CoMDITE 2021

PROCEEDINGS OF

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APRIL 2021

## BUSINESS SUSTAINABILITY THROUGH DIGITAL TRANSFORMATION

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**The 2nd Conference on Managing Digital Industry, Technology and Entrepreneurship (CoMDITE 2021)**

# Proceedings of The 2nd Conference on Managing Digital Industry, Technology and Entrepreneurship (CoMDITE 2021)

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# Preface

It is my great pleasure to welcome all of our presenters and participants to the 2nd Conference on Managing Digital Industry, Technology and Entrepreneurship (CoMDITE 2021). It is an ongoing effort by Center of Business Excellence (CoBE) from Faculty of Management, Multimedia University, Cyberjaya, Malaysia and Telkom University, Bandung, Indonesia on organising the conference with the first conference hosted by Telkom University in Bandung. This year is exceptional where CoMDITE 2021 is virtually hosted and accessible throughout the globe.

CoMDITE 2021 is mainly aimed to serve as a sharing platform that enables researchers, academics and practitioners to share the best practices, which have been produced through research, as well as to potentially propose the best strategy in utilizing digital transformation for business sustainability. Besides paper presentation, CoMDITE 2021 also paved way for potential papers to be published in SCOPUS and MyCITE journals.

Therefore, I proudly welcome all of you to CoMDITE 2021 and wishing all participants to have fruitful and memorable experience. Last but not least, I would like to express blessed gratitude to our university management for their support to this conference and a heartfelt thank you also to all the committee involved from both universities.

**Conference Chair**
**Dr. Hasni Binti Mohd Hanafi**
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# BIG DATA ANALYTICS FOR BUSINESS

# ANALYSIS OF FACTORS AFFECTING THE USE OF AVIOBRIDGE IN SOEKARNO-HATTA AIRPORT

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***Abstract***

Aviobridge is one of the facilities available at the airport. As one of the facilities that support the boarding and deboarding processes of passengers at the airport, its utilization is still ineffective. Because even though the aircraft is in the facility area, it does not take advantage of these facilities. It is necessary to research to find out what are the determining factors for airlines in using Aviobridge so that they can provide input in determining which airlines should occupy that position. In this study, logistic regression will be used to determine the relationship of each factor and determine which factors have the most influence in determining the decision to use Aviobridge. The data used in the report on the use of Aviobridge for the period 2019 - 2020. From the data that has been analyzed, it is known that the factors of aircraft characteristics, flight category, type of operation, and type of airline service affect determining the use of Aviobridge. With the type of airline service being the most significant factor in determining the use of aviobridge.

***Keywords— Aviobridge; Logistic Regression; Aircraft characteristics; Airline Service***

## I. INTRODUCTION

Aviobridge is a bridge that is walled and roofed and is a liaison between passengers' waiting room at the airport towards the airplane door that facilitates the passengers to get out or incoming aircraft. Aviobridge is located at the contact stand, which is an area directly connected to the airport terminal building. From observations were carried out at the Soekarno-Hatta International Airport, we obtained that percentage between airplane that using aviobridge and airplane that does not use it with a ratio of 80% and 20%. As an international airport, the airplane that using a contact stand is the airline that performs international and domestic flight (Guépet et al., 2015), has an airplane with a type of wide-body or narrow-body (de Neufville et al., 2013; Pradana et al., 2017; Yan et al., 2011). Besides, airlines can carry out the operation at the airport can take place over one day to a different day. As the saying by Pradana [2017] in his research, that the airline which often uses aviobridge is an airline that operates in one day and did not pass the day arrived at the airport. The concept of business that is taking place today is dominated by the airline full-service and low-cost carrier (LCC). With LCC airline enforce policies businesses that minimize costs were incurred during in the area of the airport, while the full services carrier will attach great importance to the comfort of the passengers even though raising costs are incurred. Differences in policies create a difference in utilizing the facilities that are available at the airport, including aviobridge facilities (Mirkovic & Tosic, 2014). In carrying out operations at Soekarno-Hatta Airport, the management that regulates the use of Aviobridge is only making a schedule without considering the possibility of whether the airline will use Aviobridge or not. So that to facilitate the decision-making process in using aviobridge, it is necessary to know the factors that influence the use of aviobridge and the relevant prediction models so that they can help make good decisions. The purpose of the study itself is to determine the factors that influence the use of aviobridge and to determine the effect of these factors on the use of aviobridge.

## II. METHODOLOGY

In this study, the analytical data model approach was used. Where the steps are data collection, data cleaning, data processing, and analysis results. At the data collection stage, data were collected from February 2019 to February 2020. The data used is data on the use of contact stands. For the data cleaning stage, checking for incomplete data, data that is not following passenger service is carried out. Data processing is the stage of data processing to determine the influence of existing factors on the use of aviobridge. Processing is done using logistic regression. After obtaining the results of data processing, an analysis of the results is carried out.

Because the data that is the dependent variable has a dichotomous or binary value, logistic regression is used to explain the relationship between the dependent and independent variables (Purnama, 2019). From the data processing, a model will be obtained that explains the relationship between these factors and based on the coefficient value using $\alpha = 0.05$, it can be seen whether these factors influence or not the usage of aviobridge. This is evidenced by looking at the p-value of each factor. Based on the explanation in the introduction, the dependent variable is the use of aviobridge while the independent variables are the characteristics of the aircraft, the type of operation, the type of service, and the type of flight. By using a logistic regression equation

$$\ln p1\text{-}p = a0 + b1\ \text{airplane Characteristic} + b2\text{airplane type of operation} + b3\ \text{type of service} + b4\ \text{type of flight}$$

## III. RESULTS/FINDINGS

Table 1 shows the results of data processing using logistic regression. From the analyzed factors, it is known that all factors influence the use of aviobridge as indicated by the p-value <0.05. The type of flight has a positive effect, while the characteristics of wide-body aircraft, the type of operation of RON (Remained Over Night), and the type of service have a negative effect.

Table 1: Coefficient Result

| | Estimate | Std. Error | z value | Pr(>\|z\|) |
|---|---|---|---|---|
| (Intercept) | 4.71125 | 0.04263 | 110.52 | <2e-16 *** |
| characteristic Wide | -1.39424 | 0.05575 | -25.01 | <2e-16 *** |
| `Type of Operation (Ron)`RON | -0.89193 | 0.01484 | -60.12 | <2e-16 *** |
| `Type of Service`LCC | -3.82034 | 0.04268 | -89.51 | <2e-16 *** |
| `Type of Service`Private | -9.32967 | 0.41220 | -22.63 | <2e-16 *** |
| Type of Flight International | 0.68040 | 0.02015 | 33.77 | <2e-16 *** |

To find out the possibility of using aviobridge, it is necessary to know the odds ratio from the variable used as the predictor variable. The odds ratio can be seen in Table 2.

Table 2: Odds Ratio

| Variable | *Odds Ratio* | *Percentage of Odds Ratio* |
|---|---|---|
| characteristic Wide | 0.248 | -75.19 |
| `Type of Operation (Ron)`RON | 0.409 | -59.01 |
| `Type of Service`LCC | 0.022 | -97.80 |
| `Type of Service`Private | 0.0001 | -99.99 |
| Type of Flight International | 1.975 | 97.46 |

## IV. CONCLUSION

With $\alpha = 0.05$, the factors analyzed in this study include the characteristics of the aircraft, the type of operation, the flight category, and the type of service that affect the use of aviobridge which is indicated by the p-value of all factors < 2.2e-16. Of all the factors analyzed, it was found that the most influential factor for using aviobridge was the type of service. The influence of these factors on the use of aviobridge can be seen from the odds ratio for each variable. In the flight category international variable, the odds ratio is 1,975 so that international flights more likely to use Aviobridge. For wide-body aircraft, it has an odds ratio of 0.248 so that flights with wide-body aircraft are less likely to use aviobridge. For the type of operation, RON has an odds ratio of 0.409, so every point change in RON's operation will decrease the tendency by 0.409 points. For the type of airline service, there are 2 factors, namely LCC and private with odds ratios of 0.02 and 0.0001. So LCC and Private are less likely to use aviobridge than full services airline.

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# BUSINESS PROCESS ANALYSIS OF CLOUD SERVICE MANAGEMENT INCIDENT: CASE OF PT. XYZ WITH SOFTWARE R AND PROM

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***Abstract***

PT. XYZ is one of the cloud computing service providers in Indonesia. The advantages of virtualized networks and software platforms make cloud computing a business operational support for organizations. The main focus of PT. XYZ is to be a reliable and high available cloud computing service provider. The company has a Standard Operation Procedure (SOP), used to carry out the business process known as incident management. However, in the implementation of the incident management process for cloud computing services, some problems potentially will interfere with the incident handling process. It is necessary to conduct business process analysis (BPA) for operations and end-to-end solutions. Started with a literature study and data collection, using the extraction of the event log data and the analysis process using the R and ProM software. The log found 806 cases and 5466 activities. The researcher conducted business process modeling from the event log for running process analysis. The results show that the business process of incident handling was not implemented; the average duration of incident handling was 3 to 4 days. This has an impact on the fees charged by PT. XYZ. Final result depicting that the research knows the implications for PT. XYZ, based on this analysis, the researcher provides recommendations for handling incidents to be more effective and efficient.

***Keywords—Business Process, Process Mining, Incident Management, Event Log***

## I.INTRODUCTION

Nowadays, technology developments encourage companies to adopt cloud computing-based information technology (IT) services. According to Attaran (2018), cloud computing services refer to different types of platforms for distributed computing that allow the organization to accelerate core IT functions. Providing services that have reliability and availability in cloud computing services is very important to maintain customer trust and satisfaction as well as preventing revenue loss (Mesbahi, 2018).

In data monthly of incident management, some of the reported incident tickets and the number of closed tickets show an anomaly in which the number of closed tickets should be in line with the number reported. There are profound gaps, and there are also indications that the incident handling procedure is not working properly. From the observations made, there are conditions where the incident management business process has gaps against the standardized operational procedures of PT. XYZ.

In this study, to determine the process that occurred, the researcher conducted a process analysis starting from incident reporting to services operating normally. The business process model was analyzed to show the complexity of the problem and how to handle it according to procedures.

## II. METHODOLOGY

The goal of process mining is to turn event data into insights and actions which allow to take (input) some event data (for example, event log data) and perform extract process-related information (Aalst, 2016). An event log is a collection of events extracted in the context of a process that indicates which activity has happened at a specific time (Fani Sani, 2020). In this study, there are four variables used including incident ID, activity ID, activity status, and date-time. In processing the event log using R software, several steps must be passed:

a. Event log data from the incident management query server manual is collected.

b. Preprocessing data event log with complete activity filters.

c. Identify variants of the business process model that arise due to different incident handling situations. This section displays activity based on the frequency of activity.

d. Furthermore, mapping attributes and making process discovery in the ProM software. In this study, the authors used alpha algorithms to visualize business process models and provide recommendations on existing findings.

## III. RESULTS

This research applies the mining process concept to the incident management process at the Cloud Computing service provider at PT. XYZ. After extracting and preprocessing event log data, information on the number of incident tickets as many as 806 cases and 5466 activities in 2019. Then the values are applied in the process model. It is known that performance analysis is closed ticket activity and the case solve activity. The attribute value also shows that the average time for case resolution is 4.13 days.

Moreover, business process mismatches are analyzed from event log data and Incident Management Standard Operational Procedures. It was found that several processes were not executed according to the company PT. XYZ's standard operational procedure. From the identification that has been described in the business process analysis, it is known that it can influence the Cloud Computing business unit of PT. XYZ. One of the effects is penalties, which impact the company's margins. This certainly reduces the margin set to only 10% of the product's price so that it resulted in the loss of the company's capital and margins.

After analyzing the discovery process by providing an overview of the findings, there are three diagnoses from the research. First, a business process that is not carried out following the Standard Operating Procedure of PT. XYZ. The second is from the analysis of activity performance that lasts more than eight hours are closed tickets and the case solve activities. The third is that the impact on the additional burden caused by the incident time resolution is less than the minimum percentage of incident time resolution, namely 99% in a month.

In accordance with the result of the analysis, the researcher made the following recommendations. More in-depth mapping of duties and authorities so that business processes can be carried out following the PT.XYZ's standard operational procedure. Incident management must increase responsiveness as an intermediary between the service desk and support level 2. The development of optimal incident management needs to be formed by a functional team for incident monitoring and auto-closed system within a particular time.

## IV. CONCLUSION

Based on the results of research, data analysis, and discussion of incident management business processes on the Cloud Computing service of PT. XYZ, thus the following conclusions can be drawn as follows. Based on process mining results, process mapping is carried out and matching with standardized operating procedures at PT. XYZ. So in the incident management business process in 2019, it was found that several functions had not been carried out according to the standardized operating procedures of PT. XYZ. The activity performance analysis results for the recorded processes have a long incident handling time with a duration of more than 8 hours, namely the solve case and closed ticket activities. The impact analysis results from the incident management business process's incompatibility with standardized operating procedures, resulting in case handling that exceeds the stipulated resolution time and financial business risks.

