$$

$$h_{j,t} = \alpha_0 + \alpha_1 \varepsilon^2_{j,t-1} + \beta h_{j,t-1} + \varepsilon_t$$

Where,

$Y_{j,t}$	= excess return of Islamic REITs
ε_t	= residuals
$h_{j,t}$	= conditional variance
μ, α_0	= constant
α_1	= coefficient of ARCH term
β	= coefficient of GARCH term

The persistence of a traditional GARCH model refers to the sum of two parameters, α_1 and β should be less than one. The volatility considered as explosive if the sum is greater than one.

Exponential Generalized Autoregressive Conditional Heteroscedasticity (EGARCH) model

GARCH model is often being used by financial institutions to estimate and measure the volatility of an investments. However, since traditional GARCH models could not detect the leverage effect and explain asymmetry error distribution, which it refers to the impact of the bad news is greater than good news generated on volatility. Therefore, this study employs the extended version of GARCH model proposed by Nelson (1991), Exponential GARCH (EGARCH) model to capture these asymmetric impacts. This modified model is to capture the extent of the effect on future volatility. The variance equation of EGARCH model can be expressed as follows:

$$\log \sigma_t^2 = \omega + \alpha_1 \left\{ \frac{|\varepsilon_{t-1}|}{\sigma_{t-1}} - \sqrt{\frac{2}{\pi}} \right\} + \beta \log(\sigma_{t-1}^2) + \gamma \varepsilon_{t-1}$$

Where,

ω	= intercept
α_1	= the coefficient of ARCH term at particular time
γ	= indicator of leverage effect
β	= persistence in conditional volatility

The variance of EGARCH of $\gamma \geq 0$ indicate that the impact of the shocks on the Islamic REITs price is rather asymmetric or the existence of volatility clustering, whereas if γ is negative and significant, this indicates that the leverage effect is present between the endogenous and

exogenous variable. In addition, β accounts for the stationarity of a series of data in which to determine the time of the volatility takes to the shocks in the market. (Ezzat, 2012).

CONCLUSION

Nutshell, the economic development of Malaysia has been significantly boosted by the improvement of Islamic finance witnessed in recent years. The relationship among the various macroeconomic variables and Malaysia Islamic REITs in the Malaysian economy should be given the necessary attention by researchers to make sure that the stability of Islamic stock improves and therefore remains competitive to drive the economic growth of the country. Thus, the objectives of this study and its findings are not only important to academicians and investors, but also to policy makers. It is the hope of the researcher that this study will deepen the knowledge of investors and those looking to invest in real estate. To policy makers, this study provides the knowledge for formulating economic and government policies necessary for stabilizing and stimulating the economy of a country. Nevertheless, this study provides a discussion of Islamic finance to set a basis for Malaysia Islamic REIT, the regulatory framework, and conceptual model property trust funds in Malaysia. This review lays a theoretical framework for establishing the study relevance and foundation basis and contribution to the Islamic finance literature review.

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LOAN DELINQUENCY IN MICROFINANCE: DOES IT HAVE ANY RELATIONSHIP WITH POVERTY LEVEL OF BORROWERS?

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Abstract

Delinquent loans do not necessarily turn into default, but they adversely affect the financial performance of any lending institution. In microfinance, loan delinquency is a key concern, as poor borrowers lack collateral and microfinance institutions (MFIs) face information asymmetry which may lead to the problems of adverse selection and moral hazard. But is there any relationship between loan delinquency and poverty level of borrowers? In other words, are poor people, compared to the not-so-poor ones, riskier in terms of their chance of default? This paper undertakes a rigorous examination of the relationship between loan delinquency and level of poverty. The findings confirm their positive relationship and suggests that the poorer the microborrowers, the higher the risk in terms of chances of default.

Keywords: Microfinance, Loan Delinquency, Poverty Levels, Information Asymmetry.

INTRODUCTION

Delinquent loans are also called impaired loans or non-performing loans (NPL). A loan is delinquent if payments or installments of the loan are delayed or overdue by a certain number of days. The time limit is usually 90 days, as often used by banks and financial institutions. So NPLs are those loans for which the principal and/or interest payments are in arrears by at least 90 days. Subsequently, if one or more installments are never repaid, the loan becomes default. But delinquent loans do not always go into default. For instance, Athreya, Sánchez, Tam and Young (2018), in their study on consumer debt delinquency, observe that 85% of borrowers, who are late on payments by 2-3 months, pay during the next quarter, and 40% reduce their debt. Sharma and Zeller (1997), in their analysis on group-based microcredit programs, also opine that most of the arrears are eventually paid, albeit late. Even if the loans do not necessarily turn into default, delinquency adversely affects the financial performance of banks and other lending institutions.

In microfinance, delinquent loans are a key concern, as poor borrowers lack collateral and MFIs face information asymmetry. Information asymmetry may lead to the problems of adverse selection and moral hazard (Armendáriz & Morduch, 2010; Stiglitz, 1990). But is there any relationship between loan delinquency and poverty level of borrowers? In other words, are poor people, compared to the not-so-poor ones, riskier in terms of their chance of default? For microlenders and practitioners, loan delinquency—the riskier of which is measured by the ratio of portfolio at risk over 90 days—is a major risk and the problems of information asymmetry exacerbate the difficulty of assessing such risk.

LITERATURE REVIEW

Information asymmetry creates an imbalance of power in a transaction, as one party has better information than the other. The party that lacks information faces difficulty in negotiating the terms of the contract as well as in monitoring the performance of the other party after the contract is made. These problems of asymmetric information explain why it is difficult for lenders to serve the poor. Lenders need information about the characteristics of loan applicants in order to avoid selecting risky borrowers. But their incomplete information about poor borrowers leads to the problem of adverse selection. Moreover, lenders' incomplete information about the actions of borrowers after the transaction has taken place leads to the problem of moral hazard.

A number of researchers focus on explaining joint liability group lending model of microfinance that helps reducing information asymmetries. For example, Ghatak (1999) and Gangopadhyay

and Lensink (2009) show how joint liability contracts can mitigate adverse selection problems, whereas Stiglitz (1990) and Armendáriz and Morduch (2010) show how such contracts reduce moral hazard. Group lending, however, leads to assortative matching, where safe borrowers in their mutual interest group together and risky borrowers have no choice but are forced to group with other remaining risky borrowers who opt to default on payment more often. Group lending is ineffective in places where population density is low, social ties are loose, and peer monitoring costs are high (Lehner, 2009). Moreover, Group lending incurs additional costs of group formation, training on group procedures, regular meeting and supervision (Shankar, 2007).

Therefore, despite the disciplining effect of groups, joint-liability lending is now losing ground and microfinance firms around the world are moving towards individual lending (Attanasio, Augsburg, Haas, Fitzsimons, & Harmgart, 2011). The primary responsibility for loan decisions under individual lending lies with loan officers. It is more difficult for loan officers to collect information about the poorer people, compared to not-so-poor. The poorer the clients are, the more remote and scattered they become. They may not even have any fixed property or place to live. Loan officers face increased difficulty to evaluate whether these people are in a position to utilize the loan amount. Once the loan is sanctioned, poorer borrowers are also likely to be more difficult to monitor than comparatively richer borrowers. Hence, the problems of asymmetric information are particularly severe for the poorer. Moreover, poorer clients are always more vulnerable to external shocks (Quayes, 2012) and as such, regardless of the lending type, the level of poverty is often linked to delinquency risk.

A significant number of studies examine the relationship between loan delinquency and the level of poverty of micro-borrowers. In the microfinance literature, borrowers' poverty level is commonly measured by average loan size so that smaller loans indicate poorer clients. Prior research suggests that loan size and delinquency are inversely related to each other (Baklouti, 2013; Kodongo & Kendi, 2013). In their study on the determinants of loan repayment problems among Malaysian micro-borrowers, Mokhtar, Nartea and Gan (2012) also find the negative relationship between loan amounts and chances of default. However, Serrano-Cinca and Gutiérrez-Nieto (2014) find no significant relationship between loan size and delinquency. Quite the contrary, Pal and Mitra (2017), and Sharma and Zeller (1997) find positive relationship between these two variables. It is argued that the borrower or group finds it more difficult, in the event of project failure, to repay out of their personal resources. Gool, Verbeke, Sercu and Baesens (2012), in their study on a Bosnia-Herzegovinian microlender, maintain that the incentive to deviate increases for bigger loans. The findings of Jaunaux and Venet (2009) also associate higher loan amounts with higher likelihood of repayment problems because of more difficulty for an MFI borrower to reimburse excessively high amounts.

Table 1. Literature summary on the relationship between loan size and delinquency

Literature	Relationship result	Explanation
<u>Conventional credit markets:</u>		
Jiménez and Saurina (2004), Anyamele (2015)	Negative	More careful screening for larger loans; shock events impact delinquency
Wang (2015), Kim et al. (2017)	Positive	Effectiveness of lender's collection intensity towards larger loans is questioned; private loans are used to reduce existing debts; more private loans worsen individual's financial situation
<u>Microfinance markets:</u>		
Serrano-Cinca and Gutiérrez-Nieto (2014)	Non-significant	What matters is not loan size, but repayment capability of individual borrower
Mokhtar et al. (2012), Kodongo and Kendi (2013), Baklouti (2013)	Negative	Small-loan borrowers lack experience on strategies of running a profitable venture; large-loan borrowers do not have the tendency to divert

Sharma and Zeller (1997), Jaunaux and Venet (2009), Gool et al. (2012), Pal and Mitra (2017)	Positive	If project fails, large loans are more difficult to reimburse out of personal funds; incentive to deviate increases for bigger loans; over-lending
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This study hypothesizes the negative association between loan size and delinquency. Such a relationship can be attributed to a number of factors. For instance, delinquency risk increases more because of unanticipated economic shocks (Getter, 2003), and it is the poorer clients who are more susceptible to such shocks that disrupt their income stream (Quayes, 2012; Sheremenko, Escalante, & Florkowski, 2017). They also have tendencies to use funds for consumption and non-productive purposes, ranging from marriage and festivities to such pressing reason as medication for family members (Hossain et al., 2019). Moreover, small-loan borrowers lack experience on strategies of running a profitable venture (Kodongo & Kendi, 2013; Mokhtar et al., 2012), while large-loan borrowers are experienced, do not have tendencies to divert and are more likely to use borrowed funds in productive manner (Baklouti, 2013). Furthermore, the poorer the customers are, the more costly it is for MFIs to serve them. But raising fees worsens incentives to repay, and higher interest rates undermine repayment discipline (Cull & Morduch, 2018).

DATA AND METHODS

MFI data are collected from the Microfinance Information Exchange (MIX) Market database. The final unbalanced panel consists of 4,950 MFI-year observations of 1,168 MFIs from 42 countries in 6 regions: Africa, East Asia and the Pacific, Eastern Europe and Central Asia, Latin America and the Caribbean, Middle East and North Africa, and South Asia. International Monetary Fund database is also used to draw information regarding inflation (consumer prices, annual %).

With regard to variables, this study employs portfolio at risk over 90 days (RISK>90) as an indicator of loan delinquency. RISK>90 is the portion of gross loan portfolio that is overdue for more than 90 days. For robustness, RISK>30 is also used in Model 2. Poverty level of borrowers is proxied by average loan size (SIZE) which is a common measure used in the literature (Abate, Borzaga, & Getnet, 2014; Awaworyi Churchill, 2018; Kaur, 2016). The argument behind this proxy is that poorer clients demand smaller loans and their low income does not allow them to take out big loans. Moreover, MFIs will not disburse larger loans to the poorer due to higher default risk (Hermes & Hudon, 2018). Average loan size is used here as a ratio over Gross National Income (GNI) per capita of the respective country for international comparisons.

Two firm-specific control variables are used: yield on gross portfolio (YIELD) and percentage of women borrowers (WOMEN). Inflation is used as a country-specific control variable which is measured by the consumer price index (INFLATION). The following two econometric models are employed to examine the hypothesized relationship:

Model 1:

$$RISK90_{it} = \alpha + \beta_1 SIZE_{it} + \beta_2 YIELD_{it} + \beta_3 WOMEN_{it} + \beta_4 INFLATION_{it} + \mu_i + \varepsilon_{it}$$

Model 2:

$$RISK30_{it} = \alpha + \beta_1 SIZE_{it} + \beta_2 YIELD_{it} + \beta_3 WOMEN_{it} + \beta_4 INFLATION_{it} + \mu_i + \varepsilon_{it}$$

RESULTS

Table 2 shows the descriptive statistics and correlations for dependent and independent variables. All the correlation coefficients are below 80%, hence, there is no evidence of multicollinearity among the variables. Moreover, variance inflation factor (VIF) analysis reveals that multicollinearity is not a concern (mean VIF = 1.07, maximum VIF = 1.11). In order to detect the most efficient estimator, Breusch and Pagan Lagrange multiplier (LM) test and Hausman test were conducted. The result of LM test shows the inefficiency of pooled OLS model (Prob > χ^2 = 0.0000), and Hausman test supports the use of a fixed effect estimator (Prob > χ^2 = 0.0001). Econometric issues like heteroskedasticity and autocorrelation are tested by modified Wald test ((Prob > χ^2 = 0.0000) and Wooldridge (Prob > F = 0.1838) respectively. Because of the presence of heteroscedasticity, robust standard error is calculated in this study.

Table 2: Descriptive statistics and correlation matrix

Variable	Mean	SD	RISK90	SIZE	YIELD	WOMEN	INFLATION	VIF
RISK90	0.048	0.128	1					1.00
SIZE	0.352	1.082	0.003	1				1.08
YIELD	0.249	0.200	-0.049	-0.121	1			1.11
WOMEN	0.695	0.262	-0.051	-0.254	0.094	1		1.09
INFLATION	0.065	0.045	0.018	-0.011	-0.268	0.081	1	1.09

Regression results are presented in Table 3. Model 1 shows that SIZE as an independent variable affects the outcome variable RISK90 significantly and negatively (-0.0204, $p < 0.01$). The significant negative relationship is also reported in Model 2 between SIZE and RISK30 (-0.0244, $p < 0.01$). The negative relationship between loan size and delinquency is in conformity with the findings of Mokhtar et al. (2012), Kodongo and Kendi (2013), and Baklouti (2013). The negative coefficient of SIZE indicates that the lower the loan size (meaning greater poverty), the higher is the MFI portfolio at risk. This relationship implies that with the increase of depth of poverty the risk of loan delinquency increases significantly. Regression output in the Table thus shows that more depth in terms of poverty level of borrowers leads to increased delinquency risk for microfinance organizations.

Table 3: Results of the estimations

	Model 1 (RISK90)	Model 2 (RISK30)
SIZE	-0.0204*** [0.0065]	-0.0244*** [0.0085]
YIELD	-0.1329*** [0.0335]	-0.1213*** [0.0354]
WOMEN	-0.0355** [0.0166]	-0.0405* [0.0207]
INFLATION	-0.0761* [0.0393]	-0.0862* [0.0452]
Constant	0.1176*** [0.0159]	0.1389*** [0.0188]
Observations	4,950	4,928
Number of MFIs	1,168	1,167
R²	0.3496	0.3523
Adjusted R²	0.1479	0.1505

Standard errors in brackets

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

CONCLUSION

Delinquent loans affect the profitability and lending potential of banks in a number of ways. First, credit-related revenues decline as NPLs do not generate interest income (Fofack, 2005). Second, in addition to interest amount, the principal has also been left unpaid for a relatively long period of time which, consequently, limit the lending operations of financial institutions. Third, banks incur additional costs in dealing with problem loans. The cost of managing collection raises as well as the spending on monitoring and working out increases (Berger & Young, 1997; Kwan, 2003). Fourth, delinquent loans also affect earnings as banks need to set aside increasing amounts for reserves. Such provision is the first line of defense for a bank against actual loan losses (Hatfield & Lancaster, 2000). Finally, delinquent loans can erode the capital account if earnings are insufficient and actual losses exceed the loan loss reserve (LLR) of a bank (Caprio & Klingebiel, 1996).

In microfinance, loan delinquency is a major risk. A growing number of researchers empirically examine the relationship between loan delinquency and the level of poverty of microfinance

borrowers. But The findings of studies to date have been mixed, and such outcomes call for a more rigorous examination of their relationship. This study, using a robust dataset and methodology, provides the statistical evidence of a significant positive relationship between poverty level of borrowers and delinquency risk. The findings offer an important insight into MFI mission drift and help explain the microlenders' increased attention towards better-off clients.

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CAPITAL STRUCTURE AND FIRM PERFORMANCE OF MALAYSIAN LISTED COMPANIES: MODERATING EFFECT OF GROWTH RATE

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Abstract

This study investigated the relationship between capital structure and firm performance using partial least square (PLS) analysis for a sample of top 100 Malaysian listed companies on the Bursa Malaysia Stock Exchange from 2012 to 2016. The study used two performance measures namely return on equity (ROE) and return on assets (ROA) as dependent variables. Capital structure including short term debt (STD), long term debt (LTD) and total debts (TD) was the independent variable. The results indicated that firm performance, which is measured by ROA and ROE, is negatively influenced by LTD. STD and TD is insignificant towards firm performance. Growth shows significant and negative moderating effect between long term debt and firm performance. Thus, the results of this study can contribute to the body of knowledge by identifying how the performance of Malaysian companies is affected by capital structure decision.

Keywords: Capital structure, performance, firm growth

INTRODUCTION

In today's competitive and dynamic business world, finance decision plays a fundamental role in a firm's day to day performance and operation (Negasa, 2016). Whether a business is newly born or is an established one, it requires funds to carry out its activities. They need funds for daily running or business expansions. This fund is referred to as capital and is an essential fund in the life of a business. However, capital can become a burden or liability for an enterprise. Two major sources which are available for firms to raise funds for their activities are internal and external sources. The internal source refers to the funds generated within the enterprise which mostly retained earnings. Any fund sources not from within the earnings of activities are termed external financing. The external financing may involve the increase of the number of co-owners of a business or outright borrowing in the form of loan (Chechet&Olayiwola, 2014). Basically firms will likely focus on their internal financing compared to the external financing in order to maintain sustainability. In a situation if external financing is inevitable, the firm will opt for secured debt compared to risky debt and will only issue common stock or equity as a last resort (Hamid, Abdullah & Kamaruzzaman, 2015). In the case where interest from the debt is not tax deductible, there will be no difference for the firms as to whether they use debt or equity to finance their assets. Thus, the firm will not choose debt financing as their capital structure since they will not receive any tax advantages of debt. On the other hand, where interest is tax deductible, the firm will maximise the value of their firms by using 100 percent debt financing (Hamid, Abdullah & Kamaruzzaman, 2015).

The relationship between capital structure and profitability cannot be ignored because the improvement in the profitability is necessary for the long term survival of the firm (Mohammad & Jaafer, 2012). Although the financial leverage provides tax benefits to the firm, however it may also decrease potential return in the company. To date, there has been a lack of studies and focus given to the association between capital structure and profitability in the Malaysian listed companies and therefore this paper will look in depth on the relationship between capital structure and firm's profitability of the top 100 public listed companies (excluding the financial sector) in Malaysia. Similarly, there is a lack of research in the relationship between capital structure and profitability established in developed and developing context (InunJariya, 2015).

The main objective of the firm is to maximize its profit and at the same time minimize its costs when it looks for resources to finance its business operation. However, capital structure decision varies by many factors in different life cycles of business. For example, at the start up stage a firm tends to have higher equity over debt, since the cost of interest is a real burden for them at the beginning due to the fluctuation of their income. Furthermore, as they grow and become large

companies they use more and more debt rather than issuing equity. Hence, the main objective of this paper is to examine the significance of the relationship between capital structure and profitability of the 100 top listed companies in Malaysia from 2012-2016.

LITERATURE REVIEW

2.1 Capital structure theories

The theories suggest that firms decide on a capital structure based on the attributes that determine the various costs and benefits associated with debt and equity financing (Abor and Biekpe, 2009). After the work of Modigliani and Miller (1958), several theories of capital structure have been developed to explain the optimal capital structure. Pecking order theory, trade off theory and agency theory are the most popular theories of capital structure.

Modigliani and Miller Theory (M&M) forms the foundation of capital structure theories (Kumar and Rao, 2015). The assumption of the Modigliani and Miller Theory (1958) is that firms have a particular set of expected cash flows. After selection of a certain proportion of debt and equity to finance the firm's assets, the cash flow would be allotted among the investors. Investors and firms are assumed to have equal access to financial markets, which allows for homemade leverage. Therefore, the leverage of the firm has no effect on the market value of the firm (Luigi & Sorin, 2009). M&M assumed that the market is perfect and has no influence on the value of a firm, investors have homogeneous expectations, it is a tax free economy and there are no transaction costs. However, this theory is inapplicable as it is based on restrictive assumptions and is inconsistent with the real world. Investors prefer to buy undervalued shares and sell at higher prices to earn income (Salim & Yadav, 2012). Hence, Modigliani and Miller (1963) revised their position by incorporating tax benefits as determinants of capital structure. To strengthen this argument, M&M explained that a firm that honors its tax obligation benefits from partially offsetting interest called tax shield in the form of payment of lower taxes. Thus, the firms are able to maximize their value by employing debt due to tax shield benefits associated with debt use (Ahmad, Abdullah & Roslan 2012). M&M theory was criticized due to some weaknesses and inapplicable assumptions. Nevertheless, it provided the foundation for other theories put forth that took into consideration the market imperfections. The M&M theory has been expanded into the pecking order theory and trade off theory.

Pecking order theory (POT) propounded by Myers and Majluf (1984) argued that firms prioritize their sources of financing and usually prefer internal financing. If external financing is needed then debt is chosen and equity would be the last resort. To avoid the underinvestment problem, managers seek to finance new projects using a security that is not undervalued by the market, such as internal funds and riskless debt. This is because a firm has more information than outsiders and information asymmetry investors demand more premiums for information-sensitive securities (e.g. equity). However, many profitable firms prefer debt financing for new projects since they have sufficient funds in the form of retained earnings.

The second theory is trade off theory (TOT) which implies that leverage has a positive relationship as contrary to the pecking order theory. It assumes the presence of an optimal capital structure that maximizes shareholder's wealth and simultaneously minimizes external claims to wealth. It considers the trade-off between benefits of interest tax shield of debt and cost of financial distress (Kumar & Rao, 2015). The advantage of borrowing allows companies to attain tax shield, that is, a firm pays lower tax when it incurs more debt. Companies are most likely to use debt financing up to a certain level until the cost of financial distress starts to surface (Saarani & Shahadan, 2013). A highly leveraged means with a high debt ratio is always associated with the need for high returns. This is because the firm is exposed to bankruptcy risk if not managed well. This explains why highly leveraged firms require high returns to compensate for the risk. Incidentally, interest payment for debt is tax-deductible. An optimal capital structure could therefore be achieved by the firm to enjoy the maximum tax benefits.

The last theory is agency cost provided by Jensen and Meckling (1976) which discusses the conflict of interest between principals (shareholder) and decision makers (agents) of firms (managers, board members, etc); this conflict stems from the differences in behavior or decisions by pointing out that the parties (agents and shareholders) often have different goals, and different tolerances toward risk. Few managers will achieve their personal goals rather than maximize benefits to the shareholders. Hence, the main conflict that shareholders face is ensuring that managers (agents) do not invest the free cash flow in unprofitable projects (Nassar, 2016). If the

firm has high cash flow and profitability, increasing of debts can be used as a toll of reducing the scope for managers, so that he resources of the firm may not be wasted as a result of their activities (Negasa, 2016).

2.2 Empirical Review

Here are some findings of several recent studies which revealed conflicting results regarding capital structure and firm performance relationship. Some of them found that there is a negative relation between capital structure and firm performance (such as Salim&Yadav, 2012; Mohamad& Abdullah, 2012; Tailab, 2014 and Mburu, 2015), while others found a positive relation between capital structure and firm performance (such as Abor, 2005 and Negasa, 2016).

Mohammad and Jaafer (2012) examined the effect of capital structure on profitability of the industrial companies listed on Amman Stock Exchange from 2004-2009. Their results revealed significantly negative relation between debt and profitability. These findings imply that an increase in debt position is associated with a decrease in profitability; thus, the higher the debt, the lower the profitability of the firm.

A study by Hamid et al. (2015) showed that debt ratio is negatively and significantly related to profitability in 46 family firms and 46 non-family firms in Malaysia. They argued that profitable firms depend more on equity than debt as their financing option. This is consistent with the findings of Chechat and Olayiwola (2014) which showed that debt ratio is negatively related to profitability in Nigerian listed firms from 2000 to 2009. This was followed by Sultan and Farooq (2015) who found that there is negative relation between return on equity and debt in listed companies of Pakistan on the Karachi Stock Exchange (KSE) during the period 2004-2014. Foo, Jamal, Karim and Ulum (2015) did a study on capital structure and corporate performance in Malaysian oil and gas companies in the period of 2003-2013. They used panel data regression to show an increase in the firm's debt level would negatively affect shareholder's return.

Meanwhile, studies by Ahmad, Abdullah and Roslan (2012) found that only short term debt and total debt have significant relationship with return on asset. They suggest that short term debt tends to be less expensive and therefore increasing short term debt with a relatively low interest rate will lead to an increase in profit levels. Kodongo, Mokoaleli-Mokoteli and Maina (2015) investigated the relationship between leverage and financial performance of listed firms in Kenya from 2002 to 2011. Their study found strong evidence that leverage significantly and negatively affects the profitability of listed firms in Kenya. Nassar (2016) examined the impact of capital structure on the firm performance in Turkey from 2005-2012. He used return on asset (ROA), return on equity (ROE) and earnings per share (EPS) as well as Debt Ratio (DR) as capital structure dependent variable. The results showed that there is a negative significant relationship between capital structure and firm performance.

In Sri Lanka, InunJariya (2015) conducted a study to find out the capital structure and its impact on profitability of the Food, Beverage and Tobacco Industry companies listed in the Colombo Stock Exchange for a 5 year-period from 2007 to 2012. He found that capital structure has a negative impact on profitability of listed Food and Beverage Sector companies listed in Sri Lanka. Using panel data analysis in 130 manufacturing company listed on Borsa Istanbul from 2008-2013, Tifow and Sayilir (2015) found that short term debt to total asset has a significant negative relationship with return on asset, earning per share and Tobin's Q ratio. Furthermore, they also found that long term debt to total asset has a significant negative relationship with return to equity, earning per share and Tobin's Q ratio and significantly positively correlated with return on asset. They concluded that firms may prefer equity financing rather than debt financing and long term debt rather than short term debt to enhance profitability of the firm.

Addae, Nyarko-Baasi and Hughes (2013) studied the effects of capital structure on profitability of listed companies in Ghana during a five-year period from 2005 to 2009. The results revealed Ghanaian listed companies relied more on short term debt than long term debt. Their results showed statistically negative relationship between profitability and total debt. A similar study in Salawu (2009) suggested that firms in Nigeria depend on external financing in which a high proportion (60%) of the debt is represented in short-term debt and showed a negative association between the ratio of total debt to total assets and profitability.

Gill, Biger and Mathur (2011) selected 272 American companies listed on the New York Stock Exchange for a period of 3 years from 2005-2007 and, surprisingly; found a positive relationship between short term debt to total assets and profitability in the service industry. They also found

a positive relationship between long term debt to total asset and total debt to total assets towards profitability in the manufacturing industry. Based on a study by Abor (2005) in Ghana Stock Exchange, it was found that profitable firms depend more on debt as their main financing option when an increase in the debt position is associated with an increase in profitability.

RESEARCH METHODOLOGY

3.1 Data collection and sample

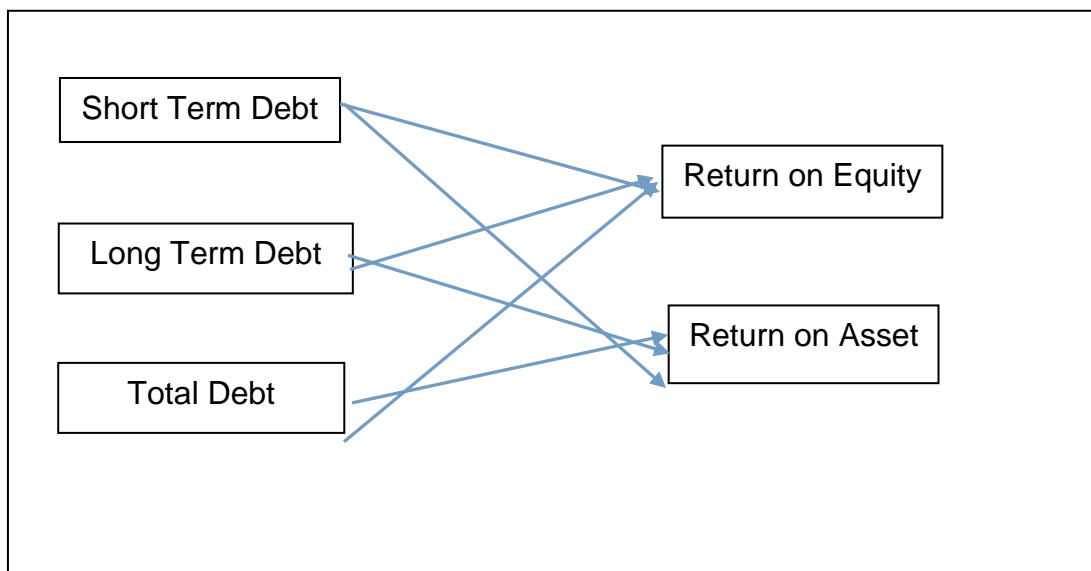
This study collected data from the top 100 listed companies on Bursa Malaysia from 2012 until 2016. The final sample of this study consisted of 80 companies excluding financial companies. To measure firm performance, this study used return on equity (ROE) and return on assets (ROA) as dependent variables. While to measure capital structure, this paper relied on short term debt, long term debt and total debt. In addition, growth rate is used as a moderating variables for the relationship between capital structure and firm performance. The proxies for dependent, independent and moderating variables are as shown in Table I.

Table I: Description of Variables

Variables	Measurement
Dependent variables	
Return of Asset (ROA)	Net income/ Total Assets
Return of Equity (ROE)	Net income/ Total Shareholders' Equity
Independent Variables	
Short-term debt (STD)	Current Liabilities/ Total Assets
Long-term debt (LTD)	Long term Liabilities/ Total Assets
Total debt (TD)	Total Liabilities/ Total Assets
Moderating Variables	
Growth rate (GR)	Changes in Total Assets

The secondary data was obtained from Bloomberg and was transformed into likert scale type following the method developed by Tehrani and Noubary (2005). This paper employed Partial Least Square-Structural Equation Modelling (PLS-SEM) approach which is frequently used in survey based research. Unlike traditional statistical methods that examine only a single relationship at a time, the partial least square equation modeling (PLS-SEM) method enhances the researcher's capability to study a set of interrelated relationships simultaneously. According to Saarani and Shahadan (2013), PLS is not methodologically fixed to survey only and can be used with secondary data. Theoretical framework is shown in Figure 1 which explains the relationship between the dependent variables (return on asset and return on equity) and independent variables (short term debt, long term debt and total debt).

Figure 1: Theoretical framework



The following hypotheses were developed to test the relationship between firm performance (ROA and ROE) and independent variables (STD, LTD and TD) of Malaysia's top 100 listed companies.

- H1a: Short term debt (STD) has significant impact on performance of firm (ROE).*
- H1b: Short term debt (STD) has significant impact on performance of firm (ROA).*
- H2a: Long term debt (LTD) has significant impact on performance of firm (ROE).*
- H2b: Long term debt (LTD) has significant impact on performance of firm (ROA).*
- H3a: Total debt (TD) has significant impact on performance of firm (ROE).*
- H3b: Total debt (TD) has significant impact on performance of firm (ROA).*

DATA ANALYSIS

4.1 PLS Path Estimates: Partial Least Square Algorithm

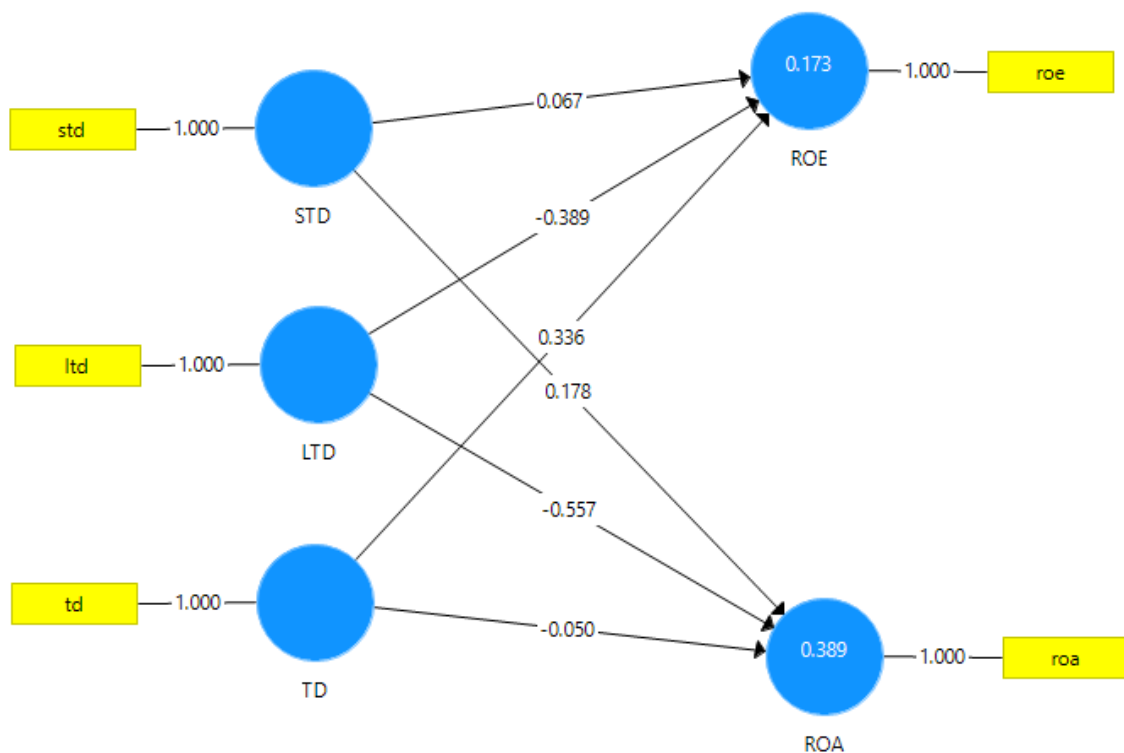


Figure 2: PLS Path Estimates: Partial Least Square Algorithm

Sources: Developed for research

Figure 2 shows the regression model with respect to Return on Equity (ROE) and Return on Asset (ROA) has R square of 17.3% and 38.9% respectively. This indicated the around 18% variation in ROE was influenced by short term debt, long term debt and total debt in 100 listed companies in Malaysia, while 82% may be explained by other variables which were not included in this paper. Furthermore, an approximate 38.9% of ROA was explained by the short term debt, long term debt and total debt.

4.2 PLS Test Hypothesis: Partial Least Square Bootstrapping

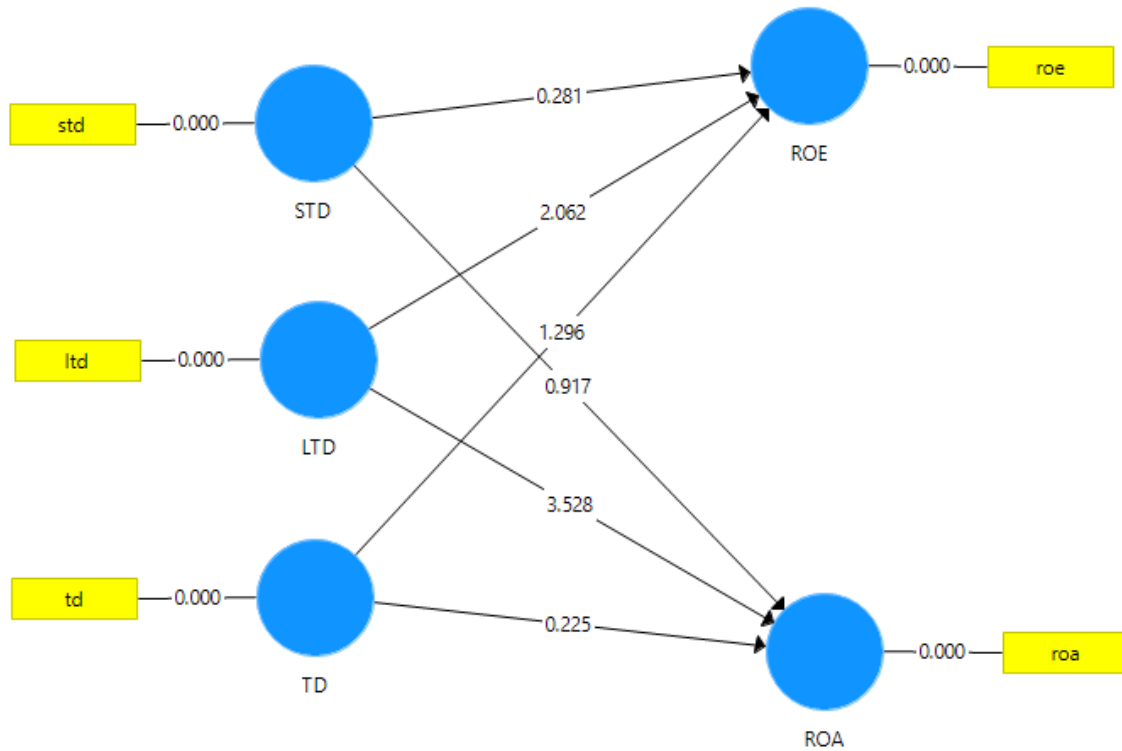


Figure 3: PLS Test Hypothesis: Partial Least Square Bootstrapping

Sources: Developed for research

Figure 3 shows the results from PLS bootstrapping using PLS-SEM 3.0. The research hypotheses were tested at 5% significance level. If t-value is higher than 1.96, null hypotheses will be rejected or else alternative hypotheses should be accepted.

Table 2: Hypotheses testing result

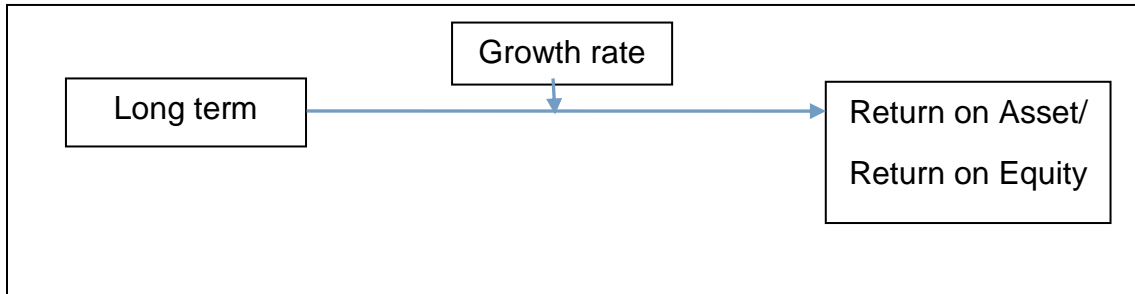
	Null Hypotheses	Coefficient	T-Statistics	P-values	Supported
STD-ROE	H1a	0.067	0.281	0.779	No
STD-ROA	H1b	0.178	0.917	0.360	No
LTD-ROE	H2a	-0.389	2.062	0.040	Yes
LTD-ROA	H2b	-0.557	3.528	0.000	Yes
TD-ROE	H3a	0.336	1.296	0.196	No
TD-ROA	H3b	-0.0050	0.225	0.822	No

The results as shown in Table 2 revealed that short term debt and total debt are insignificant to influence the firm performance as measured by ROE and ROA. Only long term debt (LTD) shows a negative and significant level at 5% with coefficient of -0.389 and -0.557 on ROE and ROA, respectively. This shows that the performance of top listed companies in Malaysia decreases when they depend too much on long term debt financing. The firm wealth to their shareholders declined by 38.9% with a 1% increase in using long term debt. Firm's earnings from the utilization of assets also decreased by 55.7% due to increase in capital financing especially on long term debt. It shows that the more companies rely on long term debt financing, the longer they will be tied to interest payment which results in lowering the company returns. This is consistent with the findings of Cai & Zhang (2006) and Ahmad, Abdullah, & Roslan (2012) that showed long term debt negatively influences firm performance. The results of this study are in line with the pecking order theory where the theory documented that the ability of companies to diversify into new asset

portfolio will reduce with increase in the level of long term debt since they have limited capability to get more debt financing to support the firm growth. In addition, trade-off theory also proved that using long term debt beyond a certain limit would cause bankruptcy risk to increase which affects firm performance.

4.3 Moderating variable: Growth rate

Figure 3: Theoretical Framework with moderating variable



Aggrawal and Zhao (2007) presented the evidence that firm growth influences the relationship between leverage and firm value. They found a negative association between leverage and firm value because firms with higher growth opportunities choose to have lower leverage. The result in Table 2 shows that only long term debt is significant towards firm performance specifically ROA and ROE. Hence this study further extends it by looking at the moderating effect of growth on the relationship between long term debt and return to asset/equity. The following hypothesized research model is proposed

H4a: Growth rate as a moderating variable between independent variable (long term debt) and dependent variable (return to assets).

H4b: Growth rate as a moderating variable between independent variable (long term debt) and dependent variable (return to equity).

Table 3: Hypotheses testing result with moderating effect (Return to assets)

	Null Hypotheses	Coefficient	T-Statistics	P-values	Supported
LTD-ROA	H4a	-0.513	2.831	0.005	Yes
Moderating Effect		-0.167	1.754	0.080	Yes

Table 4: Hypotheses testing result with moderating effect (Return to equity)

	Null Hypotheses	Coefficient	T-Statistics	P-values	Supported
LTD-ROE	H4b	-0.374	1.702	0.089	Yes
Moderating Effect		-0.318	2.851	0.005	Yes

Table 3 and Table 4 shows the result of moderating effect of firm growth between long term debt and return on assets/ equity. The result suggests that growth rate has a negative moderating effect with coefficient of -0.167 and -0.318 significant at 10% and 1% level on relationship between long term debt and ROA/ROE, respectively. Increase of using long term debt causes the burden of long term interest payment to rise. Misuse of funds by managers for unprofitable projects could be controlled hence only valuable projects are selected. Therefore, firm growth opportunities are restricted if the firm is highly dependent on long term debts and it will result in worsening firm performance.

CONCLUSION AND DISCUSSION

This study investigated the impact of capital structure on performance of Malaysia's top 100 listed companies. After excluding financial companies and missing data, the final sample of this study consisted of 80 companies. The results of this study showed that long term debt negatively influences firm performance measured by ROA and ROE. It further tested that moderating effect growth has a significant role in the inverse relationship between long term debt and ROA/ROE. It suggests that top companies in Malaysia preferring to use lower long term debt to increase the firm performance could be due to the burden tied with longer term of interest payment. Undoubtedly, using debt gives companies many advantages especially tax shield (Nguyen and Nguyen, 2015). However, debt also has negative impacts on firm's performance such as high and fixed interest expense that the firm cannot afford to pay. It is suggested that the Malaysian listed companies should have prudent and wise management of total debt to maintain the overall firm performance, and close monitoring on debt to have sustainable competitive market. Companies should tighten the debt by implementing an effective and efficient credit policy to improve the profitability of the firm.

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FACTORS AFFECTING DIRECTORS REMUNERATION DISCLOSURE LEVEL: EVIDENCE FROM MALAYSIAN COMPANIES

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Abstract

Directors' remuneration has been a highlight to financial economists and academics as it is considered as a remedy to curb agency problems. The issue arises between directors and shareholders on whether the remuneration is intended to maximise shareholder' wealth or to favor the directors who operate the business on behalf of the investors. This issue can never be fully discovered if there is no transparency in the disclosure of remuneration. The purpose of this study is to investigate the determinants of directors' remuneration disclosure in the annual report among FTSE Bursa Malaysia KLCI Index companies in Malaysia. This study proposes using disclosure scoring index, a methodology derived from content analysis to evaluate the level of remuneration presented in the annual reports. Overall this study contributes to the board diversity knowledge area as it examines board demographic diversity, an issue of recent active policy which makes it even more vital to apprehend the role it plays in decision making. This study further extends the literature on disclosure by scrutinizing the relationship between directors' remuneration disclosure and board diversity. Besides, this study embarks on researching a new and broader aspect of board diversity that includes ethnicity, and gender that serves as a moderator. Such a study in the Malaysian setting would be particularly interesting, given its unique multicultural environment that will provide an interesting platform to investigate the determinants of director's remuneration disclosure.

Keywords: Corporate Governance, director remuneration, board structure, ethnicity.

INTRODUCTION

The numbers of corporate collapses after the Asian financial crisis in 1997 has led the Asian countries to call for enhanced transparency including Malaysia. Many economists have pointed to the malfunctioning of the corporate governance mechanism as one of the major factors responsible for causing the situation. Malaysia, being one of the most affected countries upon the crisis had experienced a big decline in the total market thus, Malaysia has strengthened its corporate governance with the first introduction of Malaysian Code on Corporate Governance (MCCG) in 2000 to recover the market condition by focusing on the transparency in the corporate sector followed by MCCG 2007, 2012 and 2017. With the recent MCCG 2017 which lay out best practices to strengthen transparency is the result of a comprehensive assessment by the SC. However, after the issuance of MCCG 2017, SC reported that the Malaysian equity market capitalisation contracted by 10.8% from RM1.9 trillion in 2017 to RM1.7 trillion in 2018.

1.1 Research Problem

While the Malaysian setting has been explored in some earlier studies on the corporate governance reporting practices, transparency of directors' remuneration has received less attention (Sengupta and Zhang, 2015). Hence, this study focuses on disclosure of directors' remuneration in the annual report, given that it attracts a great deal of attention from the practitioners and academics due to its strategic role as a remedy of the agency problem (Arye et al., 2003). The conflict between directors and shareholders for all firms is whether the remuneration is designed to maximise shareholders' value or to favour directors, who run the company on behalf of the investors. However, the conflicts can never be detected when the

disclosure of remuneration is not transparent in a country where disclosure environment is less rich like Malaysia that could lead to the agency problem.

Large number of literature highlights the need to consider specific legal and institutional setting explicitly in analysing the effect of CG on disclosure (Akhma, 2018; Melis, Gaia and Carta, 2015; Rodríguez Bolívar, Alcaide Muñoz and López Hernández, 2013; García-Meca and Sánchez-Ballesta, 2010; Hope, 2003). This is because the differences in the legal and institutional setting in respective countries had played a major role in shaping the disclosure practices. Although Malaysia is considered as a developing market, results from prior research on developing countries may not necessarily apply to its reporting environment mainly due to the cultural factors that have varieties in terms of its disclosing behaviour.

1.2 Research objectives

Based on the research problem mentioned above this thesis aim:

1. To investigate the relationship between board structure and the level of directors' remuneration disclosure.
2. To investigate the relationship between ownership structure and the level of directors' remuneration disclosure.
3. To investigate the relationship between board diversity and the level of directors' remuneration disclosure.
4. To examine gender as the moderator to the relationship between board independence and the level of director' remuneration disclosure.

1.3 Research questions

Based on the research objectives explained above, this thesis investigates the determinants of directors' remuneration disclosure in the annual report among FTSE Bursa Malaysia KLCI Index companies in Malaysia. The research questions are as follows:

1. Is there any significant relationship between board structure and the level of directors' remuneration disclosure?
2. Is there any significant relationship between ownership structure and the level of directors' remuneration disclosure?
3. Is there any significant relationship between board diversity and the level of directors' remuneration disclosure?
4. Is there any significant gender moderating effect on the relationship between board independence and the level of directors' remuneration disclosure?

1.4 Research contributions

First, the previous study on directors' remuneration disclosure in Malaysia referred to MCCG 2000 to derive to the directors' remuneration disclosure index. However, this study includes the latest update on CG code, i.e. MCCG 2012 and 2017.

Second, this study extends, as well as contributes to, the extant CG literature by showing whether the traditional dominance of government and family are still present in determining the extent of directors' remuneration disclosure, in sampling period from 2016 to 2020 (Pre and post General Election 14).

Third, unlike previous studies that examine the link between board diversity and financial performance, this study explores the link between board diversity and disclosure. The diversity of board members in a multi-ethnic society like Malaysia that includes the traditional strength of a culture of secrecy who prefers confidentiality about the business only to those who are closely involved with the management requires an empirical explanation to prove the importance of diversity among Malaysian directors and their disclosure behaviour.

Forth, this study also assists policymakers in assessing the effectiveness of existing board composition in influencing disclosure. Malaysia is the first Asian country that announced the gender policy in 2004 under the Ministry of Women, Family and Community Development established via the amendment of Article 8(2) Federal Constitution in 2001; thus the results of this study will benefit the policymakers in reviewing the existing and future policy to deliver diversity in every level of a firm.

Fifth, this study contributes to knowledge areas in the board diversity literature as it investigates board demographic diversity, a subject of current active policy which makes it even more crucial

to understand the role it plays in decision making. This study further deepens the literature on disclosure by examining the relationship between directors' remuneration disclosure and board diversity (Samaha, Khlif and Hussainey, 2015). Additionally, this study embarks on researching a new and broader dimension of board diversity that includes ethnicity, and gender that serves as a moderator. This is particularly important in a multi-cultural country like Malaysia where the distinctions between ethnics are institutionalized up to the extent of being legalised.

LITERATURE REVIEW

2.1 Board & Ownership Structure

Researchers increasingly realize that there is no single agency model that adequately depicts corporate governance (CG) in any national contexts, including both the developed and developing countries. Supported by García-Meca and Sánchez-Ballesta (2010), the results of the meta-analysis highlight the need to consider the specific legal and institutional setting explicitly in analysing the effect of CG on disclosure. Unlike the developed countries, research in CG is not a well-debated topic in developing countries until in the past few years (Arora and Sharma, 2016). Even so, studies linking CG and corporate social disclosure in the emerging countries had no doubt received more attention compared to specific directors' remuneration disclosure (Sengupta and Zhang, 2015). Therefore, this study contributes to the debate on whether CG practices in Malaysia leads to better disclosure of directors' remuneration, being the best remedy to agency problem, as widely agreed by the previous scholars (Arye et al., 2003).

Prior research that linked CG and disclosure studies in Malaysia has shown an improving, positive and significant association over time. For instance, earlier studies by Haniffa and Cooke (2005) and Mohd Ghazali and Weetman (2006) found that board of directors play a limited role in influencing corporate social disclosure for a sample period of 2002 and 2001, respectively. On the other hand, recent studies by Ho and Taylor (2013) encountered that the relationship between CG structure and firms' disclosure is strengthened for a sample in 2001 and 2006. While the former findings suggest that it might have been too close to expect changes in the CG implementation after one or two years gap from the introduction of MCCG 2000 in Malaysia, the latter findings demonstrate that the enhancement of CG structure appears to lead higher disclosure after several years in applying the regulation. Hence, this study selects 2016 to 2020 to review directors' remuneration disclosure, considering the effective date of its specific regulation as required by the mandatory Malaysian Financial Reporting Standard (MFRS).

Secondly, the sample covers a different period that includes significant events such as the 14th Malaysian general election in 2018 which yields an unpredicted result of the government that lost its majority for the first time after 60 years of ruling. Thirdly, this study embarks on investigating the relationship between some of the CG elements as suggested by the current CG literature. The justification is supported by the Malaysian context, which has high ownership concentration that the power of controlling shareholders might hinder the effectiveness of CG implementation once it surpasses the 'changeover' point. Thus, this study complements the previous research using current updates in Malaysia.

Considering that efficient CG is an important mechanism for the firms to make decision in disclosing the level of directors' remuneration, this study proposes to establish which factors of its internal CG element influence the decision making process. Thus, the first motivation rests on the board structure, with regards to the proportion of independent directors, the duality of CEO/Chairman and the board size. Likewise, the second motivation of this study focuses on the manner which shares are distributed, whether they are held by the government, family or foreign shareholders. Both corporate governance measures will be analysed on its effect on directors' remuneration disclosure.

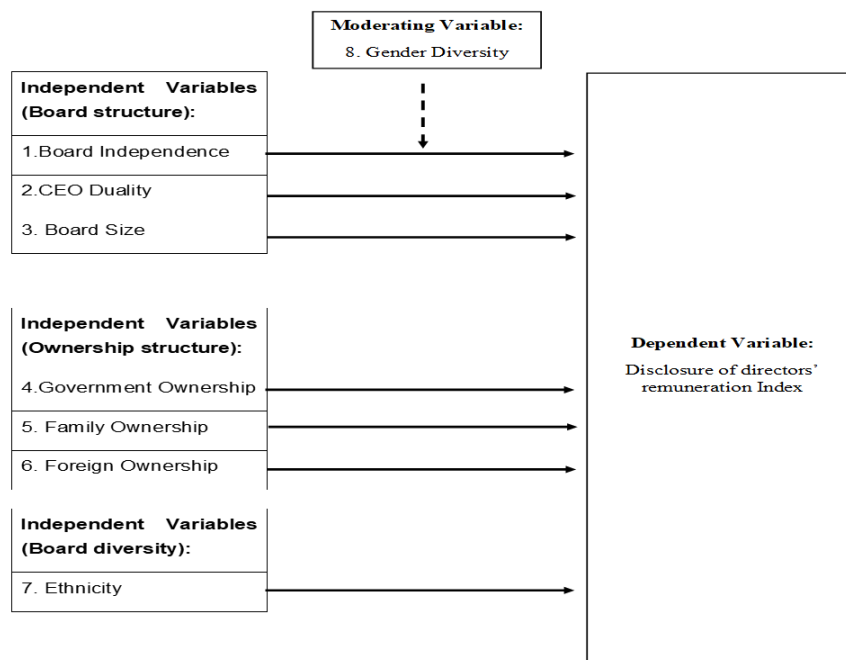
2.2 Board diversity (demographic characteristics)

Recent studies has found a significant positive effect of diversity on various type of disclosure such as corporate social disclosure, specific disclosure on black economic empowerment as well as greenhouse gas (GHG) disclosure in the annual report (Liao, Luo and Tang, 2015). Despite the evolving research explaining the relationship between board diversity and disclosure, the relevant empirical investigations to date have not explored disclosure on directors' remuneration, being one of the key elements of corporate governance. Therefore, the objective of this study is to examine how managerial attributes, known as board demographic diversity influence firms' strategic disclosure of directors' remuneration. Furthermore, this study examines theoretically and

empirically, the relationship between board diversity and directors' remuneration disclosure in the context of emerging markets.