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# IDENTIFICATION GAME GENRE AND FEATURE USING TOPIC MODELING FOR INNOVATION IN INDONESIA GAME STARTUP

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***Abstract***

The game market is one of the growing markets in Indonesia. Along with the development of technology, it produces a variety of games that can attract game consumers. Some gamers often give reviews about games on certain media, one of which is Twitter social media. A large amount of data about Twitter reviews can be used to find out the most important topics about games using Topic Modeling, which can be used as a game startup innovation. Latent Dirichlet Allocation (LDA) is Topic Modeling method used in this study to obtain important topics from 15,665 data. An Important game topic can be utilized by the game company, especially startup, to plan an innovative game. In research, these topics are used for the Business Model Innovation Process (BMIP). Based on LDA results, character design and in-game story are important aspects of the game, with beta values for character design 0.232 and story 0.196, respectively. Fighting game is the most popular game genre on Twitter, with a beta value of 0.25. Single-player type game has a beta of 0.207 and Buy-to-Play with a value of 0.671.

***Keywords—Game Marketing, Big Data, Machine Learning, Topic Modeling, Latent Dirichlet Allocation***

## I. INTRODUCTION

The game market and game industry in Indonesia continue to grow every year, according to Budiansya (2020). In 2018 Indonesian game market made a profit of $ 1.13 billion, but only 0.2% of this profit goes to the Indonesian game industry (Budiansyah, 2020).

Games have various kinds of elements, one of which is a genre and in-game features (Rogers, 2014). Game genre is the type of game determined based on the game's core or purposes, such as fantasy, adventure, and others. A game has many features, such as the type of profit model, in-game interaction, and aspects of the game. There are several types of profit models, such as Free-to-Play (F2P), Buy-to-Play (B2P), and Pay-to-Play (P2P) (Rogers, 2014). The interactions in the game are interactions that can be done by players such as single players, multiplayer, and others. A Game can have many aspects, such as storyline, objectives, gameplay, and others (Albuquerque et al., 2015).

The number of reviews can be used as data to be analyzed using machine learning and find out important things from the data. One method that can be used in machine learning is Topic Modeling, where this method can show important topics based on the amount of data available (Masrury et al., 2015).

## II. METHODOLOGY

This research uses data crawling method on Twitter for data collection. The tweet data taken are tweets that use Bahasa Indonesian and, according to Rogers (2014), which includes elements of game aspect, game genre, profit model, and customer interaction. The collected data is then filtered using tokenization, filter stop words, and stemming (Masrury et al., 2015). Collecting and filtering data in this study using Python programming. The result of filtering data is 15,665 data. The results of data filtering will be analyzed using the Topic Modeling method with the LDA technique.

## III. RESULTS/FINDINGS

LDA results produce a beta value, which is the probability value of a word from a group of words on a topic. The high beta explains that the word has a high possibility of being the main word or topic from the processed data set (Masrury et al., 2015). The words from topics will be ranked based on their beta, as in Figure 1.

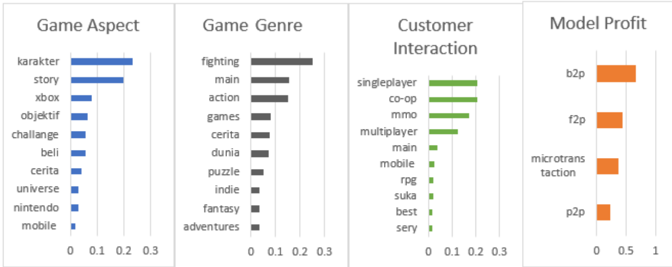


Figure 1. LDA result

Based on Figure 1, Fighting game is the most popular topic about video game genre with beta value of 0.25, followed by action, puzzle, fantasy, and adventures. Karakter (character) is the most popular feature based on game aspect with beta value of 0.232. Story, objective, challenge, playable on Xbox, Nintendo, and mobile phone are the other popular feature from the topic about game aspect. Single-player mode is the most popular feature about customer interaction topics with beta value of 0.25, followed by other modes such as co-op, MMO, and multiplayer. The most popular topic about model profit based on Twitter reviews is the B2P model with beta value of 0.671, which means the consumer only needs to purchase the game once to experience all the content. BMIP is then made to determine a business model for a game based on reviews on Twitter, which refer to Laurischkat and Viertelhausen (2017) research, as in Figure 2.

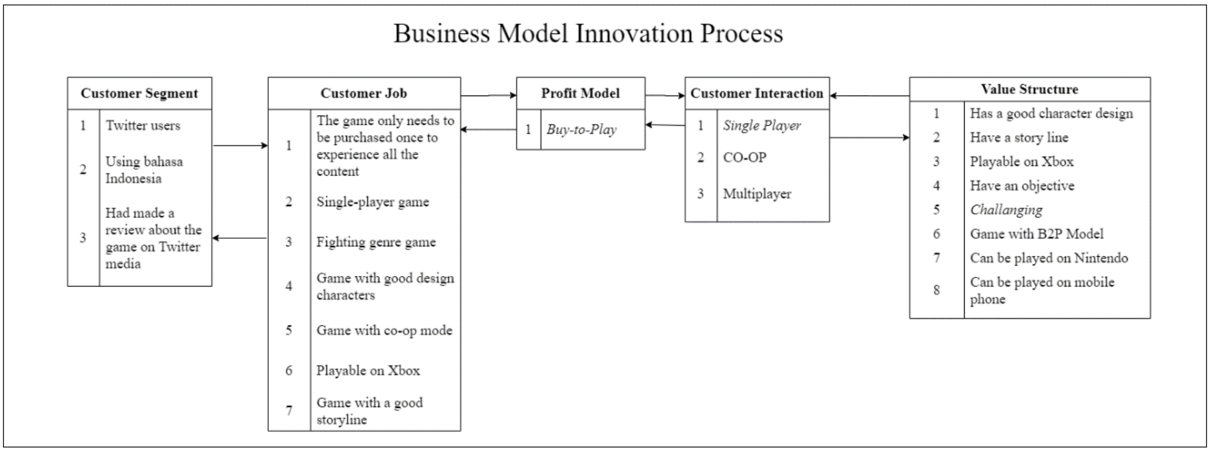


Figure 2. Business Model Innovation Process (Laurischkat dan Viertelhausen, 2017)

Figure 2 shows the process to make innovation in a game using BMIP based on LDA result of features and genre. A popular type of game for business innovation based on Twitter reviews is a game in fighting genre and can be played on some game consoles such as Xbox, Nintendo, and mobile phone. The game needs to use single-player mode with an optional mode such as co-op and multiplayer mode. Features that can be used as innovation in the game are character's design, story, objectives, and challenges. Model profit for the game using B2P model.

## IV. CONCLUSION

Based on the LDA results, character design with beta of 0.232 and a story with beta of 0.196 has the highest beta score for the game aspect. Fighting game is the highest topic for the game genre, with a beta of 0.25. Single-player is the highest topic, with beta score of 0.207 in the customer interaction category. A game that use B2P model is the most popular profit model on Twitter, with a value of 0.671. A game with a fighting genre, a good character design, storyline, single-player mode, and a B2P profit model is the most popular game based on Twitter reviews that can be used as innovation in Indonesia game startup.

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# LEVERAGING MACHINE LEARNING TO UNDERSTAND THE EFFECT OF COVID-19 ON THE ECONOMY AND INDIVIDUAL

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***Abstract***

Globally COVID-19 pandemic has caused drastic changes in individual's life in terms of social and economic factors. Many countries have implemented various stimulus packages to combat the pandemic effects. In order to reduce the financial burdens of the citizens, the Malaysian government has created a series of stimulus packages. But there is a significant lag when considering the impact of COVID-19 on the economy and individuals' life. To address this knowledge gap, this paper aims to determine how the pandemic affects the economy and individuals by leveraging data analytics and machine learning techniques. The secondary data of Prihatin Rakyat Economic Stimulus Package first survey from DOSM is used. Research methodology is based on the cross-industry standard process for data mining(CRISP-DM). As the dataset is noisy with missing values and related issues, considerable time is spent on cleaning the dataset before applying descriptive analytics techniques. Supervised and unsupervised machine learning algorithms will be applied to uncover the insights from the dataset. The findings would help to determine the needs and preferences of various types of individuals to lessen their burdens in this pandemic period. Also, this knowledge could be useful to design a personalised recommendation system for future stimulus packages.

***Keywords—COVID-19, Economic stimulus packages, data analytics and machine, B40 group***

## I. INTRODUCTION

The COVID-19 pandemic has caused a global crisis and has created a major impact on the health and economy of many countries (Lim, 2020). According to the statistics from the Ministry of Health, there were accumulated 298,315 confirmed infected COVID-19 cases and 1,121 deaths in 13 states and 3 federal territories of Malaysia until 27th February 2021(Pfordten & Ahmad, 2021). Malaysia had implemented Movement Control Order (MCO) to prevent and control the spread of the COVID-19 on 18th March 2020. Though MCO is the immediate need to combat the pandemic, it has generated multiple ripple effects, causing major economic disruptions as most economic activities were forced to cut back significantly, if not stop completely. Because of the lockdown, employees were forced to work from home and even some businesses were forced to close down due to losses and this made some people had lost their job in this pandemic (Shah et al., 2020). The third stimulus package was released to support SMEs and was called as Prihatin SME Economic Stimulus Package. This package was aimed to secure employees from getting terminated which otherwise will lead to job loss and a high unemployment rate.

Without a source of income, many families could quickly lose access to essentials needs like food or housing (Flanders, Nungsari, & Chuah, 2020). In order to reduce the financial burdens of the citizens, the Malaysian government has created a series of stimulus packages. The first stimulus package was aimed to support the business, tourism and hospitality sector. It also focused on promoting high value-added investments in both the public and private sectors. The second stimulus package is named the Prihatin Rakyat Economic Stimulus Package and implement on 27th March 2020. This stimulus package was created to support the M40 and B40 income groups in easing the financial burden of households and individuals in the form of a direct cash transfer program. Even though the government has taken many actions to reduce the pandemic effect on its people, there is limited knowledge on the real impact on citizens from various income groups and age levels. Department of Statistics Malaysia (DOSM) conducted two surveys to understand how the pandemic affects the economy and individuals. The first survey was conducted between 23rd to 31st of March 2020 prior implementing the MCO and had received 168,145 responses. The second survey was conducted between 10th to 24th 2020, after the first MCO and had received 41,386 responses. These two survey data were made open to the public and researchers (Prime Minister office, 2020) and hence this study is motivated to further extract the insights.

This paper aimed to apply data analytics and machine learning techniques on the first survey data to extract insights that would be helpful to gain a better understanding of COVID-19 impacts on the economy and individuals. The findings would help to determine the needs and preferences of various types of people to lessen their burdens. Also, this knowledge could be useful to design a personalised recommendation system for future stimulus packages.

## II. METHODOLOGY

This research used Cross-Industry Standard Process-Data Mining (CRISP-DM) to plan and execute the project. This methodology consists of 6 phases which are business understanding, data understanding, data preparation, modelling, evaluation and deployment (Schröer, Kruse, & Gómez, 2021). In the business understanding phase, the study's objective identified was to extract the insight from the survey data and determine the effect of COVID-19 on the economy and individuals in Malaysia by applying machine learning techniques. The data understanding phase is to select the right dataset and understand the variables.

In this study, KNIME analytics platform used for executing machine learning and the online survey conducted by the Department of Statistics Malaysia to determine the effects of the COVID-19 pandemic on the economics and status of citizens had been applied. First, the whole dataset translated into the English language from the Malay language. After that, redefine and shorten the variables' names to be more understandable. There are 6,365 rows of missing records found in the dataset. These 6,365 missing records had been filtered and separated into the new table for visualization purposes. Then, the unused variables had been filtered and string manipulation is done in the dataset for more understandable. Lastly, the linear correlation also had been run to view the relationship between the variables. For the data preparation phase, the convert string records into numeric records to do the preparation before building the models. After that, the string variables filtered from the dataset and the normalizer node apply to normalize the dataset. Next, in the modeling phase, the different algorithms will be applied to achieve the objectives of the study. The prediction models will be applied such as decision tree, random forest, and other algorithms to predict the citizens' readiness to cope with the pandemic. Besides, the clustering models will be applied such as K-Means and K-Medoids to predict and identify the group of citizens that need the government's support. For the evaluation phase, the standard metrics results of each algorithm will be compared and evaluated. For the deployment phase, the best performance models will be deployed and review the performance with the study's objectives.

## III. RESULTS/FINDINGS

This paper reports an ongoing study's results which is obtained from descriptive analytics. This study used the secondary data Prihatin Rakyat Economic Stimulus Package survey from DOSM. Survey data has totally 31 variables; 6 variables related to demographic information, 3 variables related to financial preparedness for MCO, 11 variables related to job status and income level, and 11 variables related to changes in lifestyle before and after COVID-19. The majority of the respondents were from Selangor (43,560), followed by Johor (33,341), Kuala Lumpur (13,787), and Sabah (11,359). From the remaining states on average, there were 5860 responses each. This survey has high participation from females (95,158) compared to males (66,622). In terms of financial preparedness to face the pandemic, almost 50% of the participants said not prepared. Their income level stated that the majority from the B40 group. Following the MCO, 30,903 said they faced a reduction in their income while 47,173 said it remained the same.

## IV. CONCLUSION

The research explores the COVID-19 survey dataset by leveraging data analytics and machine learning techniques. The findings would help to determine the needs and preferences of various types of individuals to lessen their burdens in this pandemic period. Also, this knowledge could be useful to design a personalised recommendation system for future stimulus packages.

## ACKNOWLEDGMENT

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# MARKETING STRATEGY OF MOBILE PACKAGE SERVICE TELKOMSEL WEST JAVA REGION

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***Abstract***

This research is initiated based on the underperformance of Telkomsel Regional Jawa Barat in the year 2015 to 2019, despite the massive increase of broadband service usage. Presently, Telkomsel is using a customer segmentation approach based on two basic attributes: Average Rate per User (ARPU) and Length of Stay (LOS), which have not given any significant effect to the Mobile package service sales. This research is done to analyse customers grouping based on the purchasing power and the mobile package service offered in a region to improve revenue. Previous research used only 4 variables as a parameter in segmenting customer behaviour. Additional variables derived from interviews used here and not in any previous research are Total Revenue, International Roaming Revenue, and Other Revenues. Big data analysis of the 7 variables based on Call Data Records (CDR) Summary of around 8 (eight) million subscribers are processed using the K-Means clustering method, resulting in customer grouping. The result will be used as the basis for determining the main target and the right product marketing tactics for Telkomsel Mobile package service in West Java, thus improving ARPU customers and increasing revenue.

***Keywords— mixed-method, segmentation, K-means, big data, mobile package services***

## I. INTRODUCTION

The increasing usage of 4G/LTE technology that offers broadband internet speed is one of the causes of revenue loss from legacy business (voice and SMS). There are more demands on finding a mobile package service that is tailored to suit customers' needs (Arora, A., Vohra, R.,2014). Presently, Telkomsel customer segmentation approach is based on two basic attributes: ARPU and Length of Stay (LOS). The customer segmentation approach conducted by Telkomsel as explained above has not given any significant effect to Telkomsel Mobile package service sales, which negatively impacts Telkomsel's revenue.

Previous research by Sagala, F., Y., P., Ramantoko, G (2018) discussed the most influential variables on Telkomsel broadband revenue. Research by Setiawan, W., B., Tricahyono, D (2019) focuses on Telkomsel's marketing strategy in Increasing penetration of 4G Device associated with 4G network development; not a discussion about the grouping of customers based on the purchasing power in a region and neither the mobile package service offered. This study discusses Telkomsel's marketing strategy for Mobile package service. The result of this data processing is an exact target for Telkomsel mobile package service, based on customer characteristics in each region of West Java.

## II. METHODOLOGY

The phases in this research consist of first segmenting customer's geography based on the community purchasing power level in a region, second determining variables to be processed for segmentation of customer behaviour, and third analysing customer big data based on Call Data Records (CDR) Summary in February 2020 using K-Means clustering with Phyton Jupyter Notebook software.

Customer's segmentation requires knowledge of people purchasing power as it will have an impact on the marketing strategy of Telkomsel Mobile package service in the area. There are 4 indicators that are used as parameters. First, the Human Development Index (HDI). Second, Per capita consumption and expenditure of a month, which is the cost incurred for the consumption of all the household members for a month either derived from the purchase, delivery, and production itself divided by the number of household members in the household (Welfare Indicators 2015). Third, Gross Regional Domestic Product, an important indicator to determine the economic condition of an area within a certain period, either based on the prevailing price or the basis of constant price (Giovanni, R., 2018). Fourth is the percentage of poor people. Poverty is seen as an inadequacy on the economic side to fulfil the basic needs of food and non-food consumption measured from the side of expenditure (BPS Jawa Barat). Fifth, customer grouping based on behaviour using K-Means Clustering. Other four variables are used to determine the behaviour of customers based on telecommunication services used, i.e. broadband, digital service, voice, and SMS based on previous research.

## III. RESULTS/FINDINGS

Determined from the first four variables for Geographic and demographic segmentation are 3 clusters. Cluster 1 consists of 15 (fifteen) regions, cluster 2 consists of 1 (one) region namely the city of Bandung, and cluster 3 consists of 2 (two) areas namely Bandung District and Indramayu.

The next grouping of customers based on behaviour is as follows. On ARPU 2.5K IDR – 49.99K IDR, Cluster 1 is dominated by customers using voice service (45,20%), Cluster 2 by voice and SMS Services (51,58%), and cluster 3 by broadband service (46,82%). On ARPU of 50K IDR – 99.99K IDR, the use of broadband service is 66,46% in Cluster 1, 75,3% in Cluster 2, and 73.18% in Cluster 3. On ARPU 100K IDR – 299.99K IDR, customers using broadband service is 74.1% in Cluster 1, 62.7% in Cluster 2, and 74.98% in Cluster 3. Broadband service also dominates on ARPU IDR 300K IDR – 999,99K IDR, 63.63% in Cluster 1, 47.44% in Cluster 2, and 60.23% in Cluster 3. While on ARPU ≥1.000K IDR customers using Digital service and broadband service dominates by 46.16% in Cluster 1 and on cluster 3 by 47.48%, while voice and broadband service in Cluster 2 is 30.26%.

## IV. CONCLUSION

Segmentation by region/area enables analysis and finding of any indicators to eventually affect the winning in sales of an area. Some areas have high rates of non-adoption of internet access, some of non-adoption is linked to demographic features of users, such as older age, low income, and less education (Greenstein, 2020). The broadband service becomes a service of choice in almost all classes of customers. But even so, the legacy service is still the favourite for some customers within ARPU 2.5K IDR – 49.99K IDR. Said customers are in the group which uses Telkomsel Mobile package service the most. Users of international roaming services are dominated by customers of ARPU 300K IDR – 999,99K IDR and of ARPU ≥1.000K IDR. The customer segment of this service user can be categorized as a niche market that requires special treatment to be further explored.

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# MEASURING E-SERVICE QUALITY OF BEAUTY E-COMMERCE BY USING TEXT MINING

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***Abstract***

Cosmetics consumers increasingly grow more interested in purchasing beauty products over the internet. It emerges many new actors in the beauty e-commerce sector. In encountering industrial competition, it is vital for companies to consider the service quality to fulfill or even surpass customer expectations. Evaluation concerning services is necessary to improve and maintain customer satisfaction and loyalty. Customer opinions in social media are an essential source to be utilized by companies to improve service performance. This study aimed to measure service performance based on the e-service quality dimensions using the text mining approach. Sentiment analysis, multiclass classification, and text network analysis methods help to understand the company service quality from the customers' perspective. This study utilized Sociolla, the leading beauty e-commerce in Indonesia, as an object. The results indicated there are several factors considered by customers, i.e., efficiency, system availability, fulfillment, and responsiveness. These results are obtained from classifying customer opinions using the Naïve Bayes Classifier model with an accuracy rate of 85%. The study also discovered many complaints regarding incompatible goods stock information on the website, difficulties in tracking orders, and difficulties in selecting payment methods.

***Keywords—Beauty E-Commerce, E-Service Quality, Multiclass Classification, Text Mining, Text Network Analysis***

## I. INTRODUCTION

Service quality is considered as the element to define success in the modern service business. It also plays a vital role in maintaining a sustainable competitive advantage (Akroush et al., 2019). Several precedent studies agreed that customer satisfaction and service quality have a positive direct relationship (Colette, 2019). In line with this statement, customer loyalty may develop through a high level of customer satisfaction (Sobihah et al., 2015). Therefore, service quality evaluation and improvement are necessary to achieve customer satisfaction and loyalty. There are several dimensions to measure service quality included in the electronic service quality. These dimensions are divided into two scales. First, e-core service quality (ESQual) consisting of four dimensions, i.e., efficiency, fulfillment, system availability, and privacy. Second, e-recovery quality (ERecSQual) consisting of three dimensions, i.e., responsiveness, compensation, and contact (Ulkhaq et al., 2017).

User-Generated Content (UGC) on social media can be utilized as an information source to understand people's opinions. The available data from UGC are unstructured, a series of data processing should be done in order to gain implicit insights (Jo, 2019). The text mining approach can be employed in the data extraction process to generate fruitful outputs, such as visualization or structured table, to solve a problem (Kwartler, 2017). The study conducts three text mining methods to acquire a comprehensive understanding, i.e., sentiment analysis by categorizing data into positive and negative (Dattu & Gore, 2015), multiclass classification by categorizing data into several service quality dimensions (Alamsyah and Rachmadiansyah, 2018), and text network analysis to deepen the analysis and dig information by observing word distribution, as well as observing the connection between one word with another in a text network (Celardo and Everett, 2019).

The study aimed to measure service quality on beauty e-commerce using the text mining approach based on seven e-service quality dimensions: efficiency, fulfillment, system availability, privacy, responsiveness, compensation, and contact. As a case study, we utilize one of the leading beauty e-commerce in Indonesia, Sociolla. Similar studies regarding the measurement of service quality using text mining were conducted by Alamsyah and Rachmadiansyah (2018), Sari et al. (2018), and Putri et al. (2020) with study objects of online transportation, e-commerce, and online travel agencies (OTA). The current study may provide benefits for the company to assess service quality based on dimensions, map the priority for service quality improvement, and understand the service improvement desired by customers.

## II. METHODOLOGY

The study workflow is categorized into four stages. The first stage is the data collection, where the data utilized are sourced from social media obtained using the crawling technique for three months. The second stage is data preprocessing, consisting of 3 sub-processes, i.e., tokenizing, filtering stopwords, and stemming. The subsequent stage is the main process comprising three methods, i.e., sentiment analysis by categorizing data into positive and negative, multiclass classification by categorizing data into seven e-service quality dimensions, and text network analysis by visualizing text networks. The classification model employed in the sentiment analysis and multiclass classification was the Naïve Bayes Classifier (NBC) because it has a low computation cost with a high accuracy level (Franco et al., 2019). The final stage is summarization, where the researchers obtain the results of all analysis processes.

## III. RESULTS/FINDINGS

The results of sentiment analysis and multiclass classification using the Naïve Bayes model demonstrate an accuracy of 85.33%. It indicates that data are classified properly. The most popular service quality dimensions for social media users are fulfillment by 43%, followed by system availability by 20%, efficiency by 18%, and responsiveness by 8% from the total data. Fulfillment and responsiveness dimensions obtain more positive sentiments for 57.23% and 63.16%. In contrast, system availability and efficiency dimensions obtain more negative sentiments for 92.68% and 82.98%.

The processing results using the text network analysis method show that the most popular topics in the fulfillment dimension are abundant discounts and fast delivery. The popular topic in the responsiveness dimension is the quick response from customer services to handle customer problems, especially regarding the refund process. In the system availability dimension, the most popular topic is the difficulty in tracking orders. Meanwhile, popular topics in the efficiency dimension are the incompatibility of stock information on the web and the difficulty in selecting payment methods.

## IV. CONCLUSION

The study shows that the text mining approach can be utilized to measure service qualities based on the customer perspective. Sentiment analysis, multiclass classification, and text network analysis methods generate in-depth understanding and novel insights to improve service quality. The results demonstrate that Sociolla has to consider the system availability and efficiency dimensions, particularly regarding the order tracking, stock information on the website, and the easiness of selecting payment methods. Furthermore, several services have to be maintained, e.g., fast delivery, abundant discounts, and quick response from customer service in handling complaints to maintain customer satisfaction and loyalty.

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# MOBILE APPLICATION SERVICE QUALITY ANALYSIS USING SENTIMENT ANALYSIS AND TOPIC MODELING FOR TOP-UP GAME APPLICATIONS

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***Abstract***

Game top-up services are not only accessible using the website but also through the mobile application. Mobile application service quality analysis is required by using Mobile Application Service Quality (MappSql) to maximize application services. The method used in this research is Sentiment Analysis with the Support Vector Machine (SVM) algorithm and Topic Modeling with the Latent Dirichlet Allocation algorithm. The SVM algorithm can classify positive and negative sentiments of itemku and Dunia Games users well, with an accuracy of 84.47% and 87.79%. Topic Modeling can show the lack in itemku and Dunia Games according to the dimensions of MappSql. From the shortcomings that appear, this research provides solutions to itemku and Dunia Games to overcome them and explain the positive impact after fixing them. A hierarchy ward has simplified the topics contained in user reviews.