Malaysia is of interest not only because it is an emerging country with the developed capital market but because it has a divergence in culture as a result of the ethnic polarization. Indeed, there were riots involving the Malay (a majority ethnic in Malaysia) against the Chinese ethnic group in 1969 which led to the affirmative action by the government, called as New Economic Policy (NEP) with the intention to eliminate the identification of race with economic function. The NEP continues to be a successful tool that balances the involvement of each ethnicity in the economic activities, but it has resulted in unintended consequences of institutionalized positive discrimination towards Malay by offering them various concessions. In view that the ethnic discrimination has been historically embedded in the society, there is a fundamental basis to assume that the multi-racial ethnicity affects its social disclosure practices. Haniffa and Cooke (2005) support this assumption with a significant impact of Malay directors towards corporate social disclosure, proving that disclosure is not culture free. Hence, this study believes that culture affects one's upbringing that shapes his character and decision-making process.

CONCEPTUAL FRAMEWORK



3.1 Hypothesis Development

3.1.1 Proportion of independent directors

Boards of directors comprise individuals drawn from top management and others from outside the firm, which the latter is known as independent directors. Independent directors or outside directors are placed to monitor management in view that they are not officers working in the firm on a daily basis (Donnelly and Mulcahy, 2008). Therefore, it is widely accepted that a board with a higher proportion of independent directors can exercise monitoring of management more effectively which is consistent with the agency theory. Therefore, it is hypothesized that according to agency theory:

Hypothesis 1: There is positive relationship between the extent of directors' remuneration disclosure and the proportion of independent directors

3.1.2 CEO/Chairman duality

Separation of the positions facilitates the division of responsibilities between them, where CEO should focus on the daily business operation while chairman would concentrate on leading the oversight of the management. The separation also benefits in minimizing the possible abuse of CEO power (Donnelly and Mulcahy, 2008) and reducing the threat of poor disclosure (Forker,

1992). Bassett, Koh and Tutticci (2007) prove that firms with a CEO who is concurrently chairperson of the board have lower levels of compliance with the mandatory disclosure of ESO in Australia. Furthermore, Chau and Gray (2010) assert that separation of CEO/chairman post resulted to a positive and significant disclosure of all type of disclosure (i.e. strategic, financial and non-financial) among listed firms in Hong Kong. Nevertheless, many studies show that the relationship between CEO/Chairman duality and voluntary disclosure seems to be questionable. Therefore, it is hypothesized that according to agency theory:

Hypothesis 2: There is positive relationship between the extent of directors' remuneration disclosure and the separation of CEO/chairman duality role

3.1.3 Board size

Board size represents the total number of executive and non-executive directors on board at the date of the annual meeting in each fiscal year. Some studies found a positive link between board size and voluntary disclosure. This is consistent with the notion that says larger boards give more benefits in terms of expertise and resources available to the organization. Esa and Mohd-Ghazali (2012) noticed a significant and positive link between board size and CSR disclosure in Malaysia for both years in 2005 and 2007. The result supports signalling theory that larger boards provide better monitoring by sending a signal on their cohesiveness in terms of more disclosure to the minority shareholders and stakeholders. Therefore, this study formulates a positive hypothesis as below:

Hypothesis 3: There is a positive relationship between the extent of directors' remuneration disclosure and the board size

3.1.4 Government ownership

An earlier study on ownership and disclosure by Eng and Mak (2003) evidenced significant relationship between government ownership with increased in disclosure. In line with that, it is also noted that Chinese cross-listed state-owned (SOEs) disclose more information voluntarily with the expectation that higher disclosure may reflect the interest in developing a good reputation to get more capital in future listings. Concerning directors' remuneration transparency, Chizema (2008) observed a similar significantly positive association with state ownership firms implying that those firms should be exemplary in discharging their monitoring role. GLC are defined as companies that have the primary commercial objective which the major ownership and direct controlling stake are by the government. In view that it is a national agenda, this study expects a positive relationship between government ownership and directors' remuneration policy, supporting agency theory that caters monitoring role by the government. Therefore, this study formulates a positive hypothesis as below:

Hypothesis 4: There is positive relationship between the extent of directors' remuneration disclosure and the government ownership of companies (GLCs)

3.1.5 Family ownership

In the case of family firms, this study argues that family firms will provide more disclosure on directors' remuneration in justifying the amount received by family directors. Furthermore, family-owned firms in Malaysia need to signal transparency to other stakeholders as well as the minority shareholders on their activities of managing the company to gain their continuous support. In view that specific requirement of individual remuneration disclosure and pay for performance link are voluntary required under the CG code, this study expects that director is more inclined to signal the transparency by disclosing their remuneration as compared to other mandatory and straightforward information such as financial-related figures. Additionally, directors in family-owned companies disclose more on remuneration to get financial support from the creditors. Hence, consistent with signalling theory this study expects that:

Hypothesis 5: There is positive relationship between the extent of directors' remuneration disclosure and family ownership

3.1.6 Foreign ownership

Foreign ownership indicates that financial statement users could rely more on the annual report to access corporate information if a company has a higher percentage of foreign ownership. In line with that, Firth, Fung and Rui (2007) found that companies with foreign shareholders have higher earnings information, providing some evidence that the foreign shareholders put pressure

on companies to improve the quality of accounting information. Apart from that, foreign shareholders also play a significant role in monitoring management when Xiao, Yang and Chow (2004) noticed that foreign ownership encourages the disclosure of company's information through the internet/website. In view that foreign-owned company is not a majority among FTSE Bursa Malaysia KLCI Index, this study expects that the existence of foreign shares in a company influence for a better disclosure particularly on directors' remuneration to signal the firm's reputation and their virtuous, ethical practices to attract more foreign investors and minority shareholders. Therefore, it is hypothesized that:

Hypothesis 6: There is positive relationship between the extent of directors' remuneration disclosure and foreign ownership

3.1.7 Culture/Ethnicity

Culture has been recognized as a significant part of human behaviour for many years. Originating from Hofstede's model of culture, Gray (1988) has extended the societal value to develop a specific accounting value systems that could measure accountants' attitude. Gray identified four accounting values which one of it is 'secrecy', which have been statistically proven by previous scholars. Secrecy is a preference for confidentiality about the business only to those who are closely involved with the management, as opposed to a more transparent accountable approach. Since most prior studies found that firms dominated by Malay directors disclose more information (Wan-Hussin, 2009), Malay directors are considered as more transparent as a result of the Islamic business ethics. Chinese, on the other hand, is less transparent due to their family-oriented minded which derived from highly individualistic personality. Using UE theory to understand directors' demographic culture, the hypothesis is constructed as below:

Hypothesis 7: There is negative relationship between the extent of directors' remuneration disclosure and the proportion of board dominated by non-Malay

3.1.8 Gender

García, Gago and Nieto (2018) study revealed that a higher percentage of women in boardrooms and in groups of independent directors imply better CSR disclosure. Furthermore, Lu (2016) found significant proof that women present different skills and interests on corporate boards. Her results suggest that the greater the percentage of female directors, the better the firm's environmental performance. Hence it is believed that women mostly reject unethical business behaviours and activities. In other words, woman directors would advocate for responsible corporate practises such as remuneration disclosure. After reviewing prior literatures, it was found that studies relating to gender that serves as a moderator between the relationship between board independence and directors remuneration disclosure are rather limited despite understanding the importance of gender diversity on board. In view of the significant role of gender diversity on board the eighth hypothesis is:

Hypothesis 8: Gender moderates the relationship between board independence and the extent of directors' remuneration disclosure.

RESEARCH METHODOLOGY

This study employs content analysis, a disclosure research method that codifies the text or content of a piece of writing into various groups or categories, depending on certain criteria and quantifies the scales to permit further analysis. This is consistent with a definition by Krippendorff (1989, p.403) who defines content analysis as a research technique for making replicable and valid inferences from data to their context. For the purpose of this study, data collection for the remuneration related information is manually extracted from companies' annual reports among FTSE Bursa Malaysia KLCI Index companies in Malaysia through systematic sampling. The FTSE Bursa Malaysia KLCI Index, is a capitalisation-weighted stock market index, composed of the 30 largest companies on the Bursa Malaysia by market capitalisation that meet the eligibility requirements of the FTSE Bursa Malaysia KLCI Index Ground Rules. These information are available online in the Bursa Malaysia's website as well as from the companies' website. Moreover, the annual report is the main source used in this study because it is generally considered as the key information base for investors in making a decision and it mirrors a company's overall attitude towards public disclosure.

4.1 Research sample

The sample source of data for this study comprises the companies listed on FTSE Bursa Malaysia KLCI Index during the period from 2016 to 2020. The index is used because it represents the largest 30 companies by market capitalization listed on the Bursa Malaysia Main Market stock exchange that pass the relevant investment screens.

The decision to focus on the largest 30 companies was driven by five (5) factors. Firstly, data for the top 30 companies are readily available in the Bloomberg and Datastream database throughout the five (5) years period. Second, it is believed that the top 30 companies data is more reliable in view that 87 percent of them are audited by the Big 4 companies, and it is more likely represent the best corporate governance practice practices in Malaysia. Thirdly, the stock data for the top 30 companies are believed to be more liquid and updated since the indices are completely captured by the Bloomberg terminal. This argument supports Qu and Leung (2006) who highlighted that top company are more likely to attract the attention of investors who are interested and rely upon the quality of corporate disclosure in making the investment decision.

CONCLUSION AND DISCUSSION

This study examines the factors affecting directors' remuneration disclosure level practices and amount paid to individual directors using the top 30 companies in Malaysia using sampling period from 2016 to 2020 (Pre and post General Election 14). This period is significant to this study due to an important event that had taken place in Malaysia, i.e. changes in the political atmosphere in 2018 and implementation of MCCG 2017. This study contributes to the significance of disclosing directors' remuneration in a country where the disclosure practice is still beneath the CG best practice. By using Malaysia's top 30 companies, this study is different from other developing countries because Malaysia has a disclosure practise that is underneath best practice as well as the unique Malaysian cultural environment. Hence, the uncommon combination of politics (GLCs) conquered by Malays and business conquered by the minority Chinese provides an exciting background to discover the determinants of directors' remuneration disclosure.

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FINANCIAL RATIOS AND PREDICTABILITY OF STOCK RETURNS

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Abstract

The Malaysia stock market has more than 900 listed companies and is a fast growing market in Asia. Besides providing capital for companies, the stock market also reflects the financial health of the country. While there has been an outflow of foreign investment from the stock market since the introduction of the new government in 2018, recent indications show a turnaround in arresting the decline. To sustain this turnaround, it is pertinent that investors have confidence in the market as confidence helps to attract foreign investment and liquidity to the market. Studies show that investor sentiment is an important component to a healthy stock market. To sustain investor confidence it is vital to provide some degree of predictability in the stock market. For some investors analysing the financial ratios is essential to provide fundamental analysis of the stocks and predictability of the returns. However with regard to the stock return predictability, various theories have postulated conflicting views on whether predictability of stock returns is possible, with or without the aid of analysis. Empirical evidence on predictability has also been mixed. Furthermore, research to date on the Malaysia stock market has been limited, as much focus has been on the developed economies. This study explores the literature on the various theories on predictability of stock returns. By doing this, the study aims to contribute to the literature on the usefulness of financial ratios in the predictability of stock returns in the Malaysia market.

Keywords: financial ratios, fundamental analysis, stock return, stock market

INTRODUCTION

The Stock Market

Growing rapidly over the last few years, the Malaysia stock market plays an important role in the country's economic development. Through the stock market, funds are mobilised into various economic activities providing investors with liquidity and also encouraging the setting up of big businesses. By raising funds through the issue of shares to the public, businesses are able to expand their operations and create job opportunities in the process. From a national perspective, unemployment levels are lowered and governments are able to earn more revenue from increased taxes. According to statistics from Bursa Malaysia Berhad, the total market capitalization for Malaysia stood at RM1.70 trillion in 2018. Besides providing capital for companies, the equity market also reflects the financial health of the country. As an emerging market, the equity market of Malaysia is one of the fastest growing in Asia with more than 900 listed public companies. For the investor, an obvious strategy would be to seek out those shares with growth rates likely to exceed the overall market growth. A strategy may include fundamental analysis which allows for an in-depth analysis to forecast future prices and developments in the equity market. Fundamental analysis can comprise various aspects covering the analysis of the economy as a whole, of the industry, or that of the individual company. With fundamental analysis, a combination of financial data in the form of financial ratios can be used to assess the current value of stocks in order to determine whether the share prices are over or undervalued, and to allow for future stock prices to be predicted based on the information in the financial statements.

Compared to investing in properties, stocks are more attractive as they tend to provide higher returns over a shorter period of time. Stocks can be sold in a matter of hours or minutes from the time they were bought. Properties, on the other hand, would require weeks, months, or years

before they can be disposed of to realise profits. This makes investing in stocks more liquid than properties. Additionally, as stocks require substantially less capital than properties, this makes it easier to diversify a portfolio of stocks than a portfolio of real estate.

Objective of Financial Reporting

The primary objective of a financial report is to provide information to users so that they can make decisions. The International Accounting Standard Board (IASB) states that the objective of financial reporting is "to provide information about the financial position, performance and changes in financial position of an enterprise that is useful to a wide range of users in making economic decisions." Norby and Stone (1972) stated that the role of financial statements is to provide information on various components such as equity and operations of the company, assets and liabilities. Norby and Stone (1972) emphasised that financial statements are not meant to reflect the market value of the company. The market value of a company is a subjective concept which is borne partly from the forces of the marketplace, accounting information and other various factors such as interest rates, sources of investment funds, industry position, and capability of the company's management. Though the market value is outside the scope of financial statements, it is still nevertheless the mission of the investor to assess and make comparisons of companies by drawing out relevant evaluations and analysis. As such the financial statements need to be clear and comprehensive to be effective for this purpose. Finally, financial statements should be clear of abstract concepts, which though may contribute to accounting theories but would not be useful to the users who are non-accountants.

Role of Financial Information in Investment Valuation

Stocks of companies having strong fundamentals for continued growth are considered good investments. On the other hand, companies with weak cash flow, heavy debts, declining revenue or high management turnover are signs of serious issues. As there are many companies to choose from, it makes sense to take the time to research by looking at a company's history, to pick solid stocks and to avoid poor ones. Research helps to predict the growth or decline in the share prices as the company fundamentals are evaluated, guiding the investor on his investment decision making. To assess the value of a company, the comparative approach is generally used to analyse the company's financial information. The value is then compared to values of other companies and the investor makes his investment decisions based on this comparison. The end result is that capital is allocated among businesses in an efficient manner. While the investor can access information from government statistics, economic reports, trade publications, and securities market information, the financial statements remain the ultimate source of information.

Financial Statements and Prediction

Using financial statements as a base for determining the future performance of a company, it can be implied that the objective of financial accounting is for prediction. In this regards, the financial statements would be in the same category of any other information that is used for decision making, such as a personnel report to predict an employee's performance, or a report on computer downtime to predict future downtime. The objective of both reports would be to reduce the error of margin in making decisions for the future. The current status and past trends become the starting point for predictions of future performance (Norby & Stone, 1972). As stock returns include dividend payments and price change, the rate of return would provide a good indication of future earnings. The decision to buy, sell or hold would then depend on the expected future rate of return, easing investment decision making.

However, not everyone accepts that information from financial statements have predictive power of a share's future return and the reasoning could stem from the efficient market hypothesis. Essentially, the hypothesis suggests that the market is efficient at reflecting the true value of the stock price making it not possible to predict future prices. The hypothesis comes in three forms, though it is still a matter of debate which of the three forms, if any, is correct. The three forms comprise of the weak, the semi-strong and the strong form of efficiency. In the weak form efficient market, all past public information is reflected in market prices and no one can profit from the stock market by looking at past price trends and patterns. In the semi-strong form efficient market, all past and current publicly available information is reflected in the market prices and if the investor uses information in public domain for prediction, he will be unsuccessful. In the strong form efficient market, no one can profit from predicting the market, not even from insider information (E. F. Fama, 1970).

If prediction of the stock market is the goal of the investor, then it would be hoped that the weak form of the Efficient Market Hypothesis applies. according to Kok and Goh (1995) the weak form of efficient market hypothesis applies to the Malaysian stock market.

The Analysis Approach

Investment analysis usually starts with a review of the company's history in terms of its operations and financial position, its products and the markets it operates in. This information is then compared against the industry and consequently the economy to determine the changing relationship between the company and its environment. Upon collection and processing of relevant information, the investor can draw conclusions on the capabilities of the company. The investor then develops forecasts about the company's future earnings which may cover one to five years. From the general and approaching the specifics, the investor analyses the prospect of the economy and then the industry to see how these relate to the company. Impact from events such as new markets and investments, technology, changes in government regulations and others are analysed and measured against the company's financial statements. Forecasts then follow with estimates prepared for future earnings, dividends and other financial needs. While the margin of error in the prepared forecasts may be sizeable due to a dynamic economy, these forecasts will still prove useful for investors to base their investment decisions on (Norby & Stone, 1972). Essentially the investor seeks to invest his funds in shares which would give the highest returns, comprising of dividends and increase in price, while accounting for risks. Taking on a comparative approach, investment analysis allows for comparisons between companies in the same or different industries, or over different periods. The comparison allows for evaluations to be related to the prevailing share price so that recommendations can be made. Finally the investment analysis completes with a selection of an investment (Norby & Stone, 1972).

Concept of Financial Ratios and Analysis

Financial ratios measure the relationship between two values in the financial statements. The ratios are used to evaluate the overall performance of a company covering profitability, liquidity and efficiency aspects. Ratios can also be used to ascertain the growth or decline of a company by making comparisons of the ratios over time. There are many financial ratios and they can be grouped into different categories. Different users of financial information will find certain ratios more important than others. In making their investment decisions, the investor would require financial information that would assist in evaluating and forecasting profitability, growth, cash flow and dividends so that future share returns can be forecasted (Arkan, 2016). A major advantage of financial ratios is that comparisons of performances between different size companies can be made. This allows investors to evaluate whether an investment or potential investment would be attractive. Many textbooks on accounting and finance devote chapters to analysis of financial statements through financial ratios. This demonstrates the importance of financial ratios in financial analysis used for decision making (Chen & Shimerda, 2012).

LITERATURE REVIEW

The forces of supply and demand determine stock prices in the marketplace. Should an investor be able to accurately predict market movements, the profits to be made are handsome. Unfortunately, there is no definite formula to show how a stock price behaves. Academic research in stock prediction in Malaysia using financial ratios however, is still at its inceptive stage (Kheradyar, Ibrahim, & Nor, 2011). In general, the stock markets are volatile due to changing macroeconomic variables, government regulations, and investor confidence, amongst others. However research is important to allow the investor to have insights over market movements and to aid the investor in achieving his objectives. The main theories on the predictability of stock prices are the random walk hypothesis and the efficient market hypothesis. Both theories posit that stock prices cannot be predicted and thus, any attempt to outperform the market is futile. Acknowledging the opposing arguments put forth by the business and academic community, Fama (1965) has succinctly summed the crux of the controversy as "...to what extent can the past history of a common stock's price be used to make meaningful predictions concerning the future price of the stock". Despite this however, researchers continue to investigate the predictability of stock prices.

Theoretical Considerations

The ability to predict stock market returns has become an elusive goal with considerable literature on stock market predictability developing over the last twenty years. Predictive variables being interpreted in favour of stock market predictability, while other studies interpret the returns as

evidence of market inefficiency (Aras & Yilmaz, 2008). Theories underpinning the literature on stock predictability are ironically based on the concept that stock returns cannot be predicted. These theories are the Random Walk Hypothesis and the Efficient Market Hypothesis.

Random Walk Hypothesis

The random walk hypothesis, popularised by (Malkiel, 1999) sets out the most adverse view of the predictability of the stock market. The theory states that changes in stock prices are essentially random, implying that any attempt to predict the stock market is futile. A notable study done by Lo and MacKinlay (1988) has proved the random walk hypothesis wrong. In line with the hypothesis, a number of well-known studies on efficient markets have established that past prices could not be used to predict future prices. Kendall and Hill (1953) investigated the prices US stock from 1928 to 1938 and observed that random changes were so large as to rule out any systematic effects on price changes. Their analysis showed little serial correlation within series of price changes and little lag correlation between series and concluded there was no hope of predicting stock movements without extraneous information. Osborne (1962) studied the internal properties of stock prices in order to see how the general properties of Brownian motion applied and concluded that price movements follow the random walk. According to the Merriam Webster Dictionary the Brownian motion, also known as the Brownian movement, is the “random movement of microscopic particles suspended in liquids or gases resulting from the impact of molecules of the surrounding medium”. Roberts (1959) recognised the role of chance variation in weekly changes of the Dow Jones Industrial index in 1956 and concluded that changes behave as if they had been generated by a simple chance model. Fama (1965) examined 30 stocks from the Dow Jones Industrial Average from 1957 to 1962 and concluded that successive price changes were independent as assumed under the random walk model and that this independence is consistent with an efficient market, where actual prices represent a good estimate of the intrinsic value, given the available information. However earlier studies had refuted the random walk hypothesis. Cowles and Jones (1937) found evidence against the random walk, and at the time such evidence was dismissed as statistical anomalies. In a subsequent study by Cowles (1960) similar evidence was again dismissed as it was not interpreted as economically meaningful after considering transaction costs.

Efficient Market Hypothesis

The efficient market hypothesis is one of the widely discussed topics and has received a lot of attention in the field of finance. The theory has a long history and has resulted in disagreements between academics and practitioners. Studies either support or challenge the efficient market hypothesis. Essentially, the Efficient Market Hypothesis proposes that the market is efficient at reflecting the true value of the stock price. In an efficient market, competition among participants will result in the effects of new information being reflected immediately in the actual share prices. As there may be uncertainty surrounding the new information, the immediate effect from the information has implications. First, the actual price will either over-adjust or under-adjust to changes in the intrinsic values. Second, there will be a lag before the adjustment is completed in the actual price before matching its intrinsic value. This adjustment lag is itself an independent and random variable, with sometimes, the adjusted actual price coming before or after the event which forms the basis for the change in the intrinsic value. In the event that the price adjustment precedes the actual event, this is where the event is anticipated by the market before it actually happens (Fama, 1995).

Malaysia Stock Market and Weak Form Market Efficiency

Despite the efficient market hypothesis, not all markets are entirely efficient. One of the three forms of efficient market hypothesis is the weak form efficiency which claims that past price data do not affect stock prices. In an inefficient market the prices of stocks do not reflect its true value. These variations present opportunities for investment strategies to outperform the market in the long run. Generally studies show that the Malaysia is weak form inefficient. This presents opportunities for investors to take advantage of the inefficiency. Worthington and Higgs (2006) examined ten emerging markets in Asia for weak form market efficiency. Malaysia was one of the markets examined and data was observed from 1987 to 2003. Results indicated that the Malaysian market is weak form inefficient. Kim and Shamsuddin (2008) examined the market efficiency of nine Asian stock markets, of which Malaysia was included, using stock price indices from 1990 to 2005. Market efficiency implies that relevant information is transmitted quickly and depends on the level of development of the stock market. Their findings show that Malaysia stock market was inefficient even though measures to liberalise the financial market have been implemented. Similarly Hamid, Suleman, Shah and Akash (2010) tested the weak form efficiency

of fourteen markets in the Asian-Pacific region, of which Malaysia was one, from 2004 to 2009. Their study found that the market in Malaysia was weak form inefficient and that investors would be able to make profits from the inefficiencies. Kok and Munir (2015) examined weak form efficiency of the finance sector in the Malaysia stock market using data from 1997 to 2014. Overall findings indicated that the finance sector was weak form efficient. The study explained efficient stocks would be attractive to long term investors providing precise price indications, an important factor for investment decision making. Being weak form efficient, the enhanced role of the finance sector would help to stimulate the country's economic growth.

Evidence of Financial Statements as Predictors of Earnings

There are numerous studies providing evidence of financial ratios as predictors of earnings, showing that accounting information can be used to determine a firm's value, making financial statements useful in forecasting the stock returns (Aftab & Naseer, 2016). As early as 1968, financial statements have been shown to be useful as predictors of stock returns. In their study, Brown and Niederhoffer (1968) demonstrated this using data of 519 firms on the US stock market from 1947 to 1965. Brown and Niederhoffer (1968) studied the predictive strength of interim reports and found that they were useful in predicting annual earnings and were superior to annual earnings reports. Consistent with a study by Ball and Brown (1968), Brown and Niederhoffer (1968) concluded that the anticipatory strength of the market increases with each interim report as the announcement date of the annual report approaches. Other researchers use financial information for evaluating stocks. Abarbanell and Bushee (1998) found that financial information gave indications of future returns that is associated with future earnings announcements, with a significant portion of the abnormal returns being generated after earnings announcements are made. Lev and Thiagarajan (1993) identified drivers of stock value as consisting of earnings, risk, growth and competitiveness. Lev and Thiagarajan (1993) estimated the incremental value of a set of financial variables over earnings. Their results showed that for the 1980s financial variables added approximately 70% predictive power to earnings. The predictive power is enhanced when combined with macroeconomic variables, giving the example of accounts receivable and provision for doubtful debts signals in a period of high inflation.

Current state of research

Research on prediction of stock prices has been mainly focused on the developed stock market in the US. Research in emerging markets is lacking and so the predictive power of financial ratios in this region is still not robust (Kheradyar et al., 2011; Wijesundera, Weerasinghe, Krishna, Gunawardena, & Peiris, 2015). Shittu, Masud and Alkali (2016) caution that stock market predictability is still a broad subject and so the empirical evidence must be viewed with care. Additionally, the literature on predictability of stock returns is large covering many varieties of proposed testing procedures leading to different conclusions on predictability of stock returns.

Evidence in Non-US markets

Studies conducted on the US market have raised awareness for studies of financial ratios in relation to share prices in other parts of the world as evidenced by studies in various countries. According to the efficient market hypothesis prices fully and immediately reflect all available information so no one can make abnormal profits based on that information. While early empirical work supported the above hypothesis, recent studies in stock price behaviour show deviations (Kofarbai, Zubairu, & Zubairu, 2016). With respect to emerging markets, most stock prices do not reflect the intrinsic values, with prices being overvalued or undervalued. The difference can be traced to factors such as the availability of information, the speculative nature of the market, incomplete disclosure and the firms' inconsistent performances and manipulation. Erroneous evaluation of stocks by investors is also a factor in the difference (Aftab & Naseer, 2016).