***Keywords—Sentiment Analysis, Support Vector Machine, Topic Modeling, Hierarchical Ward, Mobil App Service Quality***

## I. INTRODUCTION

Indonesia also contributed Rp. 8.7 trillion for mobile gaming in 2019 (selular, 2019). The contribution of mobile gaming is inseparable from purchasing items, accounts, game currency, and game top-up from e-commerce that provides a platform for game purchases. In Indonesia, itemku and Dunia Games provide mobile application services for a game top-up. That applications are available in the application store. Application stores provide space for users to review the applications used by giving ratings and feedback in text. Reviews provided by users contain information related to the application such as bugs, the user experience of certain features, requests to improve something, even ideas for new features (Maalej & Nabil, 2015). Reviews on the store reflect positive and negative emotions from users (Guzman & Maalej, 2014).

Sentiment analysis can be used to see the opinions, sentiments, and emotions in user reviews (Ravi & Ravi, 2015). The machine learning approach can be used to explore user sentiment because it can classify text with high accuracy (Masrury, Fannisa, & Alamsyah, 2019). Based on Vyas and Uma (2018) research, the SVM algorithm can outperform Naïve Bayes, characterized by higher accuracy.

Negative emotions from users may be given when the user perceives a bug in the application, while the user experience may also be combined with positive emotions (Pagano & Maalej, 2013). When making bug repairs, the developer needs to know what parts need to be fixed, and topic modeling can be used to find that out.

Companies need to measure how the company's quality of service can fill the space in service quality and fulfill their responsibilities in customer relationship management. Mobile Application Service Quality (MappSql) can be used to measure the service quality of mobile applications (Masrury, Fannisa, & Alamsyah, 2019).

## II. METHODOLOGY

This research consists of several stages, starting from data collection, data preprocessing, sentiment analysis with the Support Vector Machine algorithm, topic modeling with the Latent Dirichlet Allocation algorithm, and perform an analysis of the results obtained. Data collection was carried out using scraping techniques. The data collected is user review data for itemku and Dunia Games on Google Play Store.

## III. RESULTS/FINDINGS

The performance results of the SVM algorithm can be seen based on its accuracy. The highest accuracy for itemku is obtained in the 70:30 dataset division of 84.47%, and for Dunia Games it is 60:40 of 87.79%. Both have low variance values.

For MappSql in Itemku, the assurance dimension has the most reviews on positive views, namely 32%, followed by functionality at 31%, customization at 14%, design by 11%, fulfillment 8%, and service recovery by 4%. While in negative sentiments, the dimensions of customization are 27%, functionality is 25%, assurance is 19%, fulfillment is 18%, design is 6%, and service recovery is 5%. In Dunia Games, the functionality dimension has the most reviews on positive views, namely 36%, followed by customization by 30%, assurance at 24%, fulfillment by 7%, design by 2%, and service recovery by 1%. While in the negative sentiments, the functionality dimension is 60%, fulfillment is 16%, assurance is 9%, customization is 9%, design is 6%, and service recovery is 0.34%.

The topic modeling method used can display the problems that exist in itemku and Dunia Games. Based on these problems, solutions can be drawn and suggested to itemku and Dunia Games.

The topic with the highest coherence value for itemku and Dunia Games is t_6 with 0.186972935 and t_14 with 0.311417983. The topic with the highest coherence value has the highest topic quality, which means that the topic's words are related to each other. The number of existing issues can be reduced from 20 to 3 by looking at the similarities between subjects.

## IV. CONCLUSION

SVM algorithm used to classify positive and negative sentiments can work well. It is indicated by the accuracy results obtained. The highest accuracy for itemku is 84.47% for the 70:30 dataset, and for Dunia Games it is 87.79% for the 60:40 dataset. The variance value obtained is small; it indicates the diversity of the relatively low accuracy values.

In the last five months, itemku users' sentiments were 41% for positive and 59% for negative views. Meanwhile, for Dunia Games, users' positive was 18% and 82% for negative sentiments. Both applications have negative emotions higher than positive; both have not provided services that can satisfy users.

At MappSql, the most discussed dimension on itemku is the assurance dimension for positive sentiments of 32% and customization dimensions for negative emotions of 27%. In Dunia Games, both positive and negative views have 36% and 60% functionality.

From the results of topic modeling that focuses on negative sentiments, topic modeling can determine deficiencies in the application. In the previous chapter, a solution was given to overcome the weaknesses in both applications. Using the most reference dimensions discussed in each application, itemku prioritizes service improvements in the customization section, while Dunia Games prioritizes service improvements in the functionality section.

Based on the coherence value and hierarchical ward results, the topics t_4 in itemku and t_16 in Dunia Games are of the highest quality, which means that the words in the issue are interrelated.

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# MODELLING BIG DATA ANALYTICS CAPABILITY FOR SUSTAINABLE INNOVATION PERFORMANCE IN SMALL & MEDIUM ENTERPRISES

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***Abstract***

This study investigates how small and medium enterprises (SMEs) in Malaysia develop big data analytics (BDA) capability for sustainable innovation performance. By integrating the resource-based view, dynamic capability, and sustainability literature, this study posits that SMEs can achieve strategic integration by deploying BDA capability to shape sustainable business strategies. Specifically, BDA is considered an organizational capability that depends on how the resources are deployed to support sustainable performance by creating innovative capability. This study will adopt mixed (qualitative and quantitative) methods in collecting and analyzing data from the manufacturing SMEs in Malaysia. The findings will have implications for policymakers and management in nurturing SMEs' digital transformation for innovation and sustainable performance via the assessment of the SMEs resources and capabilities for BDA.

***Keywords—big data analytics, dynamic capability, resource based view, sustainable innovation***

## I. INTRODUCTION

Existing studies have demonstrated how organizations have leveraged big data analytics capabilities in enhancing transparency, coordination and decision making in their supply chain. By facilitating collaboration among supply chain partners, big data can enable an organisation to address environmental, social and governance issues, thereby contributing to sustainable outcomes. Despite the increasing interest in applying big data predictive analytics in sustainable performance, studies have mainly presented conceptual and anecdotal evidence [1], [2]. There is a consensus among scholars that our current understanding of the application of big data predictive analytics on sustainability is limited, making it difficult to reach a meaningful conclusion [3]. Furthermore, the few studies have mostly focused on large firms with considerable resources to support digital technologies investment. Besides resource constraints, small and medium enterprises (SMEs) are characterised by the owners' direct involvement in the management, closer link to business partners and other stakeholders. By adopting BDA, SMEs will be able to rapidly structure, process and analyse massive data to enhance decision making and stimulate sustainable growth for global competitiveness. The national policy on industry 4.0 offers a blueprint on propelling SMEs to adopt big data analytics (BDA) to support Malaysia in achieving the United Nations sustainable development goals (SDGs) [4]. Therefore, the adoption and application of big data analytics necessitate the prioritisation of factors that can facilitate SMEs' sustainable performance. Against this backdrop, the proposed study will investigate how SMEs develop big data analytics capabilities and its implications in innovation and sustainable performance.

## II. METHODOLOGY

By integrating the resource-based view, dynamic capability and sustainability literature, this study posits that SMEs can achieve strategic integration by deploying BDA capabilities to shape sustainable business strategies. Specifically, BDA is considered an organisational capability that depends on how the resources are deployed to support sustainable performance. Following the qualitative approach, initial data will be collected through interviews with top management of SMEs to identify the relevant issues of BDA adoption. The qualitative study outcome will be integrated with existing literature in developing a survey that will be analysed using the structural equation modelling technique. The expected findings will enable the SMEs to prioritize the key resources underlying BDA capability to support sustainable innovation.

## III. RESULTS/ FINDINGS

The proposed study will support the digital economy initiatives by investigating the diffusion of BDA capabilities among Malaysia's local SMEs. Thus, the findings will offer insights to the policymakers and firms management on how BDA capabilities emerge among the SMEs and the implications of these capabilities on innovation and sustainable performance. These will help shape policies to nurture SMEs' digital transformation for innovation and sustainable performance by assessing the SMEs resources and capability for BDA. Besides, this study's findings will promote awareness of BDA capability among SMEs by demonstrating the organisational resources essential to leveraging big data analytics to support decision-making and business growth through innovation and sustainable performance.

## IV. CONCLUSION

This study conceptualises the determinants of BDA capability andits implication on sustainable innovation performance in SMEs. The subsequent empirical investigation will prioritise the resources underlying the BDA capability and sustainable innovation performance. The expected findings will have implications for research and practice


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# SENTIMENT ANALYSIS OF SMARTPHONE PRODUCT ON TWITTER USING NAÏVE BAYES AND SUPPORT VECTOR MACHINE

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***Abstract***

Twitter can be very valuable for the companies because it produces data tweets that can contain perceptions from consumers about their products. This study takes data from Twitter that contains consumers' perceptions about iPhone 12 *series* to do the text mining with sentiment analysis. This study aims to conduct a sentiment analysis to determine the positive and negative perceptions of Twitter users about iPhone 12 series and to present the results. The used method is Naïve Bayes and SVM. The performance test indicates that Naïve Bayes has an accuracy score of 82,20% and SVM has a higher accuracy score which is 91,85%. It shows that the model built by both methods predicts sentiments well. The POS Tagging was carried out too to find the quality of any iPhone 12 series parts discussed by Twitter users. It indicates that there are eleven parts of the iPhone 12 series discussed by Twitter users, which is camera, design, overall, battery, performance, screen, network service, price, features, accessories and speakers. The biggest positive perception is obtained by the camera and the negative perception is obtained by the design.

***Keywords—Twitter, Naïve Bayes, Support Vector Machine, POS Tagging, Smartphone***

## I. INTRODUCTION

At this time, the era has turned into a modern era which makes the internet a natural thing. The world community currently likes to use social media which is part of the internet (Nugroho, 2018). One of the social media that can make it easier for people to express their opinions is Twitter. Twitter is often used by netizens to exchange the information, opinions, and facts that are hotly discussed in real-time. All of the data containing information and opinions on Twitter forms very large data or is called Big Data (Rustiana & Rahayu, 2017).

Currently, smartphone companies continue competing to market their products not only through conventional sales but also through online stores. This makes conversations on social media of course contain positive and negative sentiments in the form of opinions from the public regarding their perceptions about the smartphone products they use or they will buy. Various positive and negative perceptions can be used by the smartphone company to get any information about the advantages and disadvantages of a product, including Apple Inc. which just launched the iPhone 12 series.

Apple Inc. is a Large technology company with the highest brand value in the world (Interbrand, 2019). Even though it is considered to have the highest brand value in the world, according to research conducted by IDC (2020), Apple still cannot get first place in the smartphone market share in the world. Therefore, Apple Inc. can take advantage of information obtained from public opinion on Twitter to find out the market opportunities for the iPhone. Text mining with sentiment analysis can be a way to process valuable information from Twitter regarding perceptions of iPhone 12 series products so that for further product development, Apple Inc. can see how smartphone products are desired by consumers and what features should be developed so that can help Apple Inc. increasingly meet the needs and satisfaction of consumers and be able to achieve wider market share in the world.

## II. LITERATURE REVIEW

Sentiment analysis can be defined as a branch of research from Text Mining which is useful for classifying text documents in the form of opinions based on sentiment (Rofiqoh et al., 2017). Naïve Bayes Classifier is a classification method using probability and statistics found by Thomas bayes (Mustafa et al., 2017). Support Vector Machine has a basic linear classifier principle, but SVM has been developed to work on non-linear problems by incorporating the kernel concept in a high-dimensional workspace (Octaviani et al., 2014). POS Tagging can be defined as the process of labelling each word in a sentence with POS or tags that match the type of the word (Mulyanto, 2017). The previous research from Tuhuteru et al. (2018) examined the Sentiment Analysis of the Ambon branch of the State Electricity Company using SVM with 81,67% accuracy score and Naïve Bayes with 67,20% accuracy score. Suprianto et al. (2019) regarding the comparison of the Naïve Bayes and Holistic Lexicon Based Methods, in this study the Naïve Bayes uses training data to perform sentiment analysis and got 80% of accuracy score, while the Holistic Lexicon Based uses an adjective dictionary to determine sentiment analysis and got 70% of accuracy score.