Using monthly data on stocks listed in the Tokyo Stock Exchange from 1971 to 1988, Chan, Hamao and Lakonishok (1991) found that relationship was significant between fundamental variables and expected returns. The four variables investigated were dividend yield, earnings yield, book-to-market ratio and the size of the company. Mukherji, Dhatt and Kim (1997) investigated the relations between stock returns and fundamental variables in Korea from the period 1982 to 1993, and found book-market and sales-price ratios were more efficient indicators than earnings-price ratio, and that the debt-equity ratio rather than beta provided a more valid proxy for risk. Martinez (1999) assessed the usefulness of fundamental information of 50 industrial firms in the French stock market from 1992 to 1997 and found significant relationship between returns and fundamental information. Additionally, the predictive strength of the fundamental information increased with the addition of macroeconomic variables to the explanatory model.

Akdeniz, Altay-Salih, and Aydogan (2000) studied the stock returns in the Turkish market from 1992 to 1998, and found that book-to-market and size of the company predicted stock returns. Akdeniz et al. (2000) added that the market beta had no explanatory strength. Omran and Ragab (2004) investigated the relationships between financial ratios and stock returns in Egyptian firms for the period from 1996 to 2000 using linear and non-linear models between common financial ratios and stock returns for a sample of 46 firms. Their findings showed that non-linear relationships were indicative of stock returns. In their study Bhargava and Malhotra (2006) measured earnings yield and prices of stocks of four indices from world markets for a period of 20 years from 1980 to 2000. Bhargava and Malhotra (2006) concluded that increases in the price-earnings ratio resulted in decline in dividend yields and an increase in stock prices.

Hjalmarsson (2010) tested stock return predictability using four common variables being dividend-price, earnings price ratios, interest rate and term spread. Data comprised of more than 20,000 monthly observations from 40 stock markets worldwide, which included 24 developed and 16 emerging markets. Results showed that while interest rate and term spread were strong predictive strength, no strong evidence of predictive strength was evident for dividend price and earnings price ratios. Kheradyar et al. (2011) selected three financial ratios to test their predictability of stock returns. Study was conducted on stocks in the Malaysian market from a period of ten years from 2000 to 2009 using generalized least squares (GLS) techniques. Similar to Fama and French (1992 and 1995), Kothari (1997) and Pontiff and Schall (1998), Kheradyar et al. (2011) found that book-to-market ratio had stronger predictive power compared to dividend yield, earning yield.

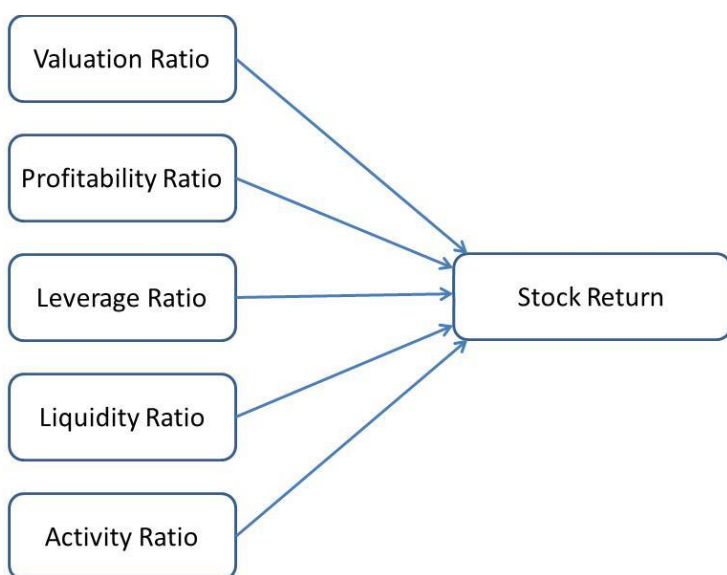
Taani and Banykhaled (2011) investigated the relationship between financial information and share return by using five financial ratios classified under profitability, leverage, liquidity, asset turnover, and market value with the addition of two variables comprising of size of a firm's total assets and cash flow. The study covered a ten year period from 2000 to 2009 of stocks in the Jordan market. Taani and Banykhaled (2011) concluded that various financial ratios significantly affected the earnings per share. These ratios were identified as return on equity, price to book value, cash flow and the leverage ratio. Citing that there was a lack of research in the area in the south Asian markets, Wijesundera, Weerasinghe, Krishna, Gunawardena and Peiris (2015) examined the predictive powers of five financial ratios, return on equity, book value to market value ratio, earnings per share, dividend yield and price to earnings ratio over a period of ten years from 2004 to 2013 on the Colombo Stock Exchange. Results showed that ROE, EPS and BM had a significant positive relationship with stock returns. Wijesundera et al. (2015) suggested that more research needs to be done considering that the R-Squared value was weak for the predictive power for the ratios.

Classification of Financial Ratios

As can be seen above, the amount of information that can be drawn from analysing the financial statements is substantial. When analysing the financial statements a variety of financial ratios can be used. These financial ratios can be categorised in terms of liquidity, profitability, debt, operation and investment valuation (Brigham & Ehrhardt, 2007; Ross, Westerfield, & Jaffe, 2013). Martikainen (1993) classified the financial variables based on the financial characteristics of a firm in terms of profitability, financial leverage, operating leverage and corporate growth. In his study covering 1970 to 1976, Ohlson (1980) presented empirical results on prediction of corporate failure leading to eventual bankruptcy. Ohlson (1980) identified four factors in predicting the probability of failure using a one year time frame. The factors identified were firm size, financial structure, performance and liquidity. Based on the literature review, the financial ratios for this study have been classified according to a company's valuation, profitability, liquidity, financial leverage and activity. The proposed conceptual framework is based on this classification.

CONCEPTUAL FRAMEWORK

Figure 1: Proposed Conceptual Framework



RESEARCH METHODOLOGY

Purposive sampling will be used to select the sample for companies listed in Malaysia Stock Exchange from the consumer and industry sector. These sectors have been identified as strong and stable drivers to the Malaysian economy. According to the first quarter of 2018 results from the Department of Statistics, the services and manufacturing activities were major contributors to the GDP of the country contributing 54.8% and 22.8% respectively at constant 2010 prices (*Malaysia Economic Performance First Quarter 2018*, 2018). Information Communication Technology (ICT) contributed 18.2 per cent to the economy in 2016 (*Information and Communication Technology Satellite Account 2016*, 2017). Panel data will be used for formulating the simple and multiple regression models. The data collected for this study will be cross-sectional and time-series based with cross-sectional data reflected in stock returns of the various companies and time-series reflected in the changes of the stock returns over time for each of the company. Panel data analysis will be employed for this study, as it is considered to be an efficient analytical method in handling multivariate regression data (Wooldridge, 2010).

SUMMARY AND CONCLUSION

The aim of this study is not to present a definite model for determining stock returns, but instead to suggest that predictability exists between financial ratios and stock returns. The results are expected to show that financial ratios are significant predictors of stock returns. Findings of this study may aid investors when making decisions on their investments by developing a predictive model for stocks in the Malaysia market. The study also aims to contribute to the robustness of the empirical evidence on the usefulness of financial ratios as predictors of stock returns in emerging markets, specifically Malaysia

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PREFERRED LEARNING STYLES AND SOFT SKILLS: HOW DO ACADEMIC PERFORMANCE MODERATE THE LINK?

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Abstract

This study aims to determine the impact of preferred learning styles on soft skills among undergraduate accounting students. The preferred learning styles consist of visual, auditory and kinesthetic while students' soft skills comprise of communication skills and critical thinking. This study hypothesized that the relationship between preferred learning style and soft skills is moderated by academic performance. The sample for this study consists of 306 undergraduate accounting students who were selected randomly from University Malaya, Universiti Putra Malaysia and Universiti Tunku Abdul Rahman. The instruments used in this study were Barsch's Learning Inventory to measure students' learning styles and Malaysian Soft Skills Scale (My3S) instrument to assess the graduates' soft skills attainment level. The data were analyzed using SmartPLS software. An analysis of partial least square path modelling were performed to achieve the objectives of this study. The outcome of this study shows that preferred learning styles statistically significant on soft skills. This study found that academic performance strengthen the influence of kinesthetic learning style on soft skills. It is expected that this study will contribute to education development by providing understanding on preferred learning style. This study also beneficial for future student employability as soft skills is an important niche in employment requirement.

Keywords: Learning styles, soft skills, visual, auditory, kinesthetic, communication skills, critical thinking, problem solving, Barsch's learning

DIVIDEND REINVESTMENT PLAN IN MALAYSIAN STOCK MARKET

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Abstract

Although many literatures related to event studies have reported the issue of event-induced variance and cross correlation among abnormal returns, a lot of researchers still employ conventional event-study methods which tend to reject the null hypothesis of zero average abnormal returns too frequent when it is true (higher type I error). In this paper, we applied a more advanced event-study method, namely the adjusted Boehmer, Mucumeci, and Poulsen (Adj-BMP) test, to provide a remedy to the issue of event-induced variance and cross correlation among abnormal returns. Using dividend reinvestment plan to evaluate a battery of both statistical tests, the empirical results found the presence of the cross-correlation among abnormal returns. Consequently, the Adj-BMP test produces four significant abnormal returns from day 10 before the event to day 30 after the event while the BMP test generates five significant abnormal returns. The BMP test exhibits 25% over-rejection of null hypothesis. At the same time, the level of significance has been decreased from 5% to 1% in the BMP test to 10% to 5% in the Adj-BMP test. Thus, we show that the Adj-BMP test is a robust test in presence of cross correlation among abnormal returns. According to the Adj-BMP test, this study found that there is an impact of dividend reinvestment plan events on the average abnormal returns. This study makes a major contribution to research on providing an empirical comparison between BMP test and Adj-BMP test to resolve event-induced variance and cross correlation among abnormal returns in event studies of Malaysian stock market.

Keywords: Abnormal return, Adj-BMP test, Cross correlation, Dividend reinvestment plan, Event study

FINANCIAL LITERACY OF UNDERGRADUATES

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Abstract

Financial literacy is one's ability in analyzing, managing, and evaluating his or her personal financial-related matters and be able to make appropriate financial decisions in daily life. Financial literacy is vital for an individual, a society as well as a country as it supports and enhances the financial well-beings. In Malaysia, the number of youth bankruptcy cases shows an increasing trend. This phenomenon has raised the concern on the level of financial literacy posed by the youngsters as well as their abilities on handling their debts. This research studies the level of financial literacy of undergraduates, who are in the stage switching from financial dependence to financial independence. Besides, the effect of financial knowledge and the financial socialization agents, i.e. the people around the undergraduates who could affect their decisions, on the financial literacy are examined. The results show that both variables positively affecting the financial literacy of undergraduates. Furthermore, the results show that there is a significant difference in the level of financial literacy between the undergraduates who have and have not taken any finance-related subjects.

Keywords: Financial literacy, financial knowledge, financial socialization agents, undergraduates

ANTECEDENTS AND CONSEQUENCES OF FINANCIAL LITERACY AMONG MILLENNIALS

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Abstract

The issues of having financial problems among millennials, i.e. Gen Y are critical nowadays. The main aim of this study is to develop a conceptual framework to assess the determinants which will influence financial literacy and its impact on the financial planning and financial behaviour of millennials. Being a conceptual paper, a financial literacy framework is developed by integrating influential factors (i.e. gender, marital status, income and motivation) and consequences (i.e. financial planning and financial behaviour) into one model. Findings of this study identify five antecedents of financial literacy, namely gender, marital status, income, education and motivation and two consequences which are financial behaviour and financial planning using theory of planned behaviour. The study proposes potential positive relationships between antecedents and financial literacy. In addition, the study proposes the association between financial literacy and both financial behaviour and financial planning. The study will contribute to the government and policy makers in reviewing the existing programmes related to financial literacy which are beneficial to the Malaysian population, specifically to the millennials.

Keywords: Financial literacy, financial behaviour, financial planning, millennials, theory of planned behaviour

WHAT MAKES MALAYSIANS FINANCIALLY SATISFIED?

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Abstract

Most Malaysian employees are still paid significantly lower than the desired amount to achieve minimum acceptable living standard. The real wage growth has been declined compared to the inflation rate. This makes the Malaysian dissatisfied with their financial situation. Additionally, previous studies have shown that financial satisfaction is one of the domains underlying quality of life. In view of this, the aim of this study is to investigate what makes Malaysians satisfied with their financial circumstances. Based on the sixth wave of World Value Survey (WVS) by ordered logistic and ordered probit modelling, the results suggest that marital status, savings, income level, income equality, and food security are significantly and positively related to financial satisfaction. However, tax and subsidy from government is negatively associated with financial satisfaction. These findings are useful for policy makers not just to improving and enhancing national financial satisfaction among Malaysians but indirectly greater Malaysians' quality of life can be tackled.

Keywords: Financial Satisfaction, Malaysia

MODERN TECHNOLOGIES AND BEHAVIOUR OF YOUTH: A CASE STUDY IN MALAYSIA

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Abstract:

The study aims to investigate the impact of modern technologies on Malaysian youth's behaviour. A cross-sectional survey is utilized to collect the information about youth's behaviour from age 15 to 35 years old. Findings from the scoring method analysis revealed that increases usage of modern technology significantly impact youth's behaviour. Hence, high usage of modern technology is strongly not recommended. This is due to the possibility of youth in assessing inappropriate contents through the internet from the modern technologies. Therefore, in order to restrain the negative influence of modern technology on youth's behaviour, it is recommended that modern technologies should be used for obligatory task rather than on the unnecessary activities.

Keywords: Modern Technology, Youth, Behaviour Problems, Aggressive Behaviour, Malaysia

INTRODUCTION

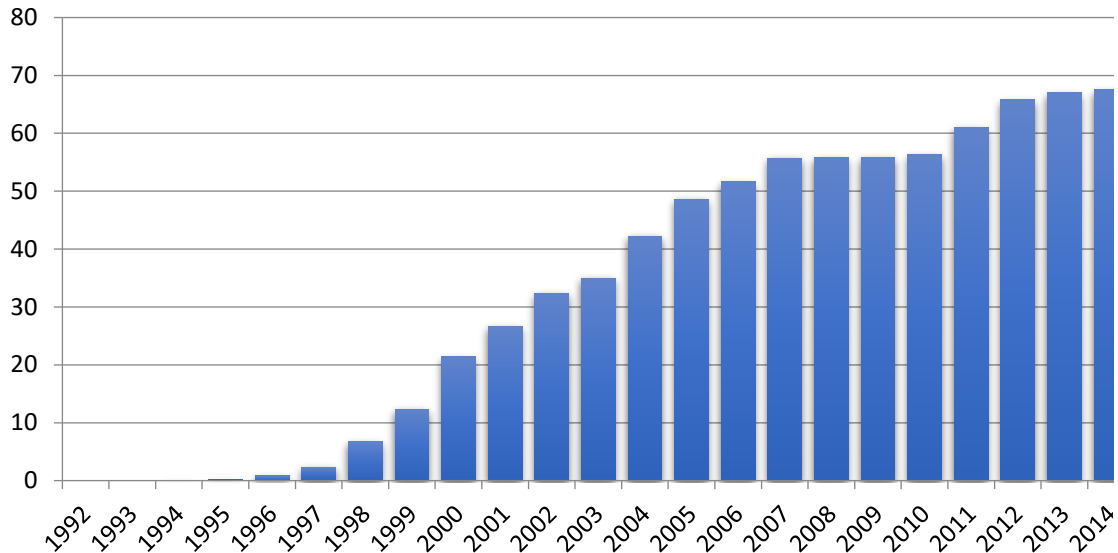
The impact on modern technology has become an important topic that been speechifying in the literature recently such as Bakar and Bidin (2014), Goggin (2010), Goggin (2013), Jonsson, Bladh and Svedin (2014), Lim (2013), Shank and Cotten (2014), Ybarra and Mitchell (2005), and Yusop and Sumari (2013). This is because overusing or misusing of the modern technology may potentially ends up harming our lives and society. According to Zickuhr (2010), millennial which those who ages 18-33 are more likely to access the internet wirelessly with laptop or mobile phone if compare to other generations. It is known that individuals who are addicted to the internet, video games or excessive dependence on modern technology may lead them involve to behaviour problems and cause them to behave aggressively (Kubey, Lavin, & Barrows, 2001).

In Malaysia, the numbers of internet users have increased throughout the years as shown in Figure 1 and stands out as a developing country with fourth-highest proportion of digital natives in the world, despite ranking much lower globally in information and communication technology development (International Telecommunication Union, 2013)¹. This indicates that youth in Malaysia is increasingly exposed to activities related to pornography, cyber-bullying, cyber-grooming etc. due to greater access to information (Joorabchi, Hassan, & Osman, 2013). In view that the exposure of youth to numerous new media and technologies might influence the youth development cause them to get involve in high-risk behaviour which include sexuality, drug and alcohol consumption, and smoking (Idris et al., 2008). Therefore, it is necessary to investigation the impact of modern technology towards the youth behaviour in Malaysia given that the youth are the most integrated with modern technology.

This study is organized as follows: Section 2 reviews the literature related to the impact of modern technology towards the behaviour problems and aggressive behaviour of youth. Section 3 explains the methodology used in the study and how the data is collected and analysed. Section 4 analyses and discusses the result of the findings. Section 5 concludes and recommendations of the study.

¹ Digital natives are defined as youths aged 15 to 24 with at least five years of active internet use.

Figure 1: Internet Users (Per 100 people) in Malaysia



Source: World Bank (2016)

LITERATURE REVIEW

Violence and behaviour problems among teenagers/youth are an important issue that been debating from few decades ago in the literatures. Most of the researchers identify that this problems is mainly due to the media exposure on the teenagers/youth (Anderson & Bushman, 2001; Anderson, 2004; Ihuoma et. al., 2013). Media exposure such as Television programs/ movies and video games are the main factors in increase the aggression behaviours among the youth and in long-term it's become more and more accessible for use when real-life conflict situation arise (Anderson & Dill, 2000; Anderson & Bushman, 2001; Przybylski et. al., 2009; Przybylski et. al., 2010).

In new era, compare to the old type of medias such as television and cellphone, video games, the new type of medias such as tables, smart TV and IPods which used to online gaming, online gambling, social networking and other internet related activities creates more behaviours problems among the youth in recent days (Longe, et. al., 2009; Ko et. al., 2009; Fallahi, 2011; Wada et. al., 2012; Yarmuth et. al., 2012; Ihuoma et. al., 2013; Alam et.al, 2014). Even, internet usages have its positive side (refer to study of Passey et. al., 2004; Romano et. al., 2013), but negative impact of internet usage on the youth is the higher concentration of a lot of parties nowadays.

Ko et. al., (2009) stated that even the violent from the television programs has been controlled but internet addiction become another major problem in aggressive behaviour of adolescent recently. Teng et. al., (2014) and Kim et. al., (2008) highlighted low self-control as aggression behaviour. Continuously accessible environments with wireless technologies (in colleges and universities), handheld computers, and smart phones provide growing temptations for misuse, including cheating, plagiarism, and bullying with digital devices (Berson & Berson, 2005; Yusop & Sumari, 2013). In addition, Wang et. al., (2012) and Lee and Stapinski (2012) added that adolescents who spent a large amount of time surfing the Internet reported poor interpersonal relationships, probably caused by a preference for online communication, which could worsen face-to-face avoidance. Finding of Fallahi (2011) supported this statement by social isolation is one of the causes of behaviour problem. Novo et. al., (2004) define this type of behaviours as cyber-aggression in their paper.

METHODOLOGY

The present study is cross-sectional in nature. Data are collected from a one-round survey in 5 regions of Malaysia named Northern region (Kedah, Penang, Perak and Perlis), Southern region (Malacca and Johor), Central region (Kuala Lumpur, Selangor and Negeri Sembilan), East coast region (Kelantan, Terengganu and Pahang) and Sabah and Sarawak region. 1,134 questionnaires are distributed to the respondents and collected.

Procedures in Selecting the Sample

The calculation of an appropriate sample size depends upon a number of unique factors to each survey and it is down to the researchers to make the decision regarding these factors. The three most important factors are: the level of precision, the level of confidence or risk; and the degree of variability in the attributes being measured (Miaoulis & Michener, 1976). The formula that allows the calculation of the sampling size is as follows (Krejcie & Morgan, 1970):

$$S = \frac{X^2 NP(1-P)}{d^2(N-1)+X^2 P(1-P)} \tag{1}$$

S = required sample size;

N = the population size;

d = the degree of accuracy or the level of precision expressed as a proportion (0.05);

X² = the table value of chi-square for 1 degree of freedom at 95% confidence level (X² = 1.96² = 3.841); and

P = the population proportion or the degree of variability (assumed to be 0.50 since this would provide the maximum sample size)

Using the above formula the estimated sample size is 384 x 5 (regions) = 1,920. However, due to budget and time constraints only 1,134 questionnaires are administered.

Data Analysis Procedure

The data analysis procedure used in this study involves the following categories with clear steps.

Category One – Scoring Method

Given that the questions on the direct and indirect involvement in technology related activities are measured using Likert-Scale, the appropriate method is scoring method. Each individual/respondent is then assigned a particular score of each activity. In explaining the scoring method, the following example is employed

Table 1: Example for behaviour and technology activity with two elements

A1: Behaviour Problem

A1.1	Send scam/spam mail to peer through e-mails/telephone	0	1	2	3	4	5
A1.2	Cheat using telephone	0	1	2	3	4	5
A1.3	Cheat while online interacting	0	1	2	3	4	5

A2: Aggressive Behaviour

A2.1	Learn aggressive behaviour through violent video games	0	1	2	3	4	5
A2.2	Make video calls with peers and plan in bullying victims	0	1	2	3	4	5
A2.3	Abuse people through cell phones, face book, e-mail etc	0	1	2	3	4	5

Step 1: Score of each element for an activity is added to obtain the total score of the activity

Score for Behaviour Problem = A1.1+A1.2+A1.3 = 9

Score for Aggressive Behaviour = A2.1+A2.2+A2.3=9

This process continues for all elements of the activity.

Step 2: Score of each activity is then added together

Score for Behaviour = Score for Behaviour Problem + Score for Aggressive Behaviour = 9 + 9= 18

Step 3: The score is then recoded to comply with the original 6-point Likert-Scale

Table 2: New Likert-Scale

Maximum Total Point of original Likert-Scale	Range	New Likert-Scale	Frequency
0	0	0	Not applicable
6	1 – 6	1	Not at all
12	7 – 12	2	Low

18	13 – 18	3	Moderate
24	19 – 24	4	High
30	25 – 30	5	Very high

The maximum total point of original Likert-Scale is calculated by multiplying the total number of question with the Likert-Scale. For example, there are 6 questions altogether and the maximum score obtained is 30 (6 x 5 = 30).

The above example on behaviour shows a score of 18 and this provides a new Likert-Scale point of 3. This implies that this particular individual / respondent having 'moderate' behaviour problems because of the technology use.

Step 4 Using STATA statistical tool, the mean value of behaviour for the whole sample is then estimated.

Let's assume that the mean value for behaviour is 4.3. This assumes that youth having 'high' level of behaviour problems.

Category Two– Regression Analysis

A simple OLS is estimated to investigate the factors influencing youth's behaviour. The following regression analysis is estimated.

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \dots + u_i \text{ Where}$$

Y is the score for each activity

X is the independent variables to be measured (age, gender, education level, etc.)

u is the error term

Table 3: Respondents' Personal Demography

	Frequency	Percentage
GENDER		
Male	397	35.01
Female	736	64.90
Not respond	1	0.09
ETHNIC		
Malay/Bumiputera	625	55.11
Chinese	301	26.54
Indian	144	12.70
Others	63	5.56
Not respond	1	0.09
Education		
Primary	4	0.35
Secondary	319	28.13
Tertiary	799	70.46
Others	7	0.62
Not respond	5	0.44
AGE GROUP		
15-19	315	27.78
20-24	733	64.64
25-29	65	5.73
30-34	13	1.15
35 & above	3	0.26
Not respond	5	0.44

Before further explaining on data analysis, the basic information of respondents and simple descriptive analysis of data are first examined. Table 3 presents the frequencies and percentages of respondents that participated in the study. The number of respondents that comprise in the study consists of 397 males (35.01%), 736 females (64.90%), and 1 respondent (0.09%) did not respond. Majority of respondents are Malay/Bumiputera (55.11%) followed by Chinese (26.54%), Indian (12.70%), others (5.56%) and 1 respondent (0.09%) did not respond. This consistently reflects that Malaysia is a multi-racial country which is mainly dominated by Malays followed by Chinese, Indians and numerous indigenous people. Most of the respondents that participate in this study are aged 20-24 (64.64%), and they already possessed of tertiary level of education (70.46%). This is consistent with our target of respondents.

Table 4 demonstrates six statements for behaviour problems. A1.4 scores the highest mean (2.10); while A1.6 scores the lowest mean (1.10). A1.4 scores the highest standard deviation (1.286); while A1.6 scores the lowest standard deviation (0.574). Six statements for behaviour problems are positively skewed. All statements have positive value in kurtosis which means that the distribution is more peaked than a normal distribution except A1.4 is negative in kurtosis which means that the distribution is flatter than a normal distribution.

On the other hand, Table 4 also shows four statements for aggressive behaviour. A2.1 scores the highest mean (1.49); while A2.3 scores the lowest mean (1.37). A2.1 scores the highest standard deviation (1.072); while A2.2 scores the lowest standard deviation (1.014). Four statements for behaviour problems are positively skewed. All statements have positive value in kurtosis which means that the distribution is more peaked than a normal distribution.

Table 4: Descriptive statistics

	N	Mean	Std. Dev.	Skewness	Kurtosis
A1: BEHAVIOUR PROBLEM					
A1.1 Send scam/spam mail to peer through e-mails or telephone	1134	1.34	0.930	2.961	8.342
A1.2 Cheat using telephone	1134	1.37	0.929	2.763	7.294
A1.3 Cheat while online interacting	1134	1.43	0.980	2.546	6.251
A1.4 Addicted to internet	1134	2.10	1.286	0.842	-0.412
A1.5 Engage in online human trafficking	1134	1.11	0.579	6.426	45.452
A1.6 Cheat ATM credit cards	1134	1.10	0.574	6.772	48.444
A2: AGGRESSIVE BEHAVIOUR					
A2.1 Learn aggressive behaviour through violent video games	1134	1.49	1.072	2.318	4.557
A2.2 Make video calls with peers and plan in bullying victims	1133	1.38	1.014	2.780	6.798
A2.3 Online cyber intimidation of peers	1134	1.37	1.029	2.793	6.811
A2.4 Abuse people through cell phones, face book, e-mail etc	1134	1.42	1.045	2.605	5.931

DISCUSSION

To identify how modern technologies may effect on the youth's behaviour in Malaysia, the modern technologies have been separated the technologies into old and new. The old technologies are categories as PC, laptop and normal mobile phone whereby new technologies are such as smart phone, tablet, ipod and smart TV. The results of the analysis presented in Table 5 and Table 6.