## III. CONCEPTUAL FRAMEWORK

In the conceptual framework, the first thing to do is crawling the tweets data that related to the iPhone 12 series. After that, the raw data will go through a pre-processing or cleaning process to clean the data that is not needed in this study. After obtaining the clean data, a sentiment labeling process was carried out on the data which manually classify the data into positive or negative. After the data is labelled, the process will be divided into two parts. The first is the performance evaluation of the data that has been labelled manually, using the Naïve Bayes and Support Vector Machine method. Performance evaluation is carried out using the KNIME version 4.2.3 software to test whether the manual sentiment labelling process is correct and accurate. And after that, a confusion matrix is obtained to calculate the recall, precision and accuracy score which becomes a benchmark that the manual labelling is good. After obtaining a high accuracy value, the second process is carried out, which is the POS Tagging process using the KNIME version 4.2.3 software on the data that has been labelled with sentiment. POS Tagging is the process of giving word types to each word in the data. The aim of the POS Tagging process is to find out the quality of any iPhone 12 series parts in the tweets that can be used as a label, based on the result of the noun (NN) obtained from POS Tagging. After that, the quality labelling process on data is carried out using the label from the POS Tagging results, which is to classify each of the data according to the quality discussed. And the final result is a visualization using the word cloud to determine the quality of the iPhone 12 series parts that get positive perceptions and the quality of the iPhone 12 series parts that get negative perceptions based on what words are often discussed by twitter users in each class of sentiment and the quality of the iPhone 12 series parts.

## IV. CONCLUSION

Sentiment Analysis was conducted to find out how the positive and negative perceptions of Twitter users regarding the iPhone 12 series and also showed how the results of the positive and negative perceptions of Twitter users regarding the iPhone 12 series based on the most frequently showed words.

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# SERVICE QUALITY ANALYSIS OF MHEALTH SERVICES USING TEXT MINING METHOD (CASE STUDY: HALODOC, ALODOC)

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***Abstract***

Digital health is a scope of study on health services and digital technology including innovations mHealth. The health industry in Indonesia continues to grow very rapidly with an annual growth rate of more than 60%. Even though mHealth creates a positive change, there are concerns regarding service quality. However, the increasing number of health service providers raises concerns regarding the quality of service. Service quality can affect user satisfaction, subsequent usage, and quality of life of services health. This study analyzes the service quality of MHealth Application with the guidelines of health service quality using text mining methods, namely sentiment analysis, and multiclass classification. Data is collected based on User-Generated Content from the Google Play Store as the user reviews of Alodoc and Halodoc. Results of this research are expected to provide recommendations for improving quality services mHealth based on the dimensions that have low quality.

***Keywords— Digital Health, Health service quality, Text Mining***

## I.INTRODUCTION

Digitization of health services has led to major changes in consumer expectations of the services offered. Also, health service providers are increasingly competing to develop smartphone-based digital health services called mHealth. The increasing number of healthcare providers raises concerns regarding the quality of service. There are deficiencies in service quality that can affect user satisfaction, subsequent use, and the quality of life of health services (Rodhiani, Nurcahyo, & Dachyar, 2020). Therefore, understanding user perceptions of service quality is an important dimension to determine the quality of the mHealth platform.

## II. LITERATURE REVIEW

According to (Fitzsimmons & Fitzsimmons, 2011) Service is an economic activity that is most often offered by one party to another party using time-based performance to produce what the recipient wants or in the form of other objects or assets that are the responsibility of the buyer. Service is an intangible yet long-lasting experience for customers who act as co-producers. Digital health or also known as telehealth (telehealth) is the use of telecommunications to provide information and health services widely to improve the quality of public health (Sunjaya, 2019). Mobile health (mHealth) is a system that utilizes smartphone technology or wireless communication devices to improve the quality and efficiency of health services (Barutçu, 2019).

To increase customer satisfaction, maintain future use, and maintain the quality of life of health, it is necessary to measure service quality (Akter, D'Ambra, & Ray, 2010). Through technical developments in data analysis, a new approach has emerged that can track and analyze indicators related to user acceptance and use of the system. The online user review system is a User Generated Content system as a channel for extracting user feedback as an effort to develop health information technology (al-Ramahi & Noteboom, 2020).

## III. CONCEPTUAL FRAMEWORK

This study develops concepts from the adoption of research by (Akter, D'Ambra, & Ray, 2010) modelling service quality for health services consisting of three major variables. The first variable, perceived platform quality, includes quality of the mobile network, ease of access, availability, privacy, and security. Second, perceived interaction quality between doctors and users related to competence, credibility, manners, insight, customization, and assurance. Third, perceived outcome quality, which includes matters related to functional and emotional benefits for users.

## IV. METHOD

In this study, the data were analyzed quantitatively by using a text mining analysis approach. The application of text mining in this study consists of sentiment analysis and multiclass classification. The data collection for this research uses the technique of scraping on the platform Google Play Store with the Python language programming algorithm, especially in the mHealth applications Halodoc and Alodoc. In this study, sentiment analysis is a tool to identify user opinions based on their experiences, both positive and negative, related to the quality of health services. This study uses a method of multiclass classification to map reviews of service users' health by understanding the topic or subject of discussion based on three dimensions of mHealth Service Quality.

## V. CONCLUSION

This study analyzes the two most popular mHealth applications in Indonesia, the quality of Halodoc and Alodoc in the Google Play Store. The results of this study are expected to provide recommendations for improving the quality of health services based on the dimensions that have low quality. Besides, they can collaborate with the government in making health services by considering the evaluation of service quality dimensions.

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# SERVICE QUALITY ANALYSIS OF MOBILE SHOPPING APPLICATION TOKOPEDIA

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***Abstract***

Shopping activities using smartphones with online shopping applications are something that is widely used by Indonesians. In Indonesia, several online shopping applications compete with each other to attract many users, one of which is Tokopedia. Tokopedia is the first e-commerce but rank third place in the number of users compared to other mobile shopping applications, from SimilarWeb.com (2020). It is necessary to conduct research on the quality of Tokopedia, so the results of the research can be used to evaluate and make improvements and development. To determine the quality of shopping applications can be measured by Mobile Apps Service Quality which has 7 dimensions: responsiveness, information, security and privacy, design, performance, technical reliability, valence. These dimensions will be measured based on user-generated content, user reviews of Tokopedia taken on the Google Play Store website, because a lot of review data, this research using big data analytics and is processed using the text mining method. To obtain information that can be used as evaluation material, and hopefully can be used to improve the quality of Tokopedia application, besides, also find out the differences text network in the review of Tokopedia based on the version of the application reviewed.

***Keywords—Tokopedia, Big Data Analytics, Mobile Apps, Text Mining, Sentiment Analysis***

## I. INTRODUCTION

Indonesia is one of the countries with mobile shopping application users who have a lot of enthusiasts, there is a competition between mobile shopping application developers is something which is currently being discussed a lot. Tokopedia is a mobile shopping application developed directly in Indonesia, from SimilarWeb.com (2020), Tokopedia is still inferior to other shopping applications such as Shopee and Lazada. To find out how the sentiment of Tokopedia users, this research took the data from the Google Play Store website the content is user reviews, so the text mining method used to find out perceptions, using sentiment analysis about their experiences, such as criticisms or suggestions for Tokopedia. UGC online differs from the main user method in that the user does not send any requests or solutions to the developer. Instead, they discuss the product, including its strengths, weaknesses, and effectiveness, on social media. Companies can use this information to study and improve their products (Nga N & Ho-Dac, 2020).

User reviews can be used by developers or companies to know the customer expectations, and they must have references for improving the quality of existing features. Positive and negative reviews given by users are useful, and it's because feature development of the application must match with the expectations of users with different backgrounds, therefore the sentiment analysis method is used in this research. Due to the large amount of data used as a source of data in this study, the ability of big data to process information is used to conduct this research. Nasukawa and Yi (2003) in Martin-Domingo, etc. (2019) define sentiment analysis as a big data analytic method that serves to identify sentiment polarity in expressions or judgments made by consumers. Research on customer satisfaction is something important and useful and must do the quality research for every industry, it's because evaluating customer satisfaction and service quality is the main goal for service companies that want to survive in increasing competitiveness in the market (Alnaser, Khalid, & Alshoura, 2014).

This research, analyzing the sentiment of user and their perception of Tokopedia, by using the sentiment analysis method. Tokopedia shopping application based on positive and negative sentiments of users who use the application, then using the multiclass classification method to map user perceptions based on reviews with 7 dimensions of multiclass classification to figure out the quality of mobile shopping applications. When there is one dimension that gets more negative sentiment than positive sentiment, the result of this research will determine the quality of the feature that needs improvement. Another method is text network analysis to see the quality of the mobile shopping application in the form of a text network based on each version of the application. This research is expected to be used as input to develop the quality of the mobile shopping application. And to see how the text dynamics of the quality of mobile application services in the form of text network analysis, the text network analysis method is done, later it will be known how to identify each text that represents the dimensions of cellular application service quality.

## II. LITERATURE REVIEW

The mobile shopping application provides other services apart from the interface of the seller and the buyer. In the mobile shopping application, the most attractive services from the mobile shopping application using online surveys include dimension, price, monetary, convenience and situational value information (Rudolph, Nagengast, Melanie, & Bouteiller, 2015). This new technology in the field of buying and selling answers the needs of consumers and sellers, in processing data and instruments depending on the needs of each user (Araste, Mansouri, Foruzand, & Ganj Khanloo, 2015).

Research on customer satisfaction is something that must be done by every industry, this is because evaluating customer satisfaction and service quality is the main goal for service companies that want to survive in an increasingly competitive market (Alnaser, Khalid, & Alshoura, 2014). One of the types of big data in research is to use User-Generated Content (USG) data because the sources vary, ranging from data reviews, comments, or tweets from personalities on social media that they upload themselves based on their respective perceptions (Liu, Shan, Ballet, & Fang, 2017).

Sentiment analysis is a data mining technique used to measure the emotional polarity of consumers (positive and negative) and attitudes towards a particular topic (Gitto & Mancuso, 2017).

## III. CONCEPTUAL FRAMEWORK

Reviews provide by users application are the experience using Tokopedia application, based on this research can be used to measure using the sentiment analysis method to looking out the negative and positive sentiments from users, which will then be measured using the multiclass classification method to measure based on the 7 dimensions of mobile shopping application service quality, besides it will also be seen how the perceptions of Tokopedia users based on responsiveness, information, security and privacy, design, performance, technical reliability, and validity, and finally to see how trends are from user reviews, see the text network analytics that is formed on a review of each version of the application.

## IV. METHODOLOGY

This research is quantitative research with a descriptive research type, to know and describe how sentiment users, based on review Tokopedia about the quality of the application. The data in this research were taken from the Google play store website in the review section using the data scraping method, data that was successfully retrieved was a 6-month review data from July 2020-December 2020, the total data collected was 21,584 reviews. After got the big data then the pre-processing will be carried out to delete incompatible data. After data is clean, it is further divided into 70% - 30% to be used as training data 70% and data testing 30%, using machine learning method, analysis techniques, and multiclass classification are carried out using RapidMiner software, after the data cleaning process, then labelling each review user, the first is positive and negative sentiments. The last one with a label based on the 7 MASQ dimensions to carry out the multiclass classification stage.

## V. CONCLUSION

The results of this study are expected to be used as an illustration for application developers that published on the Google play store or Apps Store that the review data provided by application users can use as material for application evaluation, how better development will be in the future. The importance of data in decision-making can be very useful for the continued success of an application and can be accepted by the users.

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# SOCIAL NETWORK ANALYSIS AND TOPIC MODELLING FOR MARKETING TACTICS ON SOCIAL MEDIA

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***Abstract***

The rapid development of technology in the last decade has increased the number of technology-based products and services available in Indonesia, including technology-based education services (EdTech). The increased competition in the EdTech sector requires companies to adopt the right marketing strategy and use it to be more effective and efficient in maintaining their business position. Now days company's marketing activities have involved technology to support the achievement of marketing goals, one of them is by using social media Twitter. User-generated content on Twitter can be used by companies as a source of market research. This study aims to process and analyse user-generated content on Twitter to generate useful insights, namely communities, influential actors, as well as topics discussed by communities. Communities and the most influential actors in social networks can be found through social network analysis, while topic modelling is used to find topics of discussion. This market insight later used to design marketing tactics on Twitter.

***Keywords—marketing, social media, edtech, social network analysis, topic modelling***

## I. INTRODUCTION

Education is one of the vital means for individual development. Now days, education utilizes technology to deliver learning, which is proven to have positive effects in improving the interactivity and appeal of students (Raja & Nagasubramani, 2018). Until February 2019, Indonesia has 60 EdTech start-ups (World Bank, 2020). It shows the high level of competition in such a market. One of the EdTech start-ups in Indonesia is Zenius which is the best Indonesian EdTech start-up in 2017 (Zenius Education, 2020), and 2019 (Soebijoto, 2019). However, in 2020, this position is replaced by other start-ups, even younger ones. Therefore, it is crucial for Zenius to establish an appropriate company strategy to improve its competitiveness, including its marketing strategy on social media. In arranging an excellent social media marketing strategy, the initial step is to listen to the market to acquire valuable information (Chaffey & Smith, 2017). The company can utilize user-generated content on social media as data sources regarding customer information (Olmedilla et al., 2016), e.g. information about communities, influencers, and topics of discussion on social media. Information about communities on social media can help the company to establish a robust and long-term relationship with customers (Chang et al., 2019). Influencer identification may aid the company to connect and work with experts that the market trust (Scott, 2020). Meanwhile, comprehension about topics of discussion can facilitate the company to determine an interesting topic to stimulate conversations with customers on social media (Chaffey & Smith, 2017).

## II. METHODOLOGY

Data used in this study was user-generated content regarding Zenius on Twitter. The volume and characteristics of that unstructured data force the necessity to have a particular technique and method in transforming data into fruitful information (Olmedilla et al., 2016). Social network analysis is a mapping and measurement of relationships and tides among people, organizations, computers, or other entities that processing information (Sammut & Webb, 2017). Social network analysis in this study was conducted to identify communities by measuring the interrelatedness ratio between actor in one cluster with other clusters in a social network, where such a measurement is called modularity (Indrawati & Alamsyah, 2017). Meanwhile, influencers can be identified by measuring the centrality metric, i.e., degree centrality, betweenness centrality, closeness centrality, and eigenvector centrality (Setatama & Tricahyono, 2017). Degree centrality is the metric measuring the direct relationship of an actor (node) with other actors in a social network (An & Liu, 2016). Betweenness centrality is the measurement to discover a node's frequency in becoming the part of the shortest path passed by other nodes in a network to connect (Houston et al., 2017). Closeness centrality is utilized to measure the closeness of a node with other nodes, performed by calculating the average distance between one node and all nodes in the social network (Setatama & Tricahyono, 2017). Eigenvector centrality is a measurement to discover the pivotal node in a social network, the node becomes pivotal when it is connected to crucial nodes or connected with many other nodes in the network (Farooq et al., 2018). Meanwhile, topic modelling is a method commonly used to extract data and identify hidden topics in a document (Laoh et al., 2018). Moreover, latent dirichlet allocation is the appropriate topic modelling method because it generates topics in a document and words that explain such topics. The results of these three analyses were qualitatively analysed with experts to arrange marketing tactics in social media.

## III. RESULTS/FINDINGS

This section contains results of the metrics calculation, words of the topics, and results of the qualitative analysis. Modularity measurement in this study shows there are 354 communities formed in Zenius' social network, and the biggest one is community number 21 that consists of 11.16% nodes from the network. Moreover, the most prominent node or influencer in community number 21 is the account "@ngupilah". Meanwhile, topic modelling results indicate reviews and promotions of Zenius' college entrance examination materials are the topics of discussion in the network. The qualitative analysis provided marketing tactics on social media that Zenius should apply on Twitter, i.e., Zenius should target community number 21 as the target market and cooperate with account "@ngupilah" to distributed marketing content.

## IV. CONCLUSION

Based on the calculation results and qualitative analysis in this study, it can be concluded as a list of social media marketing tactics that Zenius should apply on Twitter.

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# THE ANALYSIS OF TWITTER USER TRUST ON TOKOPEDIA USING THE TEXT MINING METHOD

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***Abstract***

The Global Digital Report of 2021 proves that almost 60% of the Indonesian population is connected with internet networks. It causes many people to use the internet, such as accessing social media and having e-commerce transactions through marketplaces. Tokopedia, one of the Indonesian marketplaces, experiences performance declining, such as customer data leakage, marketplace rank decrease from the previous year, and its brand performance falls under several marketplaces in Indonesia. It poses a poor image for Tokopedia, such as trust. The study aimed to understand Twitter user trust in Tokopedia based on the e-commerce trust factor model using the text mining method and discover the marketing strategies that Tokopedia should carry to improve trust. The study employed the text mining method, i.e., multiclass classification and sentiment analysis, to observe Twitter user trust on Tokopedia. The study results show that Twitter user trust in Tokopedia was poor. Also, perceive privacy and perceived risk factors had the highest negative percentages. It should be the paramount consideration and evaluation for Tokopedia to improve each factor's trust to determine the appropriate marketing strategy.

***Keyword—Tokopedia, Trust, Text Mining***

## I.INTRODUCTION

Indonesia is one of the internet-using countries. The Global Digital Report of 2021 proves that almost 60% of the Indonesian population is connected to internet networks (We Are Social, 2021). According to The British research institute, Merchant Machine, Indonesia is the country with the fastest growing e-commerce industry in the world (Merchant Machine, 2019). Tokopedia is an Indonesian marketplace which in May 2020, was declared to have data leakage. Surveillance by the Indonesian Cyber Research Institution (CISSRec) in July 2020 found that the link to download 91 million Tokopedia account data remained accessible, and 58 members have downloaded them (CNBC Indonesia, 2020). Tokopedia was initially the most visited marketplace in quarter II of 2019. However, in the quarter II of 2020, its rank decreased to the second (iPrice, 2021). Also, Tokopedia’s Top Brand Index of 2020 was under other marketplaces, such as Lazada, Shopee, and Blibli (Top Brand Award, 2020). Based on several precedent events, Tokopedia experiences a performance decline observed from its competition that falls under other marketplaces, causing a poor image, e.g., trust. A study by Microsoft and International Data Corporation (IDC) Asia/Pacific in 2019 explained that only 44% of Indonesian customers believing that their personal data are managed excellently by digital service organizations (Microsoft Indonesia, 2019). Tokopedia must compete with other marketplaces from the trust aspect. Trust on Tokopedia was observed by discovering trust factors that most perceived by customers through observing sentiment analysis percentage of each factor, i.e., internet experience, perceived privacy, perceived risk, perceived security, and perception of website quality.

## II. METHODOLOGY

The study used the text mining method which aims to detect previously unknown information by extracting them automatically from various text-based sources (Salloum et al., 2018). It was carried out by taking data from Twitter concerning Tokopedia. The keywords used in this study are the words Tokopedia, tokped, @tokopedia and @TokopediaCare. The total data obtained were 10,000 tweets and clean data were 2006 tweets. The text mining process comprised multiclass classification, i.e., a classification method with over two target classes (Alamsyah & Rachmadiansyah, 2018) and sentiment analysis, i.e., a branch of text mining aiming to describe a review into specific classes (Lutfi et al., 2018). This process utilized the Naïve Bayes classification.

## III. RESULT/FINDINGS

The study results demonstrate the Naïve Bayes classification's performance values, with a recall value of 60.84%, precision of 57.01%, accuracy of 62.45%, F-Measure of 0.588, dan kappa of 0.461. The five results obtained fairly high values, where the kappa value of 0.461 indicates that the kappa was moderate if it is above of 0.41 (Landis & Koch, 1977).

The sentiment analysis results obtained a positive value of 45.90% and a negative value of 54.10%. Furthermore, there were sentiment percentages on each trust factor regarding Tokopedia. The first factor was internet experience, obtaining a positive value of 59.19% and a negative value of 40.81%. The second factor was perceived privacy, obtaining a positive value of 5.88% and a negative value of 94.12%. The third factor was perceived risk, obtaining a positive value of 1.53% and a negative value of 98.47%. The fourth factor was perceived security, obtaining a positive value of 94.94% and a negative value of 5.06%. The last factor was a perception of website quality, obtaining a positive value of 52.56% and a negative value of 47.44%.

## IV. CONCLUSION

Tokopedia users trust was poor because the negative sentiment was more than the positive ones. Also, each trust factor's sentiment results show that the most factors with negative responses were perceived privacy and perceived risk with high differences of negative and positive percentages. It should be a crucial consideration for Tokopedia to improve trust in each factor, particularly in perceived privacy and perceived risk. Moreover, it should be the suggestions and evaluation for Tokopedia to determine the appropriate marketing strategy.

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# DIGITAL INNOVATIVE AND EDUCATION

# A CONCEPTUAL FRAMEWORK: THE INFLUENCE OF DIGITAL LITERACY ON MITIGATING MISINFORMATION IN SOCIAL MEDIA

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***Abstract***

Despite the effectiveness of social media as a platform to disseminate information, create awareness, and establish connections, social media companies have also been under tremendous pressure about their proliferation of misinformation on their platforms. Misinformation itself is not a recent development and has become prominent news in recent years. Researchers accentuate that misinformation in social media can be mitigated through digital literacy competencies. Although giant companies like Facebook have implemented extensive anti-fake-news strategies, there is still a striking absence of research on how young adults, being the largest users of social media can be educated on what is true through digital literacy. This paper seeks to propose a conceptual framework to highlight the different domains of digital literacy for young adults to cultivate to perform the necessary due diligence to verify and validate information to distinguish between facts and fake news.

***Keywords—digital literacy, misinformation, fake news, computer literacy, social media***

## I. INTRODUCTION

Social media technologies such as social networking sites, blogs, and microblogging tools have become reliable platforms for sharing information to target audiences promptly. Social media applications make it easy to disseminate information, including misinformation. Misinformation is false or inaccurate information regardless of an intention to deceive. Misinformation on social media can thus quickly reach many individuals, which can cause confusion and unnecessary anxiety among the public (Guess et al., 2020; Jones-Jang, Mortensen, & Liu, 2021). Researchers emphasize that digital literacy competencies can increase discernment between mainstream information and fake news (Jones-Jang et al., 2021; Guess et al., 2020). Although extensive anti-fake-news strategies have been implemented by social media companies like Facebook, there is still a striking absence of research on how young adults, being the largest users of social media can be educated on what is true.

A recent survey titled The State of Video in Education 2018, shows that 97% of education professionals surveyed felt that it was important to raise the level of digital literacy among young adults (Kaltura, 2018). Likewise, the executive summary of a study by Stanford University which stated: “Overall, young people’s ability to reason about the information on the internet can be summed up in one word: bleak”, also supports the need to improve digital literacy to evade misinformation (Allcott & Gentzkow, 2017).

Internet users between the age of 18 to 34 years of age constitute half the population worldwide (Statista, 2021). Thus, the increasing use of social media for information sharing has elevated the need for digital literacy competency to prepare young adults to be effective information creators and communicators. Digital literacy relies on the ability to evaluate online content concerning trustworthiness. Currently, it is still unclear which literacy prompts regular social media users with no malicious intent to be effective information consumers and disseminators. Thus, this paper aims to develop a conceptual framework to examine how digital literacy domains can help in mitigating the spread of misinformation in social media among young adults.

## II. LITERATURE REVIEW

Recent authors define digital literacy as the attitude, ability, and awareness to use digital technology to appropriately access, identity, manage, analyse, construct new knowledge, and communicate with each other in digital environments (Ng, 2012; Anthonysamy, 2020; Perera, Gardner, & Peiris, 2016). Following the model developed by Ng(2012), digital literacy embraces the perspective of cognitive, technical, and socio-emotional domains (Ng,2012). Technical abilities are a key component of digital literacy and its dimensions include owning the skills required to operate digital technologies. Therefore, technical literacy consists of operational literacy and critical literacy. Critical literacy is the ability to find embedded discrimination in media. Works of literature have revealed that technical literacy is needed in combating misinformation because, for individuals to be smart consumers or meaningful disseminators of information over social media, they need to know how to navigate online to validate the information and make well-informed choices in their role as consumers (Ng,2012; De Paora & Heravib, 2020).

A cognitive aspect includes choosing the technology, searching, assessing, and selecting information using critical thinking skills among others. Cognitive literacy comprises information literacy, critical literacy, and multiliteracies which enables individuals to think critically about the deluge of information. Literature has asserted that cognitive literacy is needed to navigate the informational landscape smartly and to therefore distinguish between facts and fake news (Guess et al., 2020; Jones-Jang et al.,2021). This literacy is vital in ensuring individuals think more critically to be effective information creators and communicators on social media.

The socio-emotional dimension which includes social-emotional literacy and critical literacy is associated with the behavior of individuals in using digital technologies responsibly. With socio-emotional literacy, individuals can pick up cues from the content and tones of postings to avoid misinterpretation and misunderstanding (Ng,2012; De Paora & Heravib, 2020). This literacy can also be a basis of guidelines to enable young adults to understand the ethical and social usage of information, interpret and discern the validity and value of information found online.

## III. CONCEPTUAL FRAMEWORK

Based on the constructs of digital literacy which comprises technical literacy, cognitive literacy, and socio-emotional literacy, a conceptual framework is proposed as presented in Figure 1. Figure 1 presents the proposed digital literacy framework that can be used in mitigating misinformation in social media.