Table 5: The Impact of Access and Usage of Old and New Technologies on Behaviour Problem

Technology	Coefficient	Standard Error	t-statistics	Probability
Old Technology				
0 - 3 hours	0.0468	0.4816	0.10	0.923
4 - 8 hours	0.2489	0.4956	0.50	0.617
9 - 14 hours	0.3301	0.5792	0.57	0.569
15 hours & above	0.9655	0.8106	1.19	0.234
constant	8.0000	0.4576	17.48	0.000
F(5, 1128)	0.56			
Prob> F	0.731			
New Technology				
0 - 3 hours	1.1126	0.5606	1.98	0.047
4 - 8 hours	1.1850	0.5736	2.07	0.039
9 - 14 hours	1.4081	0.7442	1.89	0.059
15 and above	6.1667	1.1627	5.30	0.000
constant	7.0000	0.5431	12.89	0.000

F(4, 1129)	7.16
Prob> F	0.0000

Table 5 shows the results that compare the usage of old and new technologies on behaviour problem of youth in Malaysia. The result indicates that usage of old technology does not significantly impact youth behaviour but usage of new technology does significantly affect youth behaviour. The scores of behaviour problem of youth spending 0 – 3 hours, 4 – 8 hours, 9 – 14 hours and 15 hours and above on new technology as compared with those who do not spend time on new technology would increase by 1.11, 1.18, 1.41 and 6.17 points, respectively.

Table 6: The Impact of Access and Usage of Old Technology and New Technology on Aggressive Behaviours

Technology	Coefficient	Standard Error	t-statistics	Probability
Old Technology				
0 - 3 hours	-0.0753	0.1298	-0.58	0.562
4 - 8 hours	-0.1055	0.1335	-0.79	0.430
9 - 14 hours	-0.0435	0.1561	-0.28	0.780
15 - 23 hours	0.0723	0.2184	0.33	0.741
24 hours & above	1.9516	0.5009	3.90	0.000
constant	1.5484	0.1233	12.56	0.000
F(8, 1125)	3.77			
Prob> F	0.0022			
New Technology				
0 - 3 hours	0.2980	0.1517	1.96	0.050
4 - 8 hours	0.2590	0.1552	1.67	0.095
9 - 14 hours	0.4262	0.2014	2.12	0.035
15 and above	1.8140	0.3146	5.77	0.000
constant	1.1860	0.1470	8.07	0.000
F(4, 1129)	8.82			
Prob> F	0.0000			

Table 6 illustrates the results of the impact of access and usage of old technology and new technology on youth aggressive behaviour. The results reveal that youth who uses no more than 23 hours of old technology as compared to those who do not use old technology has shown insignificant impact on youth involving on aggressive behaviour. However, youth who uses 24 hours and above of old technology as compared to those who do not use old technology would significantly increase the score of youth involving on aggressive behaviour by 1.95 point.

On the other hand, youth who uses 0-3 hours of new technology as compared to those who do not use new technology would significantly increase the score of youth involving on aggressive behaviour by 0.30 point. Youth who uses 4-8 hours of new technology as compared to those who do not use new technology would significantly increase the score of youth involving on aggressive behaviour by 0.26 point. Youth who uses 9-14 hours of new technology as compared to those who do not use new technology would significantly increase the score of youth involving on aggressive behaviour by 0.43 point. Youth who uses more than 15 hours of new technology as compared to those who do not use new technology would significantly increase the score of youth involving on aggressive behaviour by 1.81 point.

Overall, increase usage of new technology as compared with old technology significantly increases youth behaviour problem and aggressive behaviour. This finding is consistent with the findings of Longe, et. al. (2009), Ko et. al. (2009), Fallahi (2011), Wada et. al. (2012), Yarmuth et. al. (2012), and Ihuoma et. al. (2013) who highlight that ICT increases behaviour problem among youth. Somehow, the findings of this study contradict the study of Anderson and Dill (2000), Anderson and Bushman (2001), Przybylski et. al. (2009), and Przybylski et. al. (2010) which state that youth behaviour is affected by old technologies (television program and computer games). But, in this study, old technology does not show significant impact on the youth behaviour because old technology does not have access for Internet that reduces youth spending time on such technologies. Youth nowadays prefers the usage of devices that could have 24 hours Internet connection. Such devices include tablet, smartphone and smart TV. This view is supported by recent news in Malay Mail online that Malaysian youth are fourth most active Internet users in the world (Silapan, November 2015). In addition, youth who is able to access the Internet facility has

a great exposure to inappropriate commercial, sexual, and violent contents as compared to the old technology, hence causing them to behave aggressively (Wartella & Jennings, 2000).

CONCLUSION AND RECOMMENDATIONS

Given that overusing and misusing of modern technology may be associated with youth's behaviour problem and creating aggressive youth in Malaysia, therefore, high usage of modern technology is strong not recommended. Usage of modern technology stresses the user and this is how the user affects by aggressive behaviour. In this case, modern technology should be used for obligatory task and should minimize in the usage on unnecessary activities. Moreover, the best way to reduce the aggressiveness is by communicating with people; especially friend and family whereby this has become a rare phenomenon among youth nowadays. The values of humans are not considered anymore. They are preferred to spend more time on modern technology compare to communicating with humans. This is the big challenge for the government in promoting youth to use the technology for necessary work only to reduce the behaviour problem and aggressiveness among youth in Malaysia.

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A CONTEMPORARY PARADIGM OF TRAVEL INDUSTRY: DETERMINANTS OF SHARING ECONOMY ADOPTION

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Abstract

The phenomenal growth of technology has created a vibrant new domain for sharing economy (SE) in Malaysia travel industry. Despite of numerous limitations exist such as lack of rules and regulations established to safeguard consumers' right in SE, it is still highly acceptable by the Malaysian. Thus, research was conducted to examine how consumer's perception and mobile technology acceptability may affect consumer's behavioral intention (BI) and SE adoption. An enhanced framework was created by integrating Mobile Technology Acceptance Model (MTAM) into the Extended Valence Framework with the proposed constructs of perceived benefits (i.e. epistemic benefit & convenience), trust, mobile ease of use (MEU) and mobile usefulness (MU) having positive and significant towards consumers BI in SE adoption, while perceived risk (i.e. psychological risk & physical risk) are significant and negatively related to the BI in SE adoption. A cross-sectional study with 500 sets of questionnaire were delivered to travelers in the states rated by Department of Statistics Malaysia (DOSM) with higher percentage of visitors with sampling location mainly in transportation hubs and airports. The research outcomes indicate that all hypotheses were accepted except convenience and physical risk were instead having insignificant relationship towards BI. Beneficial not only to academic line, this research has contributed to all the current and future SE providers, as well as government to have better insights on SE applications in the travel industry.

Keywords: Sharing Economy (SE), Extended Valence Framework (EVF), Mobile Technology Acceptance Model (MTAM), travel industry

INTRODUCTION

Traditionally, most consumers accustomed to owning what they use. However, sharing economy emerges as a rising trend today as consumers nowadays prefer sharing or renting rather than owning (Gesing, 2017). Sharing economy (SE), namely, collaborative consumption, is a peer-to-peer-based interaction activity of an organization or individual who owned idle resources and has the willingness to deliver the right usage of such resources to others with a cost (Hamari, Sjöklint & Ukkonen, 2015). It has unlocked a new frontier by matching those with under-utilized assets with others who demand and willing to pay for them (The rise of the sharing economy, 2013). Tentatively, SE is changing industry dynamics especially in travel industry as it revolutionized the way travelers acquire for their accommodation (Cheng, 2016; Karlsson & Dolnicar, 2016; Ert, Fleischer & Magen, 2016). For instance, peer-to-peer (P2P) accommodation platforms are altering the consumption patterns extending to destination selection and range of activities involved in tourism destinations (Tussyadiah & Pesonen, 2015).

However, there were still some underlying problems that yet to be solved. For instance, Uber was not responsible for any accidents caused by the drivers when they were picking up a smartphone hail, leaving excess liability tangled with the driver and passenger. Furthermore, there was a case where accommodation sharing service (e.g. Airbnb) raised racial discrimination in California (Lee, 2017). Besides, it was found that there was a lack of rules and regulations established to safeguard consumers' right in SE usage in Malaysia. Despite of numerous limitations of SE, it was still highly acceptable by Malaysian as the fast-paced growth of the usage of SE can be seen over the years (80pc prefer Uber, 2016; Lum, 2018). The science behind the significant growth must be addressed properly as for business practitioner and research's useful purpose. Thus, this research was conducted to examine how consumer's perception and mobile technology acceptability may affect consumer's behavioral intention (BI) and SE adoption.

LITERATURE REVIEW

Mobile Technology Acceptance Model (MTAM)

Mobile Technology Acceptance Model (MTAM), which was developed by Ooi and Tan in 2016 is applied in this study. MTAM is rooted from TAM which is a crucial research model to examine the behavioral intention of consumers towards information technology sectors (Chen & Chen, 2011). Several types of research have proven that the TAM applies especially to the acceptance of IT products by consumers, however, it does not reflect the real mobile environment (Cheung & Vogel, 2013; Qiu & Li, 2008). In contrast, the sharing economy (SE) as an internet-based system is mostly adopted for personal use by mobile users (Botsman & Rodgers, 2010). This makes it difficult to draw a meaningful conclusion. Moreover, MTAM has barely been investigated, particularly in sharing economy context. Therefore, to reflect the actual mobile environment, MTAM is applied in this study to determine the acceptance of the sharing economy. MTAM includes mobile ease of use (MEU) and mobile usefulness (MU). MEU is deemed to be the perception of difficulty to learn and use for potential adopters during mobile devices adoption, while MU is about the perception of enhancing functionality for the users of mobile devices (Ooi & Tan, 2016).

Extended Valence Framework

The valence framework is originally extracted from economical and psychological literature to determine behaviors that incorporate the perceived risks and benefits simultaneously (Goodwin, 1996). However, recognizing the significant role of trust, Kim, Ferrin and Rao (2008) introduced trust into valence framework as perceived risks, perceived benefits and trust share the similar characteristic which directly affects the intention of consumers and also displays the readiness of consumers to take risks to meet their needs. Next, in term of perceived risk, physical risk has a major effect to consumer behavioral intention in sharing economy context as Airbnb listings are not regulated in comparison with hotels or other traditional lodge (Stones, 2015). Besides, Kim, Kim and Leong (2005) discovered that psychological risk significantly affects consumer behavioral intention in sharing economy. As a result, psychological and physical risk was added as an additional construct to perceived risk. In line with Kim, Yoon and Zo (2015), epistemic benefit is one of the perceived benefit in sharing economy as the traveling objectives will be achieved by satisfying the desire to acquire new experiences. Moreover, epistemic benefit is less investigated in sharing economy context. Furthermore, as stated by Nielsen, Hovmoller, Blyth and Sovacool (2015), convenience is recognized as one of the significant determinants in influencing people's behavior in sharing economy. Besides, convenience brings positive value to users as they are able to make a booking for ridesharing or accommodation via the use of their mobile gadgets. Therefore, epistemic benefit and convenience are added as an additional construct in perceived benefits.

The Hypothesized Relationship between Epistemic Benefit (EB) and Behavioral Intention (BI) to adopt Sharing Economy (SE)

Epistemic value refers to the knowledge and experience gained upon trying new things (Pihlstrom & Brush, 2008). Kim et al. (2015) defined EB as one of the perceived benefits in SE adoption as the general purpose of travelling will be achieved by satisfying the desire to acquire new experiences. EB is one of the relative advantages that will lead to a positive participation intention in consumers in SE (Kim et al., 2015). Besides, several past studies indicated that perceived epistemic takes part as a major factor in the adoption of IT innovations (Wang & Wu, 2013; Wells, Campbell, Valacich & Featherman, 2010). Lin and Huang (2012) also proved that epistemic value has a positive impact on behavior of consumer's choice regarding the green products. Wang, Liao and Yang (2013) shows that there is a significant relationship between epistemic values and BI to use mobile Apps. In contrast, Al-Debei and Al-Lozi (2014) concluded that epistemic value has an insignificant relationship toward the adoption intention of mobile data services in Jordan. As there were two points of view from past studies, EB should be further investigated in this study. Therefore, it can be hypothesized that:

H1: There is a significant positive relationship between EB and BI to adopt SE.

The Hypothesized Relationship between Convenience (CONV) and Behavioral Intention (BI) to adopt Sharing Economy (SE)

CONV defined as the perceived effort and time needed in completing a task (Seiders, Voss, Godfrey & Grewal, 2007). It refers to the degree in which consumers feel the goods or services can be found and used

easily (Chen & Tsai, 2017). CONV considered as a significant factor in influencing consumer's behavior (Nielsen et al., 2015) and it motivated consumers to use SE services (Erving, 2014). Based on past studies, convenience value would positively affect the intention to adopt mobile health services (Lee and Han, 2015) as mobile technologies users can utilize healthcare services at their convenience without travel to the healthcare centre (Lee & Han, 2015). This same goes to SE users as they can make a booking for ridesharing or accommodation by using a mobile app. Besides, perceived convenience has a positive impact on perceived usefulness and the perceived usefulness has a positive relationship to usage intention (Chen & Tsai, 2017; Liu, Wu & Lin, 2018). Yang and Lin (2017) also proved that perceived CONV significantly influence continuance usage intention positively. Joo (2017) further proved that CONV is a significant factor of motive in participating in SE. Hence, it can be hypothesized that:

H2: There is a significant positive relationship between CONV and BI to adopt SE.

The Hypothesized Relationship between Perceived Psychological Risk (PSY) and Behavioral Intention (BI) to adopt Sharing Economy (SE)

PSY meant consumer's perspective regarding operating efficiency of system and problem arise that may lead to mental anxiety, psychological discomfort, and psychological tension when performing an online transaction (Kanokkarn Snae Namahoot and Tipparat Laohavichien, 2018). PSY is considered as one of the dominant factors that consumer concern on, especially when dealing with costly and complicated online products or services (Ariff, Sylvester, Zakuan, Ismail & Ali, 2014). According to past studies, Lee (2018) indicated that a positive relationship between PSY and tourist non-purchase intention in peer-to-peer accommodation exist. Probability for using peer-to-peer accommodation would be lower if tourist tends to perceive PSY as high risk (Kim, Kim & Leong, 2005). Xie (2017) stated that PSY would significantly affect BI of the user in adoption on information technology such as the virtual learning community. Hamoodi (2016) figured out a negative relationship between psychological anxiety and adoption intention exists due to inadequate knowledge on Cloud Computing and afraid of making the wrong choice. Thus, it can be hypothesized that:

H3: There is a significant negative relationship between PSY and BI in SE.

The Hypothesized Relationship between Physical Risk (PHY) and Behavioral Intention (BI) to adopt Sharing Economy (SE)

PHY refers to hazards to either the health or appearance of the consumer but also to the physical exhaustion and mental capacity devoted to the purchase and whether or not the service provided the consumer with saving effort (Hall & Royles, 2016). It is possible of compromise of one's physical safety when receiving sharing service (Zhang, Yan & Zhao, 2016). Therefore, PHY is included as users may result in physical harm after their participation in sharing economy (Zhang, Yan & Zhao, 2016). According to past studies, PHY has indeed impacted the adoption intention of E-hailing services in Thailand negatively; however, it has only impacted on male user's BI to adopt (Ruangkanjanases and Techapoolphol, 2018). Beh, Chong, Yu and Wong (2015) concluded that perceived PHY can negatively affect the BI of consumer towards the purchase of KR1M Merchandises. Bhukya and Singh (2015) also proved that PHY has a negative relationship toward purchase intention of products on Indian private labels market. Thus, it can be hypothesized that:

H4: There is a significant negative relationship between PHY and BI to adopt SE.

The Hypothesized Relationship between Trust (TRU) and Behavioral Intention (BI) to adopt Sharing Economy (SE)

TRU in an online environment refers to the way a single person assumes the selected online environment are reliable and trustworthy (Posey, Lowry, Roberts and Ellis, 2010). TRU also defined as the subjective perception that users fulfill their transactional obligations through the sharing economy platforms (Kim, Ferrin and Rao, 2009). The motive to buy or to adopt e-commerce services is directly linked (Mou, Shin & Cohen, 2016). If a consumer does not have TRU in the application and believe that it lacks of user value, they will refuse to accept the SE (Kim et al., 2009). TRU service marketing is vital, particularly to hold the connection between consumers and carrier vendors (Kim et al., 2009). Lee and Song (2013) claimed that TRU is crucial in examining the adoption of mobile services in internet businesses. Furthermore, the

intention to undertake an online transaction can be affected by TRU (Shin, Lee, Shin, & Lee, 2010; Yan, Md-Nor, Abu-Shanab, & Sutanonpaiboon, 2009). According to Lee et al. (2018), users' TRU is linked positively to their behavioral intention to take part in SE. Therefore, it is hypothesized that:

H5: There is a significant positive relationship between TRU and BI to adopt SE.

The Hypothesized Relationship between Mobile Ease of Use (MEU) and Behavioral Intention (BI) to adopt Sharing Economy (SE)

Mobile Ease of Use has the same meaning as perceived ease of use for adopting a particular system and complexity to learn and use with the mobile devices (Ooi & Tan, 2016). Perceived ease of use is one of the motivating factors for a technology savvy to adopt Uber which in the meantime is a barrier as well for those who do not have any experience and knowledge with it (Fleischer and Wahlin, 2016). There are numerous studies indicated the importance of perceived ease of use towards the consumer's BI to use specifically in mobile context. For instance, MEU was found to be influential on the intention to use (IU) mobile payment (MP) in Malaysia (Teo, Tan, Ooi & Lin, 2015). Another empirical study was done by Rahman and Sloan (2017) in Bangladesh also proved that MEU was positively affecting the consumer's intention in adopting mobile commerce. Meanwhile, there was also a significant relationship found between MEU with IU in another study in Near Field Communication (NFC) MP in France (Dutot, 2015). Therefore, it is proposed that:

H6: There is a significant positive relationship between MEU and the BI to participate in SE.

The Hypothesized Relationship between Mobile Usefulness (MU) and Behavioral Intention (BI) to adopt Sharing Economy (SE)

MU is the subjective probability that using mobile technology would enhance the way to perform an assigned task that subsequently improve the job performance (Guriting & Ndubisi, 2006; Venkatesh, Morris, Davis & Davis, 2003). In this research, MU refers to the perceived usefulness rendered by potential adopters when adopting mobile devices. Liébana-Cabanillas, Sánchez-Fernández, & Muñoz-Leiva (2014) demonstrated that perceived usefulness is significantly correlated with the intention to adopt MP in Virtual Social Networks. Besides, Tan, Ooi, Chong and Hew (2014) in Malaysia on NFC m-devices revealed that the intention to adopt MP can be significantly led by MU. Teo et al. (2015) also concluded that the intention to adopt MP can be increased by time-saving and portability which was perceived as mobile usefulness. Again, research pertaining to the usage of mobile shopping application (MSA) done by Hubert, Blut, Brock, Backhauset & Eberhardt (2017) was again proving that greater MU would lead to a greater BI to adopt MSA. In contrast, MU was however shown to be insignificant based on the research done by Dutot (2015) and Balachandran and Tan (2015) in France and Malaysia respectively despite the benefits of NFC MP. As a result, MU should be further investigated in this research. Thus, it can be proposed that:

H7: There is a significant positive relationship between MU and BI in SE adoption.

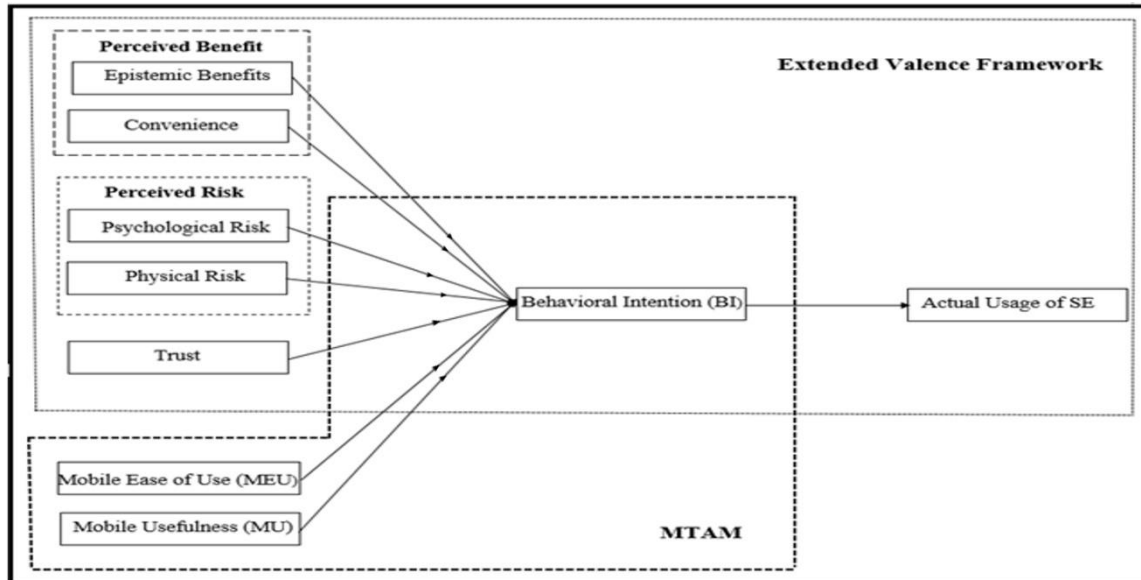
The Hypothesized Relationship between Behavioral Intention (BI) and Actual Usage of Sharing Economy (SE)

BI refers to the subjective probability of an individual's performance upon a certain action (Fishbein and Ajzen, 1975) and indicates a person's readiness (Turhan & Özbek, 2013). Many past studies (Szajna, 1996; Venkatesh & Davis, 2000) have acknowledged that BI is the dominant precursor of actual use. A study constructed by Faqih and Jaradat (2015) stated that BI has a significant relationship with the use behavior of mobile commerce technology. Han, Nguyen, and Nguyen (2016) studied on the reasons that affect customers' intention and usage of mobile commerce in Vietnam with using TAM as the base model. The result has shown that significant relationship is present between consumers' BI to use and actual usage of e-commerce. Vasileiadis (2014) studied on the security concerns and trust in the adoption of mobile commerce, it measures how factors such as security concerns and trust impact BI and has also proven that BI has a direct effect in determining the user's acceptability and usage of mobile commerce. Thus, it can be summarized that:

H8: There is a significant positive relationship between BI and AU of SE.

CONCEPTUAL FRAMEWORK

Figure 1: Proposed Conceptual Framework of Extended Valence Framework integrated with MTAM in the adoption of SE



Adapted from: Ooi et al. (2016) and Kim (2008).

Figure 1 shows the conceptual model for this study. Perceived benefit (EB, CONV), perceived risk (PSY, PHY), trust, MEU and MU are the independent variables (IVs) whereas BI serves as the dependent variable (DV) for the 7 IVs and acts as IV for the actual usage of SE (DV).

RESEARCH METHODOLOGY

Sampling design and procedures

In this research, the target respondent are travelers who are also SE users. SE users are meant to be those who have used any SE applications before. The population of 10 million required a minimum of 384 samples with 5% margin error to arrive at 95% confidence level (Saunders, Lewis and Thornhill, 2016). Hence, total of 500 sample size was adopted in this research. Besides, the primary data had been collected through self-administered and self-collection method as it promoted cost and time efficiency, reaching out to more population and reducing interviewer error (Bowling, 2005). A cross-sectional study was used as it conducted in a shorter time and lower cost to assess the relationship between variables (Setia, 2016).

In addition, non-probability sampling was selected as the sampling frame of travelers who are also SE users in Malaysia was unknown. Purposive sampling was used due to appropriate respondents can be identified based on the researcher's judgement (Hair, Bush & Ortinau, 2003). Furthermore, Selangor (12.41%), Perak (9.79%), Kuala Lumpur (9.27%), Pahang (8.03%), Kedah (6.48%) and Johor (6.40%) had been chosen as the sampling location because total population percentage contributed by these 6 states are 52.38% which exceeds half of the number of visitors in Malaysia (DOSM, 2017).

Transportation hub and airport were taken as sampling location because travelers can exchange their mode of transportation and be involved in SE by calling Grab/Uber to travel to or from the transportation hubs (Tariq, 2018), whereas, airport considered as a transportation hub as well (Carvalho, Marques, & Costeira, 2017). Out of the 500 sets of survey questionnaires administered, only 473 sets of questionnaire were collected and only 468 sets found to be complete. The remaining 5 sets were not usable due to incomplete responses or missing information. Therefore, the response rate equals to 94.60%.

Variable measurements

Independent variables: Perceived benefit, Perceived risk, Trust and MTAM toward Behavioral intention

There are seven IVs namely Epistemic Benefit (4 items), Convenience (4 items), Psychological Risk (4 items), Physical Risk (3 items), Trust (3 items), Mobile Ease of Use (5 items) and Mobile Usefulness (5 items) whereas Behavioral Intention serves as both IV and DV which consist of 3 items. All these variables was adopted from Al-Debei and Al-Lozi (2014), Yang and Lin (2017), Lee (2018), Ruangkanjanases and Techapoolphol (2018), Cheung et al. (2015), Ooi and Tan (2016) and Faqih and Jaradat (2015). It applied 6-point Likert scale to measure constructed variable [(1) = strongly disagree; (2) = disagree; (3) = slightly disagree; (4) = slightly agree; (5) = agree and (6) = strongly agree]. The table below show sample question for each constructed variable.

Dependent variables: Actual use of SE

There are 3 items for DV. This items was adopted and revised from Faqih and Jaradat (2015). It applied 6-point Likert scale to measure constructed variable [(1) = Never; (2) = Less than once a month; (3) = A few times a month; (4) = A few times a week; (5) = About once a day and (6) = Several times a day]. The table below show sample question for DV.

Table 2: Demographic Profile

Profile	Percentage (%)	Profile	Percentage (%)
Used SE		Gender	
User	100%	Male	60.5%
		Female	39.5%
Age (years)		Highest education completed	
Below 20	19.2%	Secondary	15.4%
20 to 30	64.3%	Pre-U/ Foundation	15.2%
31 to 40	9.4%	Diploma	15.6%
41 to 50	4.5%	Degree	41.7%
51 to 60	2.0%	Master	5.8%
Above 60 years old	0.60%	PhD	1.1%
		Others	5.2%
Income Level (Per month)		Race	
Below RM1,000	42.7%	Malay	35.7%
RM1,001 to RM2,000	8.6%	Chinese	45.5%
RM2,002 to RM4,000	24.4%	Indian	15.0%
RM4,001 to RM6,000	12.8%	Others	3.8%
RM6,001 to RM8,000	5.8%		
RM8,001 to RM10,000	3.4%		
Above RM10,000	2.3%		
Reasons of Participating		Hindrance from participating	
Pleasure/ Enjoyment	9.7%	Lack of trust on platform	33.2%
Money Saving	26.8%	Lack of efficacy	11.4%
Time saving	20.9%	Lack of legal protection	20.5%
Convenience	27.5%	Lack of governing by government	12.5%
Recognition/ good image	1.9%	Fear of strangers	22.4%
Natural Resources concern	7.4%		
Gain new social interactions	5.8%		
Type of SE application used			
Uber	29.9%		
GrabCar	48.6%		
Airbnb	20.0%		
Others	1.5%		

Reliability Analysis

Table 3: Summary of Reliability Analysis

Variables	Cronbach's Alpha	Number of items
EB	0.750	4
CONV	0.865	4
PSY	0.904	4
PHY	0.801	3

TRU	0.878	3
MEU	0.879	5
MU	0.907	5
BI	0.863	3
AU	0.834	3

Source: Developed for the research

Table 3 illustrates the outcome of a reliability test for each variable. The highest and lowest Cronbach's alpha value belongs to MU and EB at 0.907 and 0.750 respectively. A variable is considered reliable if Cronbach's alpha reaches the minimum threshold of 0.7 (Nunnally & Bernstein, 1994). Thus, all items adapted in the questionnaire for this study are considered reliable. **Pearson Correlation Coefficient Analysis**

Table : Pearson Correlation Coefficient Analysis

Pearson Correlation Coefficients, N=468									
Prob >r under H0: Rho=0									
Variables	EB	CONV	PSY	PHY	TRU	MEU	MU	BI	AU
EB	1								
CONV	0.456	1							
	<.0001								
PSY	-0.090	-0.199	1						
	0.052	<.0001							
PHY	0.230	0.317	-0.041	1					
	<.0001	<.0001	0.377						
TRU	0.340	0.422	-0.207	0.471	1				
	<.0001	<.0001	<.0001	<.0001					
MEU	0.386	0.511	-0.124	0.280	0.485	1			
	<.0001	<.0001	0.007	<.0001	<.0001				
MU	0.350	0.584	-0.121	0.313	0.419	0.626	1		
	<.0001	<.0001	0.009	<.0001	<.0001	<.0001			
BI	0.349	0.460	-0.265	0.316	0.436	0.496	0.583	1	
	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001		
AU	0.189	0.205	0.046	0.082	0.161	0.114	0.159	0.224	1
	<.0001	<.0001	0.326	0.076	0.001	0.014	0.001	<.0001	

Source: Developed for the research

Based on Pearson Correlation Coefficients in Table 4, there are significant and positive relationship between each EB (r=0.349), CONV (r=0.460), TRU (r=0.436), MEU (r=0.496), MU (r= 0.583) with BI. Meanwhile, PHY (r=0.316) and PSY (r=-0.265) have a negative relationship with BI. Among all the correlations between the variables and BI, MEU shows the strongest positive relationship with BI while PHY demonstrates the weakest negative relationship with BI. Multicollinearity problem was not detected as none of the correlation values exceeds 0.90 (Hair et al., 2010).

Simple Linear Regression

Table 5: SLR model summary

Root MSE	1.046	R-Square	0.050
Dependent Mean	2.749	Adjusted R-Square	0.048
Coefficient Variance	38.059		

Source: Developed for the research

As per Table 5, R-Square value is represented by 0.050. BI interprets the 5.04% variation in AU. Insignificant value of R-Square value is justified by the lack of other Independent variable.

Table 6: ANOVA table

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	27.044	27.044	24.710	<.0001
Error	466	509.928	1.094		
Corrected Total	467	536.971			

Source: Developed for the research

From the table 6, the overall F test is significant (F= 24.710, P<0.001), which P is lesser than 0.05 which means that the model as a whole account for a substantial portion of the changes in the dependent variable. Hence the IV can be used to model DV, model fit is achieved.

Multiple Linear Regression

Table 7: MLR model Summary

Root MSE	0.542	R-Square	0.436
Dependent Mean	4.779	Adjusted R-Square	0.428
Coefficient Variance	11.335		

Source: Developed for the research

Table 7 implies that R-Square for the seven IVs is 0.436. This indicates that 43.62% of the changes in BI can be explained by all the IVs which are EB, CONV, PSY, PHY, TRU, MEU and MU.

Table 8: ANOVA table

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	7	104.419	14.917	50.830	<.0001
Error	460	134.987	0.293		
Corrected Total	467	239.406			

Source: Developed for the research

From table 8, the overall F test is significant (F= 50.380, P<.0001), which P is lesser than 0.05 which means that the model as a whole account for a dominant portion of the changes in the dependent variable. Hence at least one of the IVs can be used to model DV, model fit is achieved.

Table 9: MLR analysis

Parameter Estimates						
IVs	Parameter Estimates	t Value	P-value	Standardized Estimates	Tolerance	VIF
Intercept	1.446	5.89	<.0001	0		0
EB	0.077	2.14	0.033	0.086	0.748	1.337
CONV	0.044	0.97	0.335	0.046	0.546	1.832
PSY	-0.120	-4.54	<.0001	-0.164	0.934	1.071
PHY	0.068	1.92	0.056	0.078	0.750	1.334
TRU	0.101	2.37	0.018	0.107	0.601	1.664
MEU	0.129	2.43	0.016	0.117	0.524	1.910
MU	0.370	7.38	<.0001	0.364	0.506	1.978

Source: Developed for the research

Referring to Table 9 multiple regression equation is constructed as:

$$BI = 1.446 + 0.077EB + 0.044CONV - 0.120PSY + 0.068PHY + 0.101TRU + 0.129MEU + 0.370MU$$

PHY is shown to be positive in the MLR equation above as the questions for PHY in the questionnaire distributed are positively coded. Inherently, this implied that PHY and BI are still negatively correlated although the outcome is shown to be positive. CONV has the least significant impact on BI as BI only increase by 0.044 when CONV increased by one unit. MU has the greatest effect on BI as a unit increase in MU will cause BI to increase by 0.370 unit. Furthermore, BI will increase by 0.129 when MEU increased by one unit. Subsequently, for every one unit increase in TRU, BI will rise by 0.101 unit. Moreover, one unit increase in EB will have an impact on BI to rise by 0.077. When there is one unit decrease in PHY, BI will increase by 0.068 unit. Meanwhile, for PSY, a unit increase will cause BI to drop by 0.120 unit. In addition, the multicollinearity problem is not detected amongst IVs as the tolerance value of all IVs are more than 0.1 and variance inflation value are less than 10.

DISCUSSION

In brief, it was supported that PSY had significant negative relationship toward BI in AU of SE whereas EB, TRU, MU and MEU showed that there were significant positive relationships on BI in AU of SE. However, CONV and PHY showed insignificant relationships in sharing economy adoption. Meanwhile, a significant relationship between BI and AU of the sharing economy had been proved. Based on the research result, EB has been proved that it will positively and significantly affect BI in adopting SE. This outcome is corresponding to the past researches by Wells, Campbell, Valacich and Featherman (2010), Wang and Wu (2013), Lin and Huang (2012), and Wang, Liao and Yang (2013). According to Kim, Yoon and Zo (2015), SE adopters have unique consumption preference such as emphasize on high cultural experience which means they prefer to learn and experience new cultures that are different from their own. The consumers who possess that characteristic will choose to involve themselves in SE activities in order to satisfy their curiosity. By referring to the finding from this research, the benefit to get new knowledge from exploring sharing economy application would absolutely inspire the participation in SE.

CONV is proved to have an insignificant relationship with BI in adopting SE. This result contradicts with past studies of Yang and Lin (2017) which discussed the determinants of intention in continue to use social network, location-based and mobile technologies services, and Joo (2017) that investigated on the intentions to use car sharing services. This may be due to different context of study and sampling locations. SE activities are not available in some of the rural areas in Malaysia which can hinder the convenience that promoted by SE. From another point of view, SE applications have never missed the role of convenience. Therefore, consumers may no longer perceive convenience as a critical factor when they want to involve in SE.

The research findings show that PSY has a significant negative impact on BI toward usage of SE application, which is consistent to past studies investigated by Lee (2018), Xie (2017) and Hamoodi (2016). The result signified that if traveler perceived a high level of PSY, it would lower down the possibility of traveler involves in SE services as their choice for transportation and accommodation (Lee, 2018). It implied that PSY such as a feeling of troublesome, unwanted anxiety, psychological discomfort and unnecessary tension in using SE would restrict users from using SE (Lee, 2018). Moreover, poor interaction experience with SE may hinder traveler's peace of mind from continuing considering SE platform as their choices as well.

In this research, PHY is found to have an insignificant relationship with BI in adopting SE. This result does not align with past studies (Bhukya & Singh, 2015; Beh, Chong, Yu & Wong, 2015; Ruangkanjanases & Techapoolphol, 2018). According to Hall & Royles (2016), PHY is minimal as information such as name, photo, car plate and rating of the driver is being provided after the driver accepts the user's hail to pick the user up, which the user can match the information before the hopping into the car. Users do have the right to cancel ride anytime if the information does not tie. Another point of view by Hall & Royles (2016) is that, the driver could not recklessly take a different route as the whole journey can be monitored through the mobile phone app, any huge discrepancy in the route will be noticed by the user immediately. Besides, TRU is reported to have a positive and significant relationship with BI in participating SE which goes along with the prior studies (Lee et al., 2018; Lee & Song, 2013 ; Mou, Shin & Cohen, 2016). Meanwhile, Kim et al. (2009) had proven that consumers will refuse to adopt SE if they do not have TRU towards the SE application. Additionally, based on Lee, Chan, Balaji & Chong (2018), trust reflects the users' readiness to take the risks to fulfill their needs. Therefore, trust indeed plays a pivotal role in ascertaining their willingness to engage in SE as participating in SE often involves different potential risks (Lee, 2018).

Based on the findings, MEU was found to be significantly and positively associated with BI in adopting SE application. Such results corresponded with the past studies done by Teo, Tan, Ooi & Lin (2015) on mobile payment in Malaysia; Rahman and Sloan (2017) related to mobile commerce in Bangladesh and Dutot (2015) on NFC MP in France which illustrated the significant and positive relationship between MEU and BI. This was mainly because consumers will tend to adopt the SE application only when they feel that such application is user friendly and easy to use (Ooi & Tan, 2016). Meanwhile, it might be a barrier for those who do not have any knowledge and experience with it to adapt to such innovation (Fleischer & Wahlin, 2016).

The research outcome implied that MU and BI have a significant and positive relationship in SE application adoption and it was found that MU has the greatest impact on BI. Such a result was aligned with the past studies conducted by Liébana-Cabanillas, Sánchez-Fernández, & Muñoz-Leiva (2014), Tan, Ooi, Chong and Hew (2014), Teo et al. (2015) and Hubert, Blut, Brock, Backhauset & Eberhardt (2017). According to the data analysis, the mobile usefulness of the SE application such as improving travel experience, enhancing effectiveness and efficiency of travel would definitely encourage the usage of SE application. According to the research findings, it suggested that BI has a positive and significant relationship to SE as how past studies (Faqih & Jaradat, 2015; Han, Nguyen, & Nguyen, 2016; Vasileiadis, 2014) implied. An individual's behavioral intention is followed by actual usage (Szajna, 1996). In the past, many researches (Szajna, 1996; Venkatesh & Davis, 2000) have identified that BI is the major determinant of actual use using TAM model as a foundation of predicting individual's acceptance towards a particular technology. Furthermore, low value 5.04% R-squared of BI to AU can be explained by how the model is constructed. According to Cohen (1988), 26% of R-squared value is considered substantial, 13% is moderate and 2% is weak. Therefore, the result of R-squared value in this study is acceptable. Also, the low R-squared may be due to the small number of IVs in predicting DV, in this study, BI is the only IV that predicts the AU. Hence, it indicates that BI is only one small factor that affects AU, there are many other factors that can contribute toward AU as well (Blais, Gidengil & Nevitte, 2004).

IMPLICATIONS

In the view of managerial implications, SE providers should utilize the factor of **EB** in which they may try to provide innovative and unique services in order to attract more consumers. For instance, they may create seasonal specials and particular one-off events, introduce different themes in a limited time period and

adapt the latest payment method such as face scan payment technology. Next, to remove **PSY**, SE providers should adjust their strategies tailored to the consumers' emotional needs and disclose their privacy and security assurances or service guarantee policies in order to enhance consumers' confidence. Apart from that, the government may require the SE providers to register themselves as a verified legal business and enforce regulations to protect the sake of SE application users. In addition, consumers' **TRU** in SE context can be established by improving both system quality and information quality, providing high secured online transaction services, and giving relevant training to the service providers (the host or driver). Moreover, application developers are advised to simplify the registration, searching, booking, checking, and transaction process in order to enhance **MEU** of SE applications. Also, the interface design should also be improved by using simple and understandable words with difference languages. Furthermore, to improve **MU**, SE providers should ensure that SE users can easily get access to service providers for booking and communicating details effectively besides making payment in an efficient manner. Since MU is the most significant positive factor for BI in adopting SE, the SE marketers are suggested to promote their business by advertising on the usefulness of SE applications. Finally, for the factor of **BI**, SE providers should investigate on which group of the consumer may have a higher probability to participate in SE and target those potential consumers by advertising their services to them.

Apart from that, there are several **theoretical Implications** derived from this research. This study provides a more comprehensive conceptual framework for future research as it integrated MTAM and extended valence framework in addressing the BI and the SE adoption in the travel industry. Furthermore, this study further modifies the components of extended valence framework such as EB and CONV in perceived benefit, PHY and PSY in perceived risk, and trust that may affect the SE adoption. This study reveals that there are significant relationships between EB, PSY, TRU, MEU, MU, and BI which are useful for future researchers to conduct a study in a relevant context. In contradict with past researches, the result showed that CONV and PHY have no significant relationships with BI in adopting SE in Malaysia. Researchers may reconsider to keep or remove the IVs when modifying the extended valence framework. Besides, the results of this research indicated that 6-point Likert scale was appropriate to be used as it passed the acceptable threshold of the reliability test as well. Therefore, the 6-point Likert scale may be considered by future researchers in developing their conceptual framework.

LIMITATIONS AND RECOMMENDATIONS

There were several criticisms that had been discovered and need to be taken into consideration. Firstly, a cross-sectional study had been conducted to gather data at a single point of time. Thus, to enhance data accuracy and validity, it is suggested to conduct a longitudinal study which involves continuous study in surveying same variables over a considerably longer time frame (Caruana, Roman, Sanchez, & Solli, 2015). Besides, non-users of SE are not included as part of the target respondent in this research. Hence, future researchers are recommended to include both users and non-users of SE as target respondents to generate a more precise result. Furthermore, inaccurate or incomplete data collected due to unconscientious responses and missing information found in the survey questionnaire had lower down the reliability and validity of data. It would be more efficient to conduct survey questionnaire by using the method of interviewing the respondent and apply open-ended question over close-ended question. Lastly, East Malaysia had been excluded as a targeted sampling location in this research. Therefore, future studies are suggested to include East as a sampling location to ensure data collected are reflecting BI of users and non-users in Malaysia.

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APPENDIX

Variables	Sample Question	Sources
Epistemic Benefits	<ul style="list-style-type: none"> -If I heard about new sharing economy services, I would look for ways to experiment with it. -I always look forward to a new sharing economy application so as I can get new knowledge about new technologies and services. -Among my peers, I am usually the first to explore new sharing economy application. -In general, I am not hesitant to try out new sharing economy application. 	Al-Debei and Al-Lozi (2014)
Convenience	<ul style="list-style-type: none"> - Using sharing economy application is efficient for me at anytime and anyplace. - Using sharing economy application is convenient at anytime and anyplace. - Using sharing economy application makes my life easier. - Using sharing economy application fits in with the pace of my life. 	Yang and Lin (2017)
Psychological Risk	<ul style="list-style-type: none"> - The thought of choosing sharing economy application makes me feel psychologically uncomfortable. - The thought of choosing sharing economy application gives me a feeling of unwanted anxiety. - The thought of choosing sharing economy application causes me to experience unnecessary tension. - I would worry a lot when choosing sharing economy application. 	Lee (2018)
Physical Risk	<ul style="list-style-type: none"> -Sharing economy application provides me booking transparency information. For example; driver's name, house owner's name and driver's or house owner's contact number, etc. - I feel safe when using the sharing economy application because everything is recorded systematically - I feel safe and secured when using sharing economy application. 	Ruangkanjanases and Techapoolphol (2018)
Trust	<ul style="list-style-type: none"> -The sharing economy application is trustworthy. -The sharing economy application is honest in its dealings with me. -The sharing economy application keeps its commitments to its users. 	Cheung et al. (2015)
Mobile Ease of Use	<ul style="list-style-type: none"> - Learning to operate sharing economy would be easy for me. -My interaction with sharing economy application would be clear and understandable. -I would find sharing economy application to be flexible to interact with. -It would be easy for me to become skillful at using sharing economy application. -I would find sharing economy application easy to use. 	Ooi and Tan (2016)
Mobile Usefulness	<ul style="list-style-type: none"> -Using sharing economy application would enable me to travel to destination/find accommodation more quickly more quickly. -Using sharing economy application would improve my travel experience for either transportation or accommodation services. - Using sharing economy application would enhance my effectiveness on travel for either transportation or accommodation. -Using sharing economy application would make me easier to travel from one destination to another destination / finding accommodation. - I would find sharing economy application useful in my travel experience for either transportation or accommodation. 	Ooi and Tan (2016)

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Behavioral Intention	<ul style="list-style-type: none"> -Assuming I had access to sharing economy application, I intend to use it. -Given that I had access to sharing economy application, I predict that I would use it. -I plan to use sharing economy application in the next few months. 	Faqih and Jaradat (2015)
Actual Usage of Sharing Economy	<ul style="list-style-type: none"> -How often do you use sharing economy application in accommodation? -How often do you use sharing economy application in transportation? -How often do you use sharing economy for other services? 	Faqih and Jaradat (2015)

PRICE DYNAMICS AND FORECASTING OF CRYPTOCURRENCY

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Abstract

In the recent years, cryptocurrencies have been seen as a hot topic of conversation which stemmed from their unique characteristics. On the one hand, some choose to believe that the idea of a decentralized currency and the underlying technology supporting it might usher in a new era of cashless payment. Meanwhile, others may consider it a speculative investment vehicle. The goal of this study is to educate the public on the basic principles of cryptocurrencies as well as to derive a forecasting model for each of the 3 major cryptocurrencies in circulation, namely Bitcoin, Ethereum and Ripple. Through this study, the proposed ARIMA model was able to accurately forecast the patterns of the exchange rates as indicated by the Root Mean Squared Error (RMSE), Mean Absolute Error (MAE), Mean Absolute Percentage Error (MAPE) and Theil Inequality Coefficient (U-STAT) for each of the respective coins.

Keywords: ARIMA, Bitcoin, Ethereum, Forecasting, Ripple

INTRODUCTION

A cryptocurrency is a digital asset designed to work as a medium of exchange using cryptography to secure the transactions and to control the creation of additional units of the currency. Cryptocurrencies in general have 3 key elements, with that being decentralised, digital and blockchain encrypted. Decentralized cryptocurrencies are produced entirely by the cryptocurrency system (Andy, 2011).

The blockchain technology used by cryptocurrencies, is an open distributed ledger that records transactions made by users within each specific cryptocurrency ecosystem. Blockchain is not any conventional digital ledger. The underlying technology that powers the blockchain allows it to have an interlinked-encryption. This means that transactions previously added into the ledger cannot be tampered with unless other transactions within that same block are accessed or tampered with as well. Blockchain also solves the double-spending problem and does not require a trusted third party (David, 2015; Narayanan, Bonneau, Felten, Miller & Goldfeder, 2016).

The nature of cryptocurrencies are more often than not considered as a potential replacement for fiat money as no central authority is needed to verify the transactions. As such there is full autonomy when processing their payments. In the centralized banking system, Federal Reserve System or governments control the supply of currency. As such, the nature of cryptocurrencies and the people who choose to adopt them are in one form or another choosing to challenge the current financial system. Thus, it is not easy to consider cryptocurrencies as a substitute for fiat money because government regulators and financial mediums do not recognise them as a form of legal tender (Narayanan et al., 2016). On the other hand, there are those who view cryptocurrencies as a form of investment vehicle.

In times of volatility, the prices of cryptocurrencies fluctuate erratically. The ARIMA forecasting method is used to mitigate investor risk. Recent studies do not provide an accurate enough forecast as they utilize

weekly or monthly data (Bakar & Rosbi, 2017). The study focuses on deriving a daily forecasting model for each of the 3 major cryptocurrencies. Based purely on trade volume and market capitalisation, the 3 major cryptocurrencies as of today are Bitcoin, Ethereum and Ripple with over \$100 billion in total combined market capitalisation. Just these 3 cryptocurrencies alone are able to make up for majority of the total market capitalisation.

LITERATURE REVIEW

Structure of Cryptocurrencies

The structure of Cryptocurrencies and the traditional currency system are not identical in terms of its system structure. The traditional electronic payment system requires a central authority (bank) to verify the legitimacy of the transaction which acts as a bookkeeper between the traders. However, for Cryptocurrencies, involves electronic accounting system that keeps tracks of the digital currency transactions. Thus, there is no central authority responsible to verify the transaction legitimacy, maintaining the public ledger, and the code used to implement the ledger system (Kumar and Smith, 2017). The correlation analysis can be conducted in various ways, however the most common and straightforward approach is to conduct it using the Pearson's Correlation Coefficient test. According to Hall (2015), the Pearson's Correlation Coefficient is one of the most often used for its accuracy in finding the covariance of two variables from two separate sets of data. On the other hand, Sedgwick (2012) also mentioned that it provides a concise and simplified overview of the relationship between two or more separate variables.

Correlation Analysis

Based on past studies, the correlation analysis has been done to test the relationship between cryptocurrencies against other market commodities such as company stock prices, gold and various other investable market commodities. A comprehensive study done by Corbet, Meegan, Larkin, Lucey and Yarovaya (2018) on the subject which sought to find the correlation between cryptocurrencies and various other financial assets which include MSC GSCI Total Returns Index (commodities); US Broad Exchange Rate (US Dollar/FX Market); the S&P 500 and COMEX (Gold). The results from the study show that there is no relationship between cryptocurrencies, market index funds and other commodities. However, they did note that there was a significant positive correlation between the 3 cryptocurrencies they had researched in the paper. In another study done by Klein, Thu and Walther (2018), they conducted their analysis using a variation of the ARCH model to study the correlation between Bitcoin prices and Gold prices. Their findings were consistent with the study conducted by Corbet et al (2018) as well where cryptocurrencies have a strong negative correlation with other financial market instruments. However, the study failed to highlight the correlation between one or more cryptocurrencies. According to Rapier (2018), there is high correlation between the different cryptocurrencies. Bitcoin, Ripple, and Ethereum have very similar price fluctuations – they rise and fall together. Bovaird (2017) had analyze the cryptocurrency price correlation. While quarterly price data for BTC/ETH (ether) shows some modest correlations as high as 0.57, looking at seven-day averages paints a more vivid picture. When viewed through this more short-term lens, correlations have reached as much as 0.98 during some periods. In the seven-day period 1st–7th August, 2016, the BTC/ETH price relationship remained above 0.90.

Moving on, similar patterns can also be sighted in Gandal and Halaburda's (2016) paper written on testing the correlation between multiple cryptocurrencies with high market capitalisation such as Bitcoin, Litecoin and many more. Their findings had also noted that there was a strong positive relationship between the movements of the various tested cryptocurrencies. Prior to this paper, Gandal and Halaburda (2014) had also written on the possible competition between various emerging cryptocurrencies against Bitcoin in 2014. However, their findings had also shown that there was a positive correlation in earnings and movement of each of the studied coins. Ciaian, Rajcaniova and Kancs (2017) found that when studying the interrelationship between bitcoin and 16 other alternative coins they found that in the short-run there was a strong significant correlation between the studied coins however were unable to fully confirm such patterns in the long run. Their period of study was taken from 2013-2016 using daily data.

Viability of ARIMA in Forecasting the Stock Market & Commodities

Cryptocurrencies are in essence similar to stocks, in which they are traded in an open online market. The only difference is that one is government regulated and the other is not. In the past, forecasting models

have aided investors in the stock market to make more rational decisions on when to trade based on models created using econometric and statistical methods.

Multiple studies conducted previously on the subject matter had proven the viability of the linear model in predicting the future direction of various stock markets in the world. One study by Adebisi, Adewumi & Ayo (2014) revealed that the ARIMA model was indeed a viable model to predict future prices in the US stock market. Moreover, Banerjee (2014) conducted a study on forecasting the future prices of the SENSEX stock exchange. In that particular study, the author opted to use 6 years-worth of monthly data to predict the accuracy of the proposed ARIMA model. The author found that the proposed model of ARIMA (1,0,1) was most accurate in predicting the future monthly prices of the Indian stock exchange. On the other hand, Merh, Saxena & Pardasani (2010) conducted their study using the ARIMA method as well. In their study they opted for 5 years monthly data identifying the ARIMA models for various stock and commodities market such which include SENSEX, BSE IT, BSE Oil & Gas, BSE 100 and S&P CNX Nifty. They found that these respective markets had their own significant models which could predict the future prices using said ARIMA method.

On the other hand, Kriechbaumer, Angus, Parsons & Casado (2014) wrote a paper pertaining to the accuracy and viability of the ARIMA model in predicting the future prices of metals commodity market. The monthly data for various metals such as copper, lead, zinc and aluminium was obtained from the London Stock Exchange to conduct the study. In their paper they found that ARIMA as a stand-alone forecasting method was able to provide a linear prediction model.

Viability of ARIMA in Forecasting Future Cryptocurrency Prices

A study from Bakar & Rosbi (2017) found that the ARIMA was a reliable method in forecasting the future price of Bitcoin. However, they also noted that since Bitcoin is considered a high volatility market, further research and considerations should be taken into account as their proposed prediction model was not as accurate when market volatility was considered a possible variable.

Moreover, McNally (2016) and Sahin (2018) both conducted their studies using the Box-Jenkins ARIMA method in predicting the future prices of cryptocurrencies. Both their studies were able to yield satisfactory results while using their proposed methods in forecasting. However, the limitations of their studies are due to using monthly or yearly data set as their time series data set. As such the study does not provide a clear picture of the full potential of the Box-Jenkins Method.

On the other hand, Karakoyun & Cibikiken (2018) provided the study with an insightful view on the use of the Box-Jenkins Method. Their study concluded that the ARIMA model used was able to predict the daily prices of Bitcoin one month into the future. However, the study was conducted only from the period of 2013 till 2017. As such, the limitations is that the proposed model may not be the best fitting one as there is still can be room for improvement. One way improve upon their proposed study is by increasing the sample size starting from the inception of the studied cryptocurrency.

RESEARCH METHODOLOGY

Methodology

The process begins with data selection process then followed by a simple correlation analysis to identify trends associated with the 3 listed cryptocurrencies. Trend analysis also applied on the three cryptos to identify the possibility of seasonality that causes the data to be biased at level or 1st differenced. The forecasting process will be conducted using the Box-Jenkins autoregressive integrated moving average (ARIMA) method using three different ARIMA models derived from model identification.

Data selection process

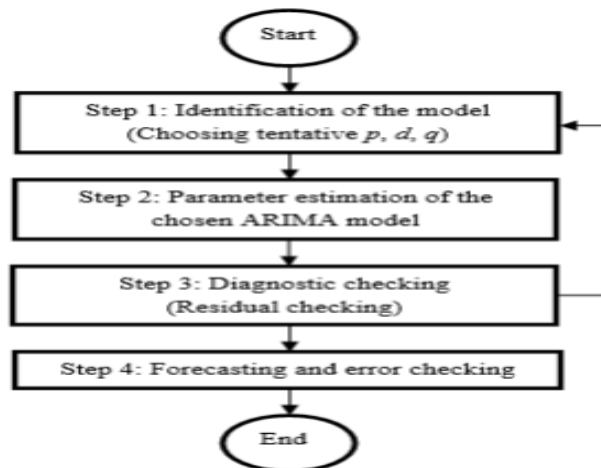
Daily data from inception until 6th October 2018 were extracted from Yahoo Finance for Bitcoin, Ethereum and Ripple in USD. The inception dates of Bitcoin, Ethereum and Ripple are 18th July 2010, 6th August 2015, and 21st January 2015 respectively.