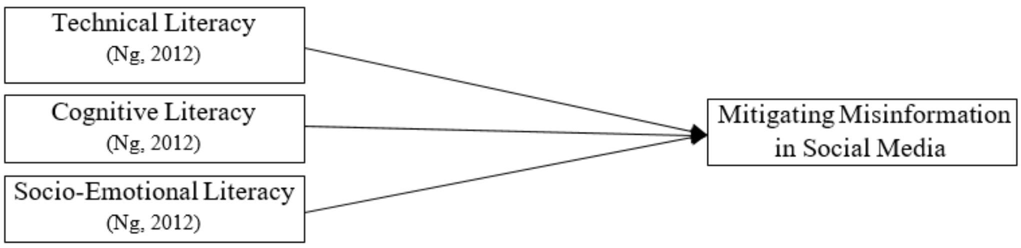


**Figure 1: Proposed Digital Literacy Framework**

## IV. CONCLUSION

The digital literacy framework that is proposed in this paper could provide an avenue for young adults in understanding how digital literacy could influence the mitigation of misinformation in social media. The digital literacy domains could assist in cultivating a digitally literate generation who can critically think and judge the suitability of a large amount of information on social media. Subsequently, it is hoped that young adults will be better equipped with digital literacy competency to perform the necessary due diligence and research to verify and validate information at the rise of fake news.

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# A FLIPPED CLASSROOM MODE FOR TRAINING SELF-LEARNING ABILITY OF UNIVERSITY STUDENT

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***Abstract***

This paper mainly uses constructivism and connectivism learning theory, in order to cultivate students' autonomous learning ability as the goal, learning from the flipped classroom teaching mode, redesigns a new teaching model. From the preparation before teaching, the implementation in teaching, the evaluation of teaching and the guidance after teaching, this paper designs a set of flipped classroom models for the purpose of Cultivating College Students' autonomous learning ability.

***Keywords—self-directed learning, flipped classroom, instructional design, digital media &art***

## I. INTRODUCTION

In the 21st century of "knowledge explosion", continuously improving the individual's self-directed learning ability has become an inevitable requirement to adapt to the development of the times. Under the influence of the traditional teaching mode of "attaching importance to teachers and neglecting students; attaching importance to the classroom and neglecting extracurricular activities; attaching importance to knowledge and neglecting ability", college students' self-directed learning ability is generally low. Therefore, it is not only the core task of higher education to speed up the reform of College Students' teaching mode and cultivate innovative talents with strong self-directed learning ability but also a major strategic measure in the process of building a learning society and an innovative country.

The flipped classroom teaching mode originated in the United States has been proved to be able to effectively enhance students' interest in learning and enhance their inquiry ability. Under the guidance of self-directed learning theory, combined with a variety of successful flipped classroom models at home and abroad, this paper designs a "flipped classroom teaching model for cultivating college students' self-directed learning ability", which integrates self-directed ability evaluation, learning mode selection, learning ability improvement, resource design, collaborative learning and integrated learning Among them. The time axis of flipped classroom teaching mode design is extended to the end of the course, and students' learning after the end of the course is tracked and tutored, and a good teaching effect is achieved. Through the comparative practice of two semesters a year, this study believes that the flipped classroom teaching mode can effectively improve students' self-directed learning ability.

## II. LITERATURE REVIEW

1. The connotation of self-directed learning ability and its influencing factors

1.1 basic connotation

1.2 the difference between new self-directed learning and traditional learning

1.3 influencing factors

Influencing factors of self-directed learning ability

Internal cause

1. Flipped classroom teaching mode

2.1 development history

2.2 basic features and modes

Comparison of flipped classroom and traditional classroom

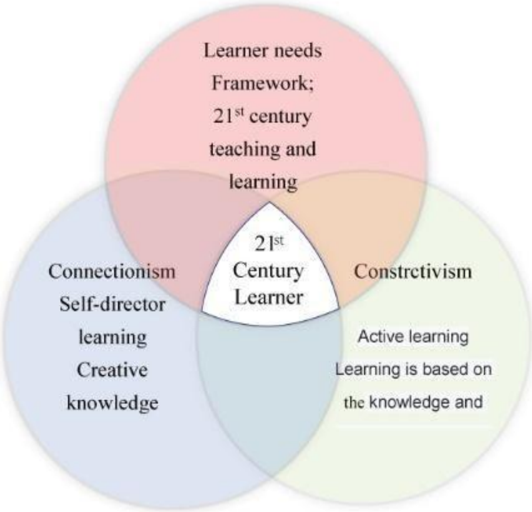
2.3 problems and challenges

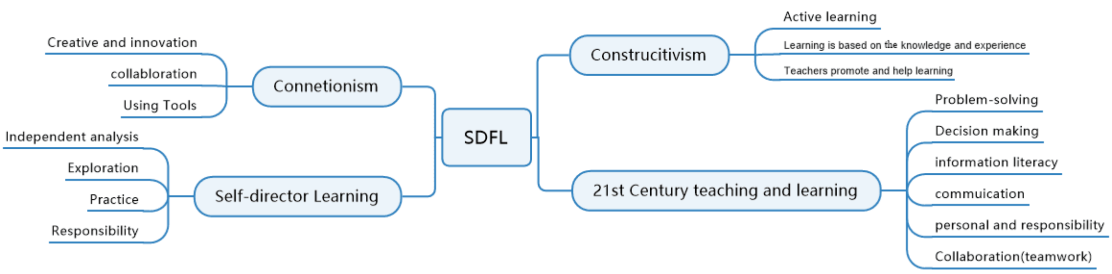
## III. CONCEPTUAL FRAMEWORK

This paper mainly uses constructivism and connectivism learning theory, in order to cultivate students' self-directed learning ability as the goal, learning from the flipped classroom teaching mode, redesigns a new teaching model.

1 Constructivism

2 Connectionism




## IV. CONCLUSION

Under the guidance of self-directed learning theory, this paper designs a "flipped classroom teaching model for cultivating college students' self-directed learning ability" by taking applied professional courses as an example, which integrates self-directed ability evaluation, learning mode selection, learning ability improvement, resource design, collaborative learning, integrated learning, etc. The purpose is to present a meaningful and valuable flipped classroom design strategy, effectively improve the learning effect of scholars and enhance the self-directed learning ability of learners.

Curriculum evaluation is an important external factor to promote students' learning, but the intrinsic motivation to promote students' learning is real education. Most of the research is to observe the performance of students in the implementation of the curriculum. However, it is often ignored to observe whether students can continue to learn and the learning effect after the course. On the basis of flipped classroom, this paper expands the teaching design and extends the teacher's learning guide to the students after the end of the course. From the results of the experimental research, the students can still maintain the enthusiasm of learning after the end of the course and actively and consciously learn more in-depth content. This shows that the model effectively promotes the development of students' self-directed learning ability, especially the internal motivation of learning motivation has been effectively stimulated.

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# EFFECT OF OCCUPATIONAL STRESS AND WELL-BEING ON JOB SATISFACTION AMONG EDUCATORS: AN EMPIRICAL ANALYSIS DURING COVID-19 PANDEMIC CONCERNING HIGHER EDUCATION INSTITUTION (HEI) IN MELAKA.

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***Abstract***

With the outbreak of the novel coronavirus in 2019, Education institutions have shifted from traditional offline teaching to online teaching, which has made it more complicated for everyone, including HEI (Higher Education Institution) educators. The main purpose of this study was to examine the impact of occupational stress and well-being on job satisfaction during the novel coronavirus period. The results of this study have shown that the occupational stress, well-being, and job satisfaction of HEI educators are significantly positive. Therefore, public authorities in Malaysia urged to protect the health and safety of educators in Malaysia as they are frontlines during this pandemic.

***Keywords—occupational stress, well-being, job satisfaction, HEI, educator***

## I. INTRODUCTION

In Malaysia, the pandemic of Covid-19 has caused the government to execute a Movement Control Order (MCO) on 18 March 2020 which closed down all public and private institutions in Malaysia. As a response to MCO, Higher Education Institution (HEI) in Malaysia has fully switched the learning platform from a face-to-face setting to online learning (Sia & Abbas Adamu, 2020) which brought all the educators to work from home.

The unprecedented challenges of conducting online classes during the pandemic have caused great mental stress among educators in Malaysia (Sia & Abbas Adamu, 2020). The educator needs to prepare online learning material and learn information technology skills that crucial in online teaching in a short time (Bernama, 2020). Consequently, the work burden among educators has increased never before and there is a high possibility of raising stress levels and also burnouts during the pandemic (Suganya, S., & Sankareshwari, B. 2020). Nevertheless, they also need to tolerate the unprepared situation and less time been given in these difficult circumstances (Lambriex-Schmitz, Van der Klink, Beausaert, Bijker, & Segers, 2020).

The educator face difficulties and greater stress level due to pandemic COVID-19 (Ramlee Mustapha, 2020) especially in balancing personal and professional roles. The educator is involved with other responsibilities such as a home school for their children at home, taking care of vulnerable family members at home, and managing their mental health (Kim & Asbury, 2020). Thus, it caused great mental stress among educators in Malaysia (Sia & Abbas Adamu, 2020). As a matter of the fact, the higher authority urged The Ministry of education need to monitor the educators' mental health level and happiness index regularly (Lee & Lai,2020).

Occupational stress and well-being play an essential role in determining job satisfaction (Ramlee Mustapha, 2020). Therefore, this study assumes that workload pressure (Suganya, S., & Sankareshwari, B. 2020), working condition (Kim & Asbury, 2020), imbalance time management (Trudel, & Babb, 2020) are the source of stress among educators which leads to with lower job satisfaction among educator (Febriantina, Suparno, Marsofiyati, & Aliyyah, 2020). For that reason, this study aims to identify the relationship between Higher Education Institution (HEI) educators' occupational stress and their well-being and job satisfaction.

## II. METHODOLOGY

This research was fully conducted quantitatively and managed to collect 100 respondents from public and private Higher Education Institution (HEI) educators in Melaka through the online survey distributed based upon a simple random sampling plan. This research was split into two sections. Section A has captured the respondents' demographics such as (gender, age, marital status, education level, faculty, and positions), while section B presented the instruments utilized and for occupational stress level, well-being, and job satisfaction. All items are measured using a 5-point Likert scale ranging from Strongly Disagree=1, Disagree=2, Neutral=3, Agree=4, Strongly Agree= 5.

## III. RESULTS/FINDINGS

The instruments for this study were adapted from Minnesota Satisfaction Questionnaire (MSQ) developed by Weiss et al. (1967), WSQ Frantz, A., & Holmgren, K. (2019), and Arnold et al. (2007). Cronbach's Alpha Coefficient value for this study is (Occupation Stress: 0.895; Well-being: 0.906; Job Satisfaction: 0.901). Pearson's Correlation was used to examine the relationship between stress level and wellbeing with job satisfaction. The results indicated that stress level and wellbeing have a significant positive relationship with job satisfaction, $r (98) = 0.961$, $p>0.001$, and $r (98) = 0.952$, $p>0.001$ respectively. Obilor, E.I., and Amadi, E.C., (2018) the acceptance value for Pearson's coefficient (r) was indicated as (± 0.4, low strength), (± 0.4 – 0.6, moderate strength) and (± 0.6 and above, high strength). In this research, stress level and well-being have a high correlation with job satisfaction, where the value of Pearson coefficient (r) exceeds ± 0.6 and above, which is considered as a strong relationship.

## IV. CONCLUSION

In conclusion, the results have revealed that stress level and wellbeing have a positive and strong relationship with job satisfaction. This study also confirmed that stress, well-being are important factors affecting job satisfaction among Higher Education Institution (HEI) educators. Thus, this study proposed that educational institutions should explore more potent strategies for managing stress and taking care of the well-being among educators (Harry Tan Huat Hock, 2021) to at least maintain job satisfaction and ensure the effectiveness of online teaching during the pandemic.

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# EFFECTIVENESS OF EDUCATIONAL VIDEO GAMES TO ENRICH ONLINE LEARNING IN HIGHER EDUCATION

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***Abstract***

The use of video games in education has been widely utilized, especially for children in their early years. Microsoft Minecraft Education Edition has emerged as one of the most popular video games used in education. However, it has not been evaluated at the university level. Therefore, this paper provides a preliminary study to analyse the effectiveness of integrating educational video games in a higher education setting. Based on the study, educational video games could improve the level of student engagement considerably.

***Keywords—Video games, Online teaching, Innovative Education, COVID-19, Minecraft Education***

## I. INTRODUCTION

Online teaching is fast becoming a viable alternative to face-to-face teaching. Even more so in response to covid-19 restrictions, which has forced some institutions to move to block teaching model (i.e., short, intensive, and focused format). However, the combination of online and block teaching introduces a number of challenges, for example, a lack of student engagement (Morin, 2020). To overcome this issue, we propose the use of unconventional delivery methods (e.g., educational games) as a tool to increase and retain students' interest and attention. The use of interactive video games has been found to have a positive effect on learners' mood states (Russel and Newton, 2008). Similarly, educational video games are reported to improve students' learning and concentration levels (Mellecker et al., 2013).