Correlation Analysis

Pearson's correlation coefficient test is conducted to identify the 3 cryptocurrencies pattern using E-views 10. The goal of this test is to test whether there is a negative or positive relationship between the 3 crypto where negative relation shows that one currency price fluctuate a different direction than its other counterparts. Inversely, a positive relationship signifies the 3 markets patterns moves in tandem. The interpretation for this section will be as follows: Strong Negative Correlation (0-0.2); Moderate Negative Correlation (0.21-0.4); Weak Positive Correlation (0.41-0.6); Moderate Positive Correlation (0.61-0.8); and Strong Positive Correlation (0.81-1.0).

Forecasting Procedure

Figure 1: Box-Jenkins Forecasting Methodology



Adapted from: Gujarati, D. (2003). Basic Econometrics. NY: McGraw-Hill, Inc

Box-Jenkins Methodology of autoregressive integrated moving average (ARIMA) model is utilized as shown above. First would be to specify and identify each particular category of an ARIMA model (p,d,q). The AR term (p) and MA term (q) can be obtained by referring to the Partial Autocorrelation Factor (PAC) and Autocorrelation Factor (AC) respectively when performing Seasonality test/Correlogram test. The integration of order term (d) can be obtained by referencing the differencing result performed from the unit root test. After that diagnostic testing is conducted to test the adequacy and closeness of fit of the model to the data, and once the appropriate model has been found, it is used to forecast the time series and to develop confidence intervals that measure the uncertainty associated with the forecasts (Box & Jenkins, 1970; Makridakis & Hibon, 1997; Makridakis, Wheelright & Hyndman, 1998)

Unit Root Test

Time series data are generally non-stationary with a non-constant mean and variance. As such, the data is classified as unit root. This test helps in identifying certain underlying features that are left uncaptured by the non-stationary nature of certain time series data sets. Moreover, unit root test also helps in preventing fluctuations and irregularities from occurring when performing tests in the following section. Augmented Dicky-Fuller (ADF) test were used to identify which differencing level would be stationary (Dickey and Fuller, 1981). Using this step, we are able to identify the integrated (I or d) parameter for the ARIMA model.

Correlogram

There are 3 possible level of differencing to achieve a stationary result for the time series data set. The 3 levels of differencing are at level (original data), first difference and second difference. The way this study aims to identify the suitable level of differencing is by referring to the autocorrelation function (ACF) plot in which case using Eviews, can be plotted using the Correlogram function. One general rule of thumb when identifying the correct amount of differencing is by identifying the lowest order of differencing that yields a time series which fluctuates around a well-defined mean value and whose ACF plot decays rapidly to zero.

Taking the previous point into account, there is also a problem with over differencing. According to Nau (2018), time series data will always show strong positive autocorrelation at level differencing. However, after applying one or two levels of differencing, the ACF of the time series will reduce. Over differencing occurs when the ACF of lag-1 plunges too far below -0.5 or beyond. In order to avoid this, we will first have to identify if the lag-1 variable of the ACF at the first level of differencing is still positive before deciding to apply another level of differencing. Once the level of differencing has been identified, the study then moves on to identifying the AR and MA variables for the equation.

Forecasting

According to Makridakis et al(1998), Their study mentioned that the validity and forecasting power of a predictive model should be assessed based on 4 key principles. As such, the study's Autoregressive Integrated Moving Average model (ARIMA) will be made in terms of their estimation accuracy based on the Root Mean Squared Error (RMSE), the Mean Absolute Error (MAE), the Mean Absolute Percent Error (MAPE) and Theil's Inequality Coefficients (U-STAT) criteria. Performance of the model is measured by the validity of its estimate on the basis of its estimation and forecasting power.

The RMSE captures the deviation between the actual values and the forecasted values in the model and the MAE is the average deviation of all the calculated RMSE. On the other hand, the MAPE is used as an indicator to show the percentage in-accuracy of the model where the maximum being 100%. And lastly the U-Theil's coefficient is the measurement of best fit of the proposed forecasting model (Studenmund, 2017; Gujarati, 2003)

In the ex-post simulation, the RMSE of all the endogenous variables are less than one percent and the values of MAE are all small. The values of the Theil's inequality coefficient U are all nearly zero which is that the forecasting performance of the estimated model is satisfactory. MAE, MAPE and RMSE can range from 0 to ∞. As such lower values signify a more accurate predictive model (Studenmund, 2017; Gujarati, 2003). The formulas are as below:

$$\begin{aligned}
 \text{RMSE} &= \sqrt{\frac{\text{ESS}}{n}} & \text{MAE} &= \frac{\sum_{i=1}^n |Y_i - \hat{Y}_i|}{n} \\
 \text{MAPE} &= \frac{\sum_{i=1}^n \left| \frac{Y_i - \hat{Y}_i}{Y_i} \right|}{n} \times 100\% & \text{U-STAT} &= \frac{\text{RMSE}}{\sqrt{\sum_{i=1}^n \hat{Y}_i^2 / n + \sum_{i=1}^n Y_i^2 / n}}
 \end{aligned}$$

DATA ANALYSIS

Identification of the model

Table 1: Identifying the level of differencing

	Level			2 nd Difference		
		T stat	Prob.*		T stat	Prob.*
Bitcoin	ADF test statistic	-1.86	0.3536	ADF test statistic	-23.73	0.0000
	Test Critical Values			Test Critical Values		
	1% level	-3.43		1% level	-3.43	
	5% level	-2.86		5% level	-2.86	
	10%level	-2.57		10%level	-2.57	
Ethereum	ADF test statistic	-2.14	0.226	ADF test statistic	-17.57	0.0000

	Test Critical Values 1% level 5% level 10%level	-3.43 -2.86 -2.57		Test Critical Values 1% level 5% level 10%level	-3.43 -2.86 -2.57	
Ripple	ADF test statistic	-3.18	0.0213	ADF test statistic	-14.5	0.0000
	Test Critical Values 1% level 5% level 10%level	-3.43 -2.86 -2.57		Test Critical Values 1% level 5% level 10%level	-3.43 -2.86 -2.57	

Based on the ADF unit test summary table above, the level data of the 3 cryptocurrencies has a unit root/not stationary hence the t-stats values are more than the test critical values at 1%, 5%, and 10% level. Whereas, 2nd difference has no unit root/stationary where the t-stats values are less than the critical values.

Table 2: Identifying the ARMA variables

Date	Cryptocurrency	p,d,q
18/7/2010to 6/10/2018	Bitcoin	4,2,5
6/8/2015 to 6/10/2018	Ethereum	5,2,1
21/1/2015 to 6/10/2018	Ripple	4,2,1

For this part of the study, the correlogram statistics is used to identify the appropriate number of autoregressive and moving average variables. From the correlogram testing the study identified the best models for Bitcoin, Ethereum and Ripple as (4,2,5), (5,2,1), (4,2,1) respectively.

Table 3: Model Accuracy and Testing

Cryptocurrency	Forecast Sample	RSME	MAE	MAPE	U-Thiel
Bitcoin	6/9/2018 to 6/10/2018	188.13	161.92	2.521	0.014
Ethereum	6/9/2018 to 6/10/2018	18.96	14.51	6.988	0.043
Ripple	6/9/2018 to 6/10/2018	0.19	0.146	28.06	0.267

Based on the model accuracy table above, Ripple has the most accurate model followed by Ethereum and Bitcoin. The accuracy is based on the RMSE, MAE, and U-Thiel of the model, and it shows that Ripple has the lowest RMSE of 0.011, and the highest RMSE is Bitcoin 188.13. The RMSE for Ethereum is 18.96. The MAE for Bitcoin and Ethereum depicts 161.92 and 14.51 which shows a large positive percentage, the forecasting method is consistently underestimating the data meaning the forecasting method for Bitcoin and Ethereum is considered biased. On the other hand, MAE Ripple is and 0.105, which means the forecasting approach for Ripple is unbiased compared to Bitcoin and Ethereum due to Ripple MAE percentage is closer to 0 and small. Aside from that, ARIMA(4,2,5) for Bitcoin can predict prices approximately 2.52% error, ARIMA(5,2,1) for Ethereum can predict prices approximately 6.98% error, and ARIMA(4,2,1) for Ripple can predict prices approximately 30% error. The U-Thiel for Bitcoin, Ethereum and Ripple are 0.014, 0.043, and 0.197 respectively shows the numbers falls below ($U < 1$). Thus, all three of the model predictive performance is fit.

CONCLUSION AND DISCUSSION

To summarize the results, this study depicted a strong positive correlation in all the 3 major cryptocurrency using the Pearson's correlation method. Secondly, the study found that second level of differencing is viable to apply into forecasting the 3 cryptocurrencies. Thirdly, the ARIMA models for Bitcoin, Ethereum and Ripple (4,2,5), (4,2,1) and (5,2,1) respectively. Lastly, the models are able to accurately predict with an average of 89% accuracy.

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ECONOMIC IMPLICATIONS OF A PATHOGEN INFECTION OF THE MALAYSIAN OIL PALM PLANTATIONS: A PARTIAL EQUILIBRIUM MODEL APPROACH

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Abstract

Oil palm is an important crop that contributes significantly to the economic and social development of Malaysia and contributes 39% of the global oil palm production. However, the effect of pathogens especially Basal Stem Rot (BSR) poses a significant threat to the oil palm. Lack of effective understanding of the economic implications of this dreaded disease has a considerable effect on its prevention. Motivated by this development, a partial equilibrium model that represents the Malaysian agriculture allows the measure of economic damage caused by a pathogen. The analysis indicates that even a slow-moving pathogen can harm the oil palm in terms of reduced social welfare, higher agricultural prices, and agricultural employment, and exacerbate deforestation. A one-time pathogen eradication fee helps recover the oil palm in terms of social welfare, agricultural prices, and employment but not to the base levels with the absence of a pathogen.

Keywords: Biosecurity; biological threat, oil palm; partial equilibrium model

INTRODUCTION

Oil palm is an important economic crop that contributes significantly to the global oil consumption. The high demand for palm oil due to its economic importance has led to the continued expansion of oil palm plantations in Malaysia and Indonesia. A total of 19.92 million tons of palm oil was produced from 5.74 million hectares of oil palm plantations in Malaysia in 2017 (Economics & Industry Development Division, 2017). In 2016, Malaysia accounted for 39% of world palm oil production and was the second largest exporter of palm oil (Economics & Industry Development Division, 2017). Malaysia earned an estimated RM78 billion in export revenue from oil palm in 2017 (Kushairi & Nambiappan, 2018).

The contribution of oil palm to the economic growth of countries like Malaysia is vulnerable to infectious pathogens. For example, Basal Stem Rot (BSR), the most prevalent disease in oil palm trees causes sizeable economic damages by reducing crop yields and killing the oil palm trees. When the infection first appeared in Malaysia, BSR affected the mature palm trees with ages exceeding 30 years but currently infects young palm trees of 1-2 years old (Azahar, Mustapha, Mazliham, & Boursier, 2011; Wong, Bong, & Idris, 2012). The BSR is caused by the fungus, *Ganoderma boninense*. According to Parthiban et al. (2016), *Ganoderma* disease has infected 151,208 hectares of Malaysian oil palms with an estimated loss of RM1.3 billion in 2009. One of the greatest obstacles in managing BSR is lack of effective understanding of the pathogen's spread and its economic implications (Azahar, Boursier, & Seman, 2008).

The destructive nature of dreaded diseases affecting oil palm yields coupled with the need to provide enhanced understanding has attracted considerable attention from researchers who are striving to understand the nature, causes, and methods to mitigate diseases. BSR poses the greatest threat to oil palm production in South East Asia (Rees, Flood, Hasan, Potter, & Cooper, 2009). According to Parthiban et al. (2016), oil palm plantation owners should worry about incurring considerable financial losses when 10% of the oil palm stands become infected.

Two factors have contributed to the BSRs infection in oil palm plantations. For the first factor, studies have connected the widespread distribution of BRS in coastal areas in Malaysia (Govender, Wong, Maziah, & Idris, 2015; Parthiban et al., 2016). Conversion of previously coconuts stands to oil palm has attributed to the high infection rate in oil palm plantation. BSR could infect the oil palm tree via root contact of infected wood following lignin degradation (Govender et al., 2015). For the second factor, several studies have linked the relationship

between BSR and palm tree density. For instance, Azahar et al. (2011) studied three different plantations with varying density and concluded that the spread of BSR was random across the three sampled plots. Contrary to this finding, Kamu, Chong, Seman, and Ho (2015) revealed the epidemic is not random and concluded that the spread of BSR occurs through root contact. Thus, the spreads of BSR is independent of the palm tree density.

In addition, Idris, Kushairi, Ismail, and Ariffin (2004) employed a geographical information system (GIS) to examine the spatial patterns of BSR in oil palm plantation in Miri and Kuching, Sarawak. The study included oil palms ranging from 12 to 24 years to gain information about the temporal, spatial, and hotspots of the disease. The initial infection started from 0.12% to 0.27% at 12 years and grew from 9.74% to 18.63% by 24 years. Consequently, the disease spread started randomly (12-18 years after planting) and, after that, spread through root-to-root contact by affecting nearby palm trees.

Assis, Chong, Idris, and Ho (2016) investigated the economic losses from BSR using regressions on three commercial oil palm sites. The study revealed that the pathogen infection could quickly grow and induce a 43.32% yield loss. In a related study, Roslan and Idris (2012) equally assessed revenue loss due to BSR and determined that the disease may lead to yield losses between 0.04 and 4.34 tons per hectare on oil palm with ages between 10 and 22 years respectively. On the hand, Kalidas (2012) investigated the roots of the pathogen's infection in oil palms and concluded pest migration carried the infection to new areas. The study determined that the yield loss of oil palms due to pests' infection ranged between 20 and 30% after the attack had begun. Furthermore, Van de Lande (1993) explored the epidemiology of BSR in oil palms in Suriname and attributed the disease spread to the wind influence and replanting approaches. The study further indicated that a pathogen caused more than 50% yield loss. At last, Chong, Dayou, and Alexander (2017) assessed how to detect and control a pathogen in an oil palm plantation. The study revealed that infection and spread of pathogen are associated with in-contact roots with neighboring diseased oil palms and through airborne fungus spores.

Even though several studies estimated the economic impacts of pathogens, none of these studies comprehensively assessed and forecasted long-term economic implications of a pathogen on oil palm plantations. The present study, therefore, fills this research gap by exploring the economic implications of pathogens based on a partial equilibrium model. In contrast to previous studies as indicated in the literature review, the model estimates a variety of economic indicators and comprehensively forecasts the long-term effects of a pathogen's spread on the oil palm plantations. The remaining sections of the paper have the following structure. The first section discusses the methodology while results and discussion are presented in the third section. Finally, the last section concludes the paper.

METHODOLOGY

A Partial Equilibrium Model of the Malaysian Agriculture

The study's objective is to apply a partial equilibrium model to determine a pathogen's spread across oil palm plantations. The study does not specify Basal Stem Rot (BSR) per se, but the approach applies to any pathogen or country's agriculture. The model, the Malaysian Agriculture and Plantation Greenhouse Gas Equilibrium Model (MAPGEM), incorporates a pathogen's spread rate, eradication costs, and forecasts equilibrium prices and quantities for Malaysia's largest agricultural commodities, such as oil palm, rubber, cocoa, coconut, banana, durian, kenaf, mango, papaya, pepper, pineapple, rambutan, and rice.

MAPGEM includes land use changes via Equations (1) through (4). Equation (1) allows the conversion of cocoa, coconut, rainforest, and rubber plantations to oil palm via the convert (CN). Meanwhile, $d(t)$ imposes a decreasing rate of land conversion. Land transfers (LT) places an upper limit on land conversion with plantation type (p), state (s), and time (t). Equation (2) represents the newly planted oil palms from land transfers. The model also replants old oil palms with new trees via replant trees (RT). Finally, landowners can pay a one-time fee to eradicate the pathogen and recover the land (RL). The RL utilizes an indicator function, $\varphi()$, to turn on land recovery. Equation (3) represent five-year oil palm trees inventory (TI). The indicator function loads the tree inventory in 2015, and the equation becomes dynamic for 2020 and later. Equation (4) comprises the 10-year oil palms and older. It retains the land from the previous period and adds five-year-old oil palms from the last period. It also deducts replanted trees (RT) and

contaminated land (CL). In equation (5), it is assumed the oil palm trees' age are uniformly distributed, and 1/30 of the land is cleared and replanted to maintain high fresh fruit bunch (FFB) yields, the fruits from the oil palm.

$$CN_{p,s,t} = d(t)LT_{p,s} \quad \forall p, s, t \quad (1)$$

$$H_{oil\ palm\ 0y,s,t} = \sum_p CN_{p,s,t} + RT_{s,t} + RL_{s,t} \cdot \phi(on_1 = 1) \quad \forall s, t \quad (2)$$

$$H_{oil\ palm\ 5y,s,t} = H_{oil\ palm\ 0y,s,t-1} \cdot \phi(t > 1) + TI_{oil\ palm\ 5y,s} \cdot \phi(t = 1) \quad \forall s, t \quad (3)$$

$$H_{oil\ palm\ 10y,s,t} = H_{oil\ palm\ 10y,s,t-1} \cdot \phi(t > 1) + H_{oil\ palm\ 5y,s,t-1} \cdot \phi(t > 1) - RT_{s,t} - CL_{s,t} + TI_{s,oil\ palm\ 10y,s} \cdot \phi(t = 1) \quad \forall s, t \quad (4)$$

$$RT_{s,t} = \frac{1}{30} H_{oil\ palm\ 10y,s,t} \quad \forall s, t \quad (5)$$

Equation (6) holds the contaminated land (CL) from the mature oil palms. Farmers can pay a one-time eradication fee to recovery land (RL) with the indicator function, $\phi()$ as an on-off switch. Meanwhile, Equation (7) ensures the recovered land can never exceed the amount of infected land.

$$H_{infected,s,t} = H_{infected,s,t-1} \cdot \phi(t > 1) + CL_{s,t} - RL_{s,t} \cdot \phi(on_1 = 1) \quad \forall s, t \quad (6)$$

$$RL_{s,t} \cdot \phi(on_1 = 1) - H_{infected,s,t} \leq 0 \quad \forall s, t \quad (7)$$

Equations (8) – (11) handle the dynamic equations for cocoa, coconut, forest, and rubber. As oil palm land becomes contaminated, the landowners may convert (CN) more land from cocoa, coconut, forest, and rubber into oil palms. The land transfers would limit the amount landowners would pay to recover the contaminated land. However, a pathogen outbreak could hasten deforestation.

$$H_{cocoa,s,t} = H_{cocoa,s,t-1} \cdot \phi(t > 1) + TI_{cocoa,s} \cdot \phi(t = 1) - CN_{cocoa,s,t-1} \cdot \phi(t > 1) \quad \forall s, t \quad (8)$$

$$H_{coconut,s,t} = H_{coconut,s,t-1} \cdot \phi(t > 1) + TI_{coconut,s} \cdot \phi(t = 1) - CN_{coconut,s,t-1} \cdot \phi(t > 1) \quad \forall s, t \quad (9)$$

$$H_{forest,s,t} = H_{forest,s,t-1} \cdot \phi(t > 1) + TI_{forest,s} \cdot \phi(t = 1) - CN_{forest,s,t-1} \cdot \phi(t > 1) \quad \forall s, t \quad (10)$$

$$H_{rubber,s,t} = H_{rubber,s,t-1} \cdot \phi(t > 1) + TI_{rubber,s} \cdot \phi(t = 1) - CN_{rubber,s,t-1} \cdot \phi(t > 1) \quad \forall s, t \quad (11)$$

The model allows the total contaminated land (TCL) to be transferred to the cropland (CL) in (12). The model starts with the available land (AL) for crops while farmers allocate cropland for banana, durian, kenaf, mango, papaya, pepper, pineapple, rambutan, and rice. Since oil palms greatly exceed all crops combined, this option is not explored in this paper.

$$\sum_c CL_{t,s,c} \leq AL_s + TCL_{s,t} \phi(on_3 = 1) \quad \forall s, t \quad (12)$$

Once land becomes contaminated, oil palms die and yield zero fresh fruit bunches. Consequently, landowners would not employ labor and apply fertilizer to the contaminated land. Since oil palms are the largest grown commodity in Malaysia, a decrease in demand would lower the resource prices and affect all growing costs in the model. Equation (13) balances the resources employed in plantations and crops with hectares (H) representing the plantation type while cropland (CL) contains crops. The plantation resources (PR) and crop resources (CR) indicate resource usage for one hectare of land and include labor, nitrogen, phosphorous, and potash costs. Finally, resource usage (RU) indicates the available resources (r) for each state (s) and time (t).

$$\sum_p H_{p,s,t} \cdot PR_{p,s,r} + \sum_c CL_{c,s,t} \cdot CR_{c,s,r} \leq RU_{r,s,t} \quad \forall r, s, t \quad (13)$$

Equation (14) shows the inverse Marshallian supply functions for labor, nitrogen, phosphorous, and potash and appears in the objective function. P(RU) represents the inverse supply function with resource supply elasticity of d. Parameter e is calibrated for 2015.

$$P_{r,s,t}(RU_{r,s,t}) = e_{r,s}RU_{r,s,t}^{d_{r,s}} \quad (14)$$

Modeling a Pathogen's Spread in the Model

A two-stage procedure is applied to model a pathogen's spatial movement and depends on two binary constraints. The base scenario, which omits the pathogen, estimates changes in the land use for palm oil between 2015 – 2065. The pathogen's spread is estimated with the base scenario's land use imposed as a constraint in the model. The model assumes that the pathogen's spread across the land is independent of economic factors such as the wind carrying the fungus for BSR. In Equation (15), the indicator function represents the pathogen's strength (PS). It is set to zero when the pathogen infects a low percentage of the land and does not spread to a neighboring state. The indicator function switches on whenever the contaminated land (CL) exceeds the threshold (δ), the proportion of contaminated land. The threshold is set at 0.85 indicating that the pathogen has the potential to spread to neighboring states if 85% of the land is contaminated within a state. The Land Use (LU) in the model represent the forecasted land use for oil palm plantation between 2015 and 2065 for the base scenario.

$$PS_{s,t} = I_{\{CL_{s,t-1}/LU_{s,t-1} > \delta\}} \quad (15)$$

The first term of the indicator function (IS) in Equation (16) represents an infected state remains infected for the life of the model while the second term allows the infection to spread to neighboring states. In equation (16), the State Spatial (SS) consists of a matrix of zeros and ones whereby each state has a one for itself and a one for its neighbor while the remaining entries are zero. The SS is assumed to be symmetric by construction and is multiplied by the pathogen strength (PS) from (15).

$$IS_{s,t} = IS_{s,t-1} \text{ or } I_{\{\sum_{s1} SS_{s,s1} PS_{s,t} > 0\}} \quad (16)$$

The pathogen starts in Selangor, which remains infected throughout the model. Equation (17) calculates the contaminated land (CL) for each state (s) at each time (t). The pathogen growth (g) is standardized and measured in hectares since each state differs in hectares of oil palm plantations. In addition, Equation (16) can be used to measure the pathogen's duration in a state by counting the ones in each state's row. The growth rate could then be adjusted by how long the pathogen has been present in the state. However, no studies at this time allow the adjustment of a pathogen's growth rate.

$$CL_{s,t} = g \cdot IS_{s,t} \quad (17)$$

Equations (18) and (19) track the total uncontaminated land (TUL) and total contaminated land (TCL) for each state, s. The total uncontaminated land equals the past value plus the difference in land use (LU) and deducts contaminated land (CL) in each state, s, while total contaminated land (TCL) aggregates the contaminated land over time in each state. Finally, the program checks for negative land values in TUL and adjusts the CL, TUL, and TCL, accordingly. Then the variables, CL, TUL, and TCL, are imposed on oil palm land use in the model.

$$TUL_{s,t} = TUL_{s,t-1} + LU_{s,t} - LU_{s,t-1} - CL_{s,t} \quad (18)$$

$$TCL_{s,t} = TCL_{s,t-1} + CL_{s,t} \quad (19)$$

The Objective Function

MAPGEM is a partial equilibrium model while supply and demand in each market drive the dynamics of the model. Demand comes from domestic consumption and exports while supply originates from domestic production and imports. Equation (20) represents the inverse Marshallian demand function for domestic consumption (C) with the inverse price represented by P(); subscripts i stand for commodity while t for time. Meanwhile, a growing population (POP) of Malaysia increases domestic consumption and raises the market price. Population Division (2015) estimates the world and Malaysia's population forecasts. Parameters b, and c are derived from the elasticities while the base year, 2015 calibrates a. The inverse demand function includes a tariff duty, and sales and services tax (SST). The tariff is set to zero for domestic consumption.

The inverse demand function for exports resembles the domestic demand while a growing world population raises exports and export prices over time.

$$P_{i,t}^C(C_{i,t}) = a_i C_{i,t}^{b_i} P O P_t^{c_i} (1 + duty)(1 + SST) \quad (20)$$

Equation (21) presents the inverse demand function for imports (I). Parameter b is derived from the supply elasticity while a is calibrated for the base year, 2015. Meanwhile, the import duty is fixed at 5%. For unknown elasticities, the price elasticity of demand is set to -0.75, and both supply and population elasticities to 0.75. Other elasticities come from the literature such as Kochaphum, Gheewala, and Vinitnantharat (2015), and Sheng, Shamsudin, Mohamed, Abdullah, and Radam (2008).

$$P_{i,t}^I(I_{i,t}) = a_i I_{i,t}^{b_i} (1 + duty)(1 + SST) \quad (21)$$

MAPGEM is coded in the General Algebraic Modeling System (GAMS) and consists of 32 blocks of equations with about 26,000 variables. The strength of GAMS lies in its ability to represent and solve large-scale, mathematical optimization models in economics, management, and engineering. Furthermore, GAMS uses a variety of solvers to find solutions for linear, nonlinear, and mixed integer problems. For MAPGEM, the MINOS solver maximizes the discounted consumers' plus producers' surpluses in Equation (22) as the objective function (OF). The objective function incorporated the inverse resource supply from Section 2.1. Other terms include cultivating, growing, harvesting, processing costs, and the one-time pathogen eradication cost. Finally, the terminal conditions (TC) places a value on newly planted oil palms in the last period since newly planted oil palm trees yield zero harvests.

$$OF = \left(1 + \frac{\delta}{100}\right)^{-5t-5} \sum_t \left[\sum_i \left[\int_0^{C^*} P_{i,t}^C(C_{i,t}) dC_{i,t} + \int_0^{E^*} P_{i,t}^E(E_{i,t}) dE_{i,t} - \int_0^{I^*} P_{i,t}^I(I_{i,t}) dI_{i,t} \right] - \sum_s \sum_r \int_0^{RU^*} P_{r,s,t}^{RU}(RU_{r,s,t}) dRU_{r,s,t} + other\ terms \right] + \left(1 + \frac{\delta}{100}\right)^{-5T-5} TC \quad (22)$$

Equation (23) ensures domestic production and import supply exceed domestic consumption and exports.

$$C_{i,t} + E_{i,t} \leq I_{i,t} + \sum_s DP_{i,s,t} \quad (23)$$

MAPGEM contains two multi-input and output Leontief production functions. The production functions link the plantation and crop harvests with the processing of agricultural commodities. In addition, the production functions connect the demand for agricultural commodities to the growing and harvesting of the crops and plantations. Equation (24) represents the input production function for the plantations while (25) ascertains the domestic production (DP). The production function coefficients are in the matrices, manufacturing input (MI) and manufacturing output (MO). The production input (PI) assigns the harvests from plantations to a process. Plantations have six processes: Making cocoa, processing coconuts, crushing FFB, making biodiesel, collecting yellow grease, and making latex. Subscripts p, pp, s, and t stand for plantation trees, plantation products, state, and time. Oil palms require an alias, p1, to combine (COM) the FFB from five and mature oil palm trees into one stream. Finally, the plantation yield (PY) represents the plantation harvests while plantation trees are held in hectares (H).

$$\sum_{process} MI_{process,p} \cdot PI_{process,s,t} \leq \sum_{p1} COM_{p,p1} \cdot PY_{p1,s} \cdot H_{p1,s,t} \quad \forall process, s, t \quad (24)$$

$$\sum_{process} MO_{process,p} \cdot PI_{process,s,t} = DP_{pp,s,t} \quad \forall pp, s, t \quad (25)$$

Data Sources

Prices, domestic consumption, exports, and imports in MAPGEM are calibrated within 5% for 2015 while MAPGEM forecasts prices and quantities for 2020 and later. Data sources for MAPGEM come many sources. The plantation tree inventory originates from the Economics & Industry Development Division (2015), Forestry Department Peninsular Malaysia (2015), Department of Statistics Malaysia (2016a), Department of Statistics Malaysia (2016b), Ministry of Plantation Industries and Commodities (2015a), and Ghani (2016). The crop information comes from Ministry of Agriculture and Agro-Based Industry (2015), Ministry of Plantation Industries and Commodities (2015b), Ministry of Plantation Industries and Commodities (2015c), and Statistics Unit (2015). Because of the sizeable number of references to construct MAPGEM, please refer to the ebook, The Construction of MAPGEM, at <http://www.ken-szulczyk.com/mapgem.html>.

RESULTS AND DISCUSSION

Pathogen Outbreak

The first analysis estimates the economic damage from a pathogen that freely spreads across the Malaysian oil palm plantations. Damages are measured in change in social welfare, Fisher price index, and employment. Furthermore, the potential deforestation is examined since plantations owners would clear rainforests to plant new oil palms on uncontaminated land. Four pathogen growth rates include 0, 75,000, 150,000, and 300,000 hectares per five years. The zero rate establishes the base scenario.

In Table 1, Panel A, the base scenario is the zero pathogen growth rate which starts with 4,702,600 hectares of mature oil palms in 2015 and grows to 6,769,400 hectares in 2065. Thereafter, the pathogen starts in Selangor and spreads across Malaysia. A geographical information system (GIS) software, GeoDa, plots the 75,000 hectares per five-year pathogen growth rate, which Figure 1, Panels A – D show. The white area indicates that the infection lies below 20% per land area while yellow, orange, red, and dark red show a spectrum of worsening infection. The infection starts in Selangor in 2015 and spreads across the states. The infection rate becomes severe in 2060 with the pathogen infecting most of the mature oil palms.

Table 1, Panel A shows the infection rates for 150,000 and 300,000 hectares per five years. The 150,000 spread rate devastates most of the oil palm tree by 2045 while the 300,000 infection rate hastens the devastation of the oil palm plantations. Indeed, a pathogen can quickly spread across Malaysia and supports the claim of Roslan and Idris (2012).

As shown in Table 1, Panel B, Malaysia agriculture is a large contributor to the economy in terms of social welfare. Starting in 2015, agriculture contributes RM274.0 billion with a potential to increase to RM308.3 billion by 2065. The economic damage from the pathogen accumulates over time with the largest impact in 2065. Consequently, the 75,000 infection rate can potentially reduce social welfare by about RM10.4 billion by 2065. In addition, the 300,000 infection rate could potentially reduce welfare by RM34.4 billion by 2065. Thus, a pathogen poses a severe threat to the agricultural sector and imposes hardship on the oil palm estates and generates losses to the Malaysian economy.

Panel C shows the price of the basket of agricultural commodities based on Fisher Price Index. The index is set at 100 at the base year 2015. As indicated in Table 1, Panel C, commodity prices are stable throughout the simulation year with the absence of the infection. Domestic production rises with the increasing domestic and export demands. With the infection rate of 75,000 per hectares per five years, prices of agricultural commodities increase to 107.3 in 2065. The price index increases for greater infection rates and attains 130.2 in 2065 for the 300,000 infection rate. Thus, worsening infection rates spur greater agricultural prices, which increase food costs for Malaysians.

Oil palm sectors employ the bulk of the agricultural workers. The effect of a spreading pathogen across oil palm plantations and its impact on agricultural employment is presented in Table 1, Panel D. At the spread rate of 75,000, the agricultural sector employs 1.06 million workers with the potential to induce a loss of 175,000 jobs by 2065. Higher infection rates hasten the spread of the pathogen across the oil palms and generate further job losses. As the results indicate, a higher spread rate reduces agricultural employment. Leaving the infection rates unchecked can result in tremendous job losses in the agricultural sector.

Table 1, Panel E summarizes the potential deforestation of the rainforests. The base scenario indicates that deforestation increases at a decreasing rate. MAGEM predicts the base scenario will lead to a loss of 1.3 million hectares of rainforests as plantation owners clear rainforests to plant oil palms. An infection rate of 75,000 leads to higher oil palm prices. Consequently, plantation owners clear more rainforests to help replace the contaminated land. Infection rates of 150,000 and 300,000, in turn, lead to higher rates of deforestation. The 300,000 infection rate leads to a loss of 3.5 million hectares of rainforests. Hence, a pathogen has the potential to devastate the oil palm industry and lead to greater deforestation as landowners clear forests to plant oil palms.

Recovering Infected Oil Palm Land

The second analysis estimates the amount of land reclaimed if landowners pay a one-time eradication cost. The eradication costs include RM5,000, RM10,000, RM20,000, and RM30,000. Landowners would weigh the eradication cost to the cost of developing new oil palms from rainforests. Then the landowners use the land to grow oil palms for the remaining life of the model. Eradication cost includes the costs of labor, capital and fixed charges to eradicate the pathogen. The infection rate is set at 150,000 hectares per five years. The Malaysian government may aid in the eradication cost because of the inability of plantation owners to bear the financial burden of pathogen elimination.

The eradication cost of RM10,000 per hectare is presented in Figure 2, Panel A. The white area shows the less severely contaminated land with less than 20% infection rate. Those areas in orange, red and dark red represent a more severe contaminated land. The spread rate forms a distinctive pattern over the years as indicated in the map. Landowners recover fewer hectares in Eastern Malaysia where most of the deforestation occurs while landowners recover more land on the peninsula, where the majority of the population lives. Thus, the results indicate most of the reclaimed land would be in Western Malaysia where land is scarcer while Eastern Malaysia would witness fewer hectares reclaimed.

Table 2, Panel A shows the amount of contaminated land reclaimed for four recovery costs. For a recovery cost of RM5,000 per hectare, plantation owners reclaim about 2.0 million hectares of contaminated land. The RM10,000 recovery cost only reclaims 1.6 million hectares as landowners recover fewer hectares for higher recovery costs. Finally, a recovery cost of RM30,000 allows only 11,625 hectares to be reclaimed. Thus, the landowners reclaim less land as the recovery cost increase, and landowners would just claim the more productive land.

Table 2 Panels B – D shows the economic indicators. As economic theory predicts, social welfare improves as landowners eradicate the pathogen and reclaim the contaminated oil palm land in Panel B. However, social welfare does not recover to the base level. Furthermore, the commodity price index in Panel C and agricultural employment in Panel D also improve but not to the original levels. Finally, the reclamation of contaminated land lessens deforestation as landowners replant oil palms on reclaimed land and clear fewer hectares of rainforests.

CONCLUSION

In this paper, the economic implications of a pathogen infection are investigated for the Malaysian oil palm plantations in MAGEM, a partial equilibrium model. The results indicate that even a low pathogen infection rate could expand rapidly and devastate the palm oil industry with significant economic losses in social welfare, higher agricultural prices, and considerable job losses. Furthermore, the rapid spread of a pathogen would hasten deforestation as higher agricultural prices encourage landowners to clear more forests to plant oil palms. In addition, the results suggest that a one-time eradication costs could help recover significant parcels of the productive land. Thus, the recovered land helps lower the Fisher Price Index, raises agricultural employment, and boosts agricultural welfare but not to the same levels as the base scenario with the pathogen's absence. The landowners would balance the eradication costs with the costs to clear rainforests to plant new oil palms. Furthermore, the model's implication provides important policy analysis to business people, researchers, and policymakers. Although no country is safe from biological threats, the model can estimate the level of economic damage and weigh the possible mitigation costs by recovering infected land.

For future research endeavors, the two binary constraints that estimate a pathogen's infection should become endogenous in the model. If the constraints were endogenous, the model would

allow the study of preventive and surveillance measures. Then the model could allow the comparison of the ex-ante and ex-post policies in biosecurity mitigation.

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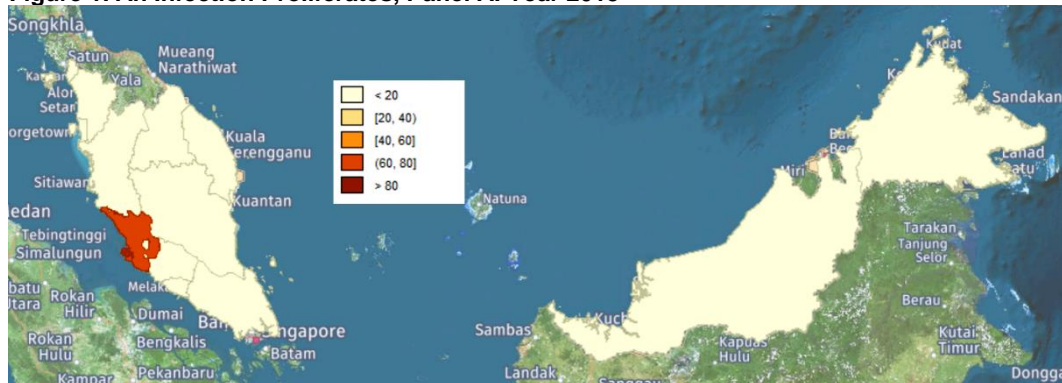
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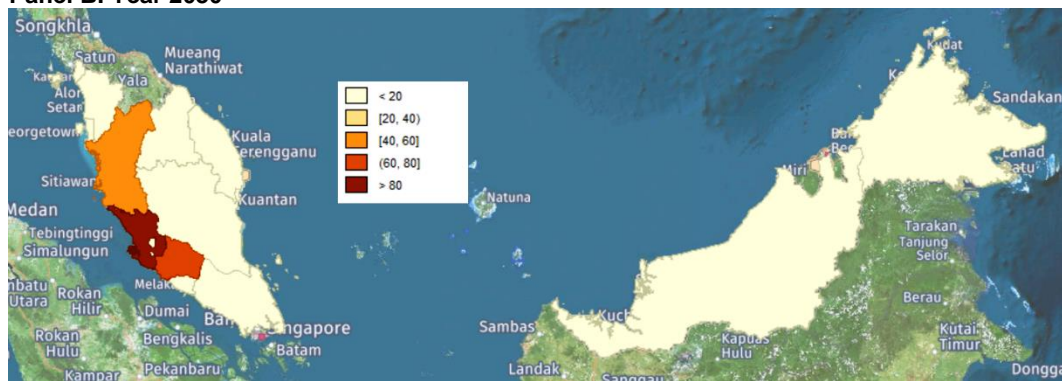
APPENDICES

Figures

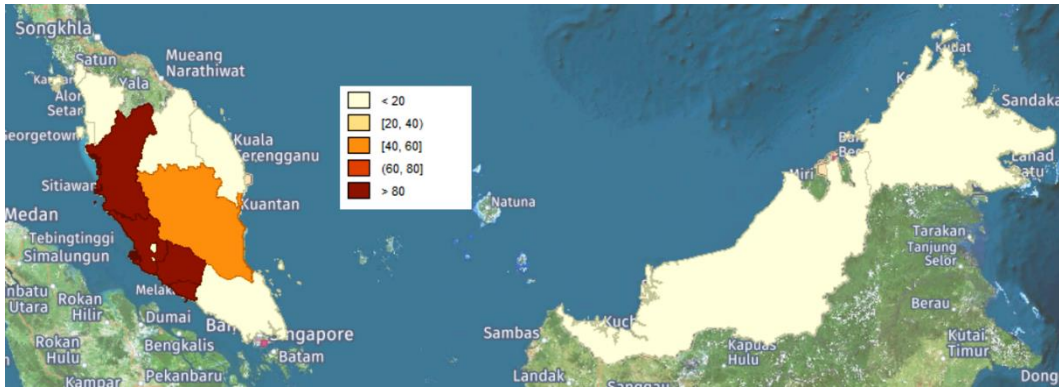
Figure 1. An Infection Proliferates, Panel A. Year 2015



Panel B. Year 2030



Panel C. Year 2045



Panel D. Year 2060

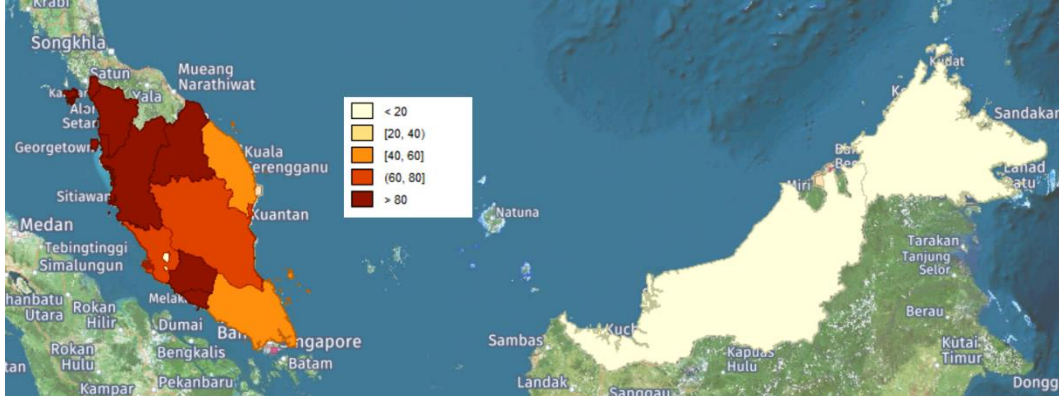
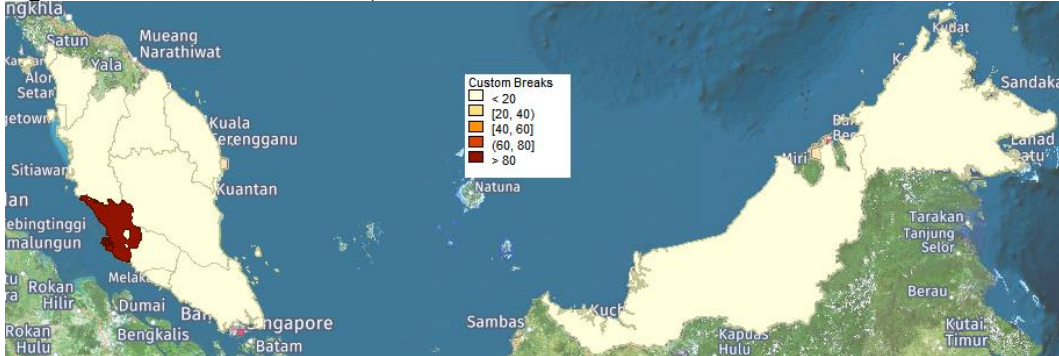
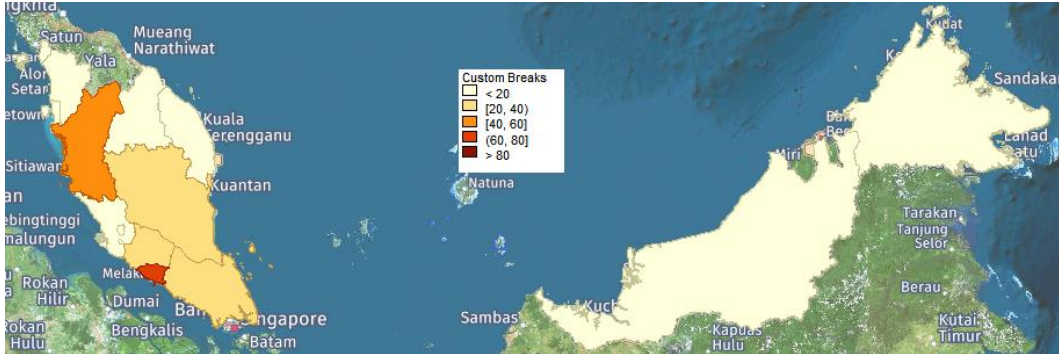


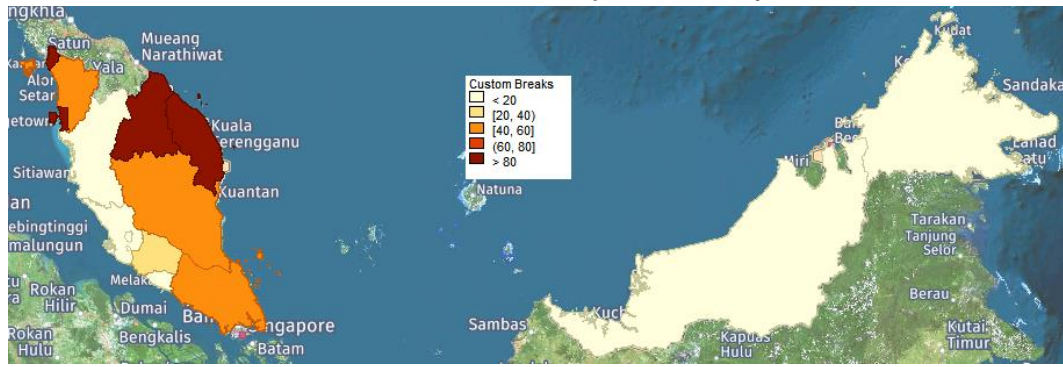
Figure 2. Recover Infected Land, Panel A. Year 2015



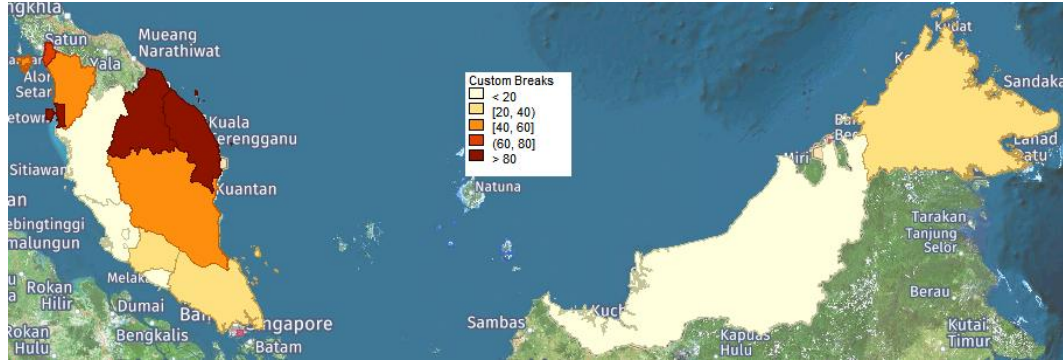
Panel B. Year 2030



Panel C. Year 2045



Panel D. Year 2060



Tables

Table 1. A Pathogen Proliferates

Panel A. Mature Oil Palms (thousand hectares)											
Spread Rate	2015	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065
0	4,702.6	5,309.2	6,031.2	6,211.4	6,373.0	6,508.6	6,622.1	6,717.4	6,762.5	6,768.0	6,769.4
75,000	4,630.1	5,186.8	5,695.5	6,084.8	6,181.8	6,060.3	5,974.9	5,720.3	5,558.4	5,411.7	5,218.6
150,000	4,584.3	4,759.3	4,990.3	5,229.7	5,211.6	5,221.2	5,377.3	5,176.1	4,988.4	4,774.4	4,549.9
300,000	4,584.3	4,452.2	4,500.8	4,464.5	4,693.2	4,558.6	4,361.1	4,102.9	3,796.3	3,448.9	3,066.1

Panel B. Social Welfare (million RM)											
Spread Rate	2015	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065
0	273,989	286,506	291,511	294,113	296,541	298,790	301,197	303,465	305,219	306,749	308,253
75,000	273,458	282,179	288,052	292,070	294,006	294,904	295,870	296,137	297,153	297,781	297,897
150,000	273,028	279,446	281,546	283,702	284,935	287,739	289,549	290,245	290,808	291,296	291,178
300,000	272,955	277,061	277,734	278,348	280,987	281,835	281,971	281,287	279,700	278,032	273,817

Panel C. Agricultural Prices											
Spread Rate	2015	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065
0	100.0	101.5	99.6	99.1	98.7	98.1	97.8	97.8	97.7	97.6	97.6
75,000	100.0	101.8	100.1	99.7	100.2	101.3	102.2	103.9	104.9	105.9	107.3

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150,000	100.0	104.5	104.7	104.5	105.1	105.7	106.1	107.9	109.5	111.3	113.0
300,000	100.0	106.9	108.6	109.8	109.0	111.0	113.6	116.6	120.3	124.3	130.2

Panel D. Agricultural Employment (workers)

Spread Rate	2015	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065
0	1,063,314	1,068,619	1,072,188	1,075,575	1,078,156	1,082,392	1,080,993	1,077,209	1,075,633	1,074,985	1,073,056
75,000	1,056,225	1,098,037	1,089,684	1,069,730	1,051,742	1,025,911	1,006,077	971,345	943,801	921,344	897,583
150,000	1,052,467	1,056,276	1,039,573	1,030,184	1,001,999	961,291	940,744	909,546	882,808	852,331	823,682
300,000	1,053,410	1,025,496	986,962	950,972	945,309	908,378	868,323	826,015	781,170	725,293	664,977

Panel E. Deforestation (hectares)

Spread Rate	2015	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065
0	688,178	162,801	136,833	115,062	96,223	80,711	39,370	3,376	0	0	0
75,000	688,178	578,686	256,472	117,166	97,992	82,198	69,120	57,227	17,821	5,298	0
150,000	697,266	586,329	493,042	414,597	348,101	292,574	245,943	206,835	173,930	149,973	0
300,000	697,266	586,329	493,042	414,597	348,101	292,574	245,943	206,835	173,930	149,973	0

Source: MAPGEM solves for the equilibrium market prices and quantities given the pathogen spread rate. The pathogen starts in Selangor and strikes the mature oil palm trees.

Table 2. Recovered Contaminated Land

Panel A. Recovered Land (hectares)											
Eradication Cost	2015	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065
5,000	61,122	255,561	394,654	397,032	399,898	358,322	173,100	849	0	0	0
10,000	61,122	255,561	394,654	370,339	383,027	144,021	0	0	0	0	0
20,000	61,122	194,423	223,393	74,254	0	0	0	0	0	0	0
30,000	0	0	11,625	0	0	0	0	0	0	0	0

Panel B. Social Welfare (million RM)

Eradication Cost	2015	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065
5,000	272,376	276,512	280,007	284,532	287,128	290,075	295,410	300,111	302,134	302,717	302,765
10,000	272,071	275,234	277,191	282,744	285,665	292,152	297,539	299,005	299,851	300,725	300,868
20,000	271,460	274,326	276,268	283,981	290,572	292,081	293,009	293,713	294,321	294,941	294,965
30,000	273,028	279,446	281,122	283,746	285,039	287,903	289,660	290,327	290,893	291,384	291,269

Panel C. Fisher Price Index

Eradication Cost	2015	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065
5,000	100.0	104.3	103.3	101.8	101.4	100.9	99.7	99.9	100.8	102.2	103.8

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10,000	100.0	104.3	103.3	101.6	101.1	100.7	100.2	101.4	102.9	104.1	105.7
20,000	100.0	104.3	103.6	102.1	101.8	103.0	104.1	105.7	107.2	108.9	110.3
30,000	100.0	104.5	104.7	104.4	105.0	105.6	106.0	107.8	109.4	111.2	113.0

Panel D. Agricultural Employment (workers)

Eradication Cost	2015	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065
5,000	1,057,592	1,085,567	1,080,750	1,081,285	1,070,477	1,064,713	1,061,525	1,031,464	999,601	969,541	938,748
10,000	1,057,592	1,085,567	1,089,936	1,089,271	1,074,520	1,047,621	1,027,426	997,763	970,193	940,417	909,283
20,000	1,057,592	1,079,796	1,084,025	1,079,751	1,028,860	987,002	965,330	935,882	909,349	878,837	850,693
30,000	1,052,467	1,056,276	1,040,719	1,031,178	1,003,225	961,848	941,302	910,107	883,381	852,835	824,228

Panel E. Deforestation (hectares)

Eradication Cost	2015	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065
5,000	688,178	578,686	202,795	117,166	97,992	82,198	69,120	58,123	7,845	0	0
10,000	688,178	578,686	302,219	117,166	97,992	82,198	69,120	58,123	48,729	0	0
20,000	688,178	578,686	486,615	391,019	102,537	86,020	69,120	58,123	48,875	13,353	0
30,000	697,266	586,329	493,042	414,597	348,101	86,020	72,334	58,123	48,875	14,973	0

Source: MAPGEM solves for the equilibrium prices and quantities for the one-time payment of eradication cost in the table. The biological agent spreads at 150,000 hectares per five years and starts in Selangor.

CAN CHINA'S EXCHANGE RATE AFFECT GLOBAL COMMODITY PRICES?

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Abstract

In the context of the ongoing trade dispute between China and the United States, our study attempts to investigate the sensitivity of global commodity prices to the appreciation and depreciation of renminbi (RMB). Using quarterly data of 1994-2016, we reach three notable findings which are based on linear and non-linear specifications of autoregressive distributed lag (ARDL). First, the global prices of agricultural commodities are sensitive to the appreciation of RMB, exercising a downward pressure on agricultural commodity markets. Second, crude oil prices are found to react negatively to real appreciation of RMB. Third, the prices of several metal commodities particularly aluminum and nickel are found to respond negatively to changes in RMB. The policy implication from our findings is that China would be benefitted if it adopts a trade strategy by setting a one-off appreciation instead of resorting to tariffs on its imports.

Keywords: Renminbi; global commodity prices; asymmetric effect; trade dispute; ARDL