Educational games have been widely used in different education settings. Liu and Chen (2013) conducted a study on a group of elementary school students to evaluate the effectiveness of using Conveyance Go (a card game) in assisting students to acquire certain knowledge and skills. Their study found the game enhanced students' knowledge and attitude toward learning new skills. Liao et al. (2018) conducted a yearlong study assessing the use of a game-based writing tool to aid elementary students. They report students' interest, engagement, and performance improved after using the tool. Felszeghy et al. (2019) conducted an online competition using Kahoot (game-based quizzing tool) on a group of first-year university students to evaluate the use of games in education. Their finding indicates using the tool has improved students' overall performance and engagement.

Video games are more widely used in schools, rather than post-18 education settings. This gap in research has motivated us to set a goal to integrate video games into teaching and learning in a higher education setting. We have decided to investigate the feasibility of this idea by running a small-scale trial lesson, whereby students will learn how to write simple computer programs using the Python programming language.

## II. METHODOLOGY

After exploring video game options, we chose Microsoft Minecraft Education Edition (MC:EE), because of its integrated Python programming language interface. Moreover, MC:EE licensing requires only an office 365 education account credential which all our staff and students already possess. Finally, Minecraft is a very popular game among students (Ming, 2020).

Our experiment involves ten students from the Department of Operations, Technology, Events and Hospitality Management (OTEHM) at Manchester Metropolitan University (MMU) studying on the BSc (Hons) Business Technology programme. All participants are between the age of 18-21, either in their first or second year of study. The participants were invited to attend a one-hour online class where they had to complete a series of tasks designed to teach fundamental programming concepts using Python within MC:EE.

## III. RESULTS/FINDINGS

To evaluate the effectiveness of our proposed method, we conducted a survey at the end of the class. The respondents provided predominately positive feedback as presented in Figure 1 and Figure 2. Some of the students' comments are shown below. This insight offers us an early indication that educational games can be an effective tool to enrich online learning. A full analysis (with more graphs) of the survey results is underway.

Question-1: How much did you enjoy the session?

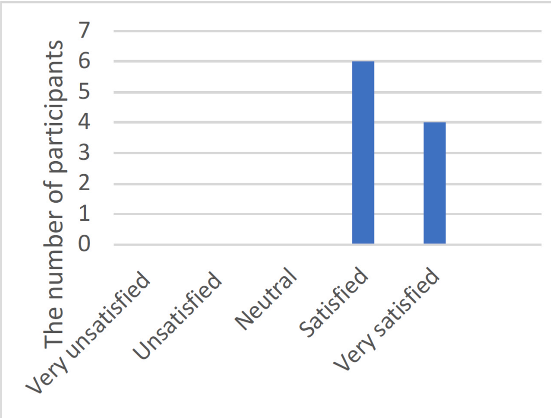


Figure 1: MC:EE session

Question-2: Do you agree that MC:EE can be used as an effective educational tool for teaching and learning?

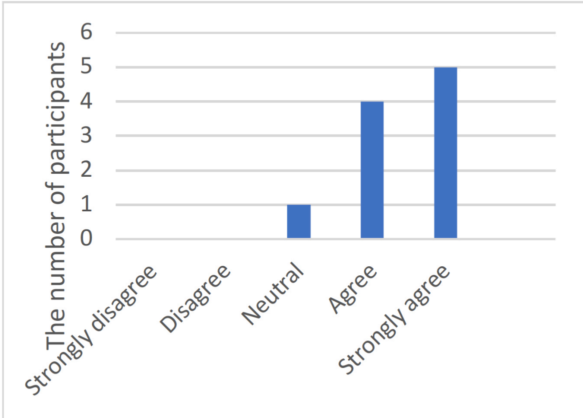


Figure 2: MC:EE usability

Question-3: Other comments or suggestions

- "It was interactive"
- "High level of interaction between players and the game."
- "… playing a game while learning which is a big plus in my books."
- "This was a well thought out activity which was engaging and gradually built my skills ..."

## IV. CONCLUSION AND FUTURE WORK

In this paper, we conducted an experiment to evaluate the use of MC:EE to improve student engagement during online lessons. Our preliminary findings illustrate that the use of educational video games could enhance the level of student engagement inside the class, especially when the learning material is delivered online and in an intensive format such as block teaching. In the future, we plan to conduct further studies involving a larger number of participants, a wider range of units, and other age groups are needed to validate the effectiveness of using educational video games in higher education.

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# ENHANCING STUDENT ENGAGEMENT WITH DIVERSE TEACHING

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***Abstract***

The Coronavirus (Covid-19) pandemic has led to the closure of schools in Malaysia in order to curb the spread of the virus. Teachers and students were put in a situation where they were forced to adapt to online delivery modes. Classes were held online via Google Meet and Zoom. Regardless of the change from learning in a physical classroom to a virtual classroom, it is important to ensure that the education standards continue to be raised as per the objectives of the Malaysia Education Blueprint 2013-2025. The blueprint emphasises the improvement of STEM education among school students as there is a lack of interest and enrolment for STEM subjects. The shift to online delivery mode poses a possible change of perception towards STEM subjects. This study aims to examine three factors that enhance student engagement during online STEM classes, namely innovative teaching strategies, lesson design and teacher feedback. A questionnaire was developed and deployed to 119 secondary school students. The research is currently ongoing and data will be analysed using the Partial Least Squares (PLS) approach. The findings will be reported in an extended paper.

***Keywords—online learning, student engagement, STEM, Covid-19, Malaysia***

## I. INTRODUCTION

The world was triggered by an unexpected Coronavirus (COVID-19) pandemic which was first identified back in December 2019. Malaysia reported its first Covid-19 case in January 2020 and saw a rise in cases from February 2020 onwards. Due to the major spike in cases, the government of Malaysia imposed a two-week Movement Control Order (MCO) in March 2020 to control the spread of Covid-19 (New Straits Times, 2020). The Prime Minister of Malaysia announced that the private and government sector entities will have to cease operations throughout the MCO period. Only essential services were allowed to operate but with strict Standard Operating Procedures (SOP). In addition, the closure of schools, universities and other institutions were also made effective.

Primary and secondary school students were allowed to resume classes as usual (in phases) from July 2020 onwards. However, due to a spike in cases from states such as Sabah, Selangor, Kuala Lumpur and Putrajaya, classes were ceased from October 2020 onwards (Tan, 2021). A further surge in Covid-19 cases caused all schools nationwide to close the following month. The prolonged closure of schools forced students and teachers to adapt to an online delivery mode.

Regardless of the change from face-to-face classes to online classes, it is important to ensure that our education standards continue to be raised as mentioned in the Malaysia Education Blueprint 2013-2025. The blueprint was introduced to develop students holistically and prepare them for the opportunities and challenges of the 21st century (Ministry of Education Malaysia, 2013). In addition, the blueprint emphasises on the improvement of Science, Technology, Engineering and Mathematics (STEM) education among students. As reported by the Ministry of Energy (2017), 70% of students in secondary schools had low interest when it comes to learning STEM subjects as the teaching is too theoretical for them. Students have also cited lack of encouragement by teachers and uninteresting learning process as the factors (Ministry of Education, 2012; National STEM Movement, 2016). However, with the shift from learning in a traditional classroom setting to learning via online modes, changes in students' perception towards STEM subjects is possible. The level of interest of students can be described as student engagement (Briggs, 2015).

That being said, this study aims to determine the factors which enhance student engagement during online STEM classes. The independent variables for this study include innovative teaching strategies, lesson design and teacher feedback. This study incorporates the use of Engagement Theory by Kearsley and Schneiderman (1999), Growth Mindset Theory by Dweck (2006), as well as the student satisfaction and perceived learning model by Eom et al. (2006). The Malaysian school environment has typically relied on traditional 'chalk and talk' teaching with little to no adaptations of other teaching methods. By forcing the switch to online delivery mode, the teaching and learning possibilities are endless. This study ultimately aims to understand whether the changes in the learning process have affected student engagement for STEM subjects.

## II. METHODOLOGY

A deductive approach is employed for this study. This approach focuses on the development of a hypothesis based on existing theories and is followed by designing a suitable research strategy to test the hypothesis (Wilson, 2010). For this study, data is analysed using the quantitative method. The working population for this study constitutes secondary school students who are undertaking STEM subjects via online delivery mode due to the closure of schools. Based on G*Power, the sample size for this study is 119 students. A questionnaire was developed using Google Forms using literature from Kearsley & Schneiderman (1999), Fredericks et al. (2004), Dweck (2006), Eom et al. (2006) and Gray & DiLoreto (2016). Data analysis is conducted using the Partial Least Squares (PLS) approach. Under PLS, data is evaluated using the measurement model and structural model.

## III. RESULTS/FINDINGS

Data collection for this study is currently ongoing. The data will be analysed and reported in an extended paper.

## IV. CONCLUSION

The Covid-19 pandemic has caused teachers and students to fully rely on online delivery modes. Students who used to deem STEM subjects as uninteresting and boring now have the option to learn these subjects in a different way. The shift from traditional classrooms to virtual classrooms allow teachers an opportunity to make STEM subjects much more interesting. This research aims to shed light on the important aspects needed to keep students engaged during STEM lessons. Teachers could use this framework as a guide to enhance online lessons and in turn, get the students to be more interested in the learning process. With more students having an interest in STEM subjects, it would ultimately lead them to choose a STEM-related path for their tertiary education. This is in line with the objectives of the Malaysia Education Blueprint 2013-2025.

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# IMPACT OF SOCIAL MEDIA ON STUDENT ENGAGEMENT IN E-LEARNING

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***Abstract***

This study is an attempt to examine the impact of social media on student engagement in e-learning. It explores collaborative learning impacts on the interactions with peers and lectures, the impact of the Technology Acceptance Model (TAM) on social media usage, and the relationship between interactions, social media usage, and online knowledge sharing on student engagement in e-learning during the COVID-19 pandemic. 201 Malaysian tertiary students from both public and private universities have completed the survey forms via purposive and snowball sampling methods. Descriptive analysis is performed in SPSS and model validation and structural model being analysed using Smart-PLS 3.3. The results indicate that collaborative learning, interaction with peers, perceived usefulness, perceived ease-of-use, social media usage, and knowledge sharing have either direct or indirect influence on student engagement. The only insignificant predictor is interaction with lecturers. This study revealed positive findings that social media usage is the most dominant and high-performance factor impacting student engagement in e-learning.

***Keywords—student engagement, collaborative learning, Technology Acceptance Model, social media usage, knowledge sharing***

## I. INTRODUCTION

Although e-learning is the future trend in education, it is not widely used in Malaysia, especially before the Covid-19 pandemic. With the new norm of social distancing and lockdown, e-learning becomes the only alternative approach for Malaysian higher education. Most of the universities in Malaysia conducting e-learning in a synchronous environment during the movement control period. E-learning in the synchronous environment provides direct interaction between the lecturers and students via computer-mediated communication tools such as video conferencing systems or chatrooms. However, students are either restricted or reluctant to use webcams and microphones during online classes. Students experience difficulty in interacting with their lectures and peers, thus affecting their studies (Selvanathan et al., 2020). Social media is believed to be a learning medium to encourage learners' participation, engagement, reflection, and collaboration in e-learning (Manca & Ranieri, 2016). These elements are essential educational outcomes in today's learning environments (Korucu & Atun, 2017). Student engagement is highly related to student retention in their study; students with high engagement are less likely to drop out of higher education (Tight, 2020). Furthermore, an engaged student is likely to be an asset to an institution (Tight 2020). The previous studies on social media usage in education are mainly associated with students' performance or behaviour of use of social media by students in higher education in a physical learning environment (Alshuaibi et al., 2018; Athukorala,2018; Balakrishnan & Gan, 2015). There are limited comprehensive studies conducted to investigate how social media impacts student engagement in the e-learning context during movement control in Malaysia.

This study is an attempt to examine how social media for collaborative learning influence the interactions with peers and lecturers and also to explore the impact of the Technology Acceptance Model (TAM) on social media usage, consequently explaining the relationship between interaction with peers and lecturers, social media usage, and online knowledge sharing for students' engagement in the e-learning.

## II. METHODOLOGY

This study developed a framework by integrating and adapting the researches of Ansari and Khan (2020) and Sarwar et al. (2019); Ansari and Khan (2020)'s, and Sarwar et al. (2019) 's study was conducted in India and China, respectively. The current study adopted their framework and conduct in Malaysia. This study applied the primary data collection method. Questionnaires created in google form were disseminated via social media platforms like Facebook, WhatsApp, and WeChat using purposive and snowballing sampling methods. The questionnaire comprises two sections. The first section gathers respondents' demographic background includes gender, ethnicity, year and field of studies, communities, and internal connection options. The second part of the questionnaire focused on the construct measurements (adapted from previous studies) of seven exploratory variables and student engagement. 201 Malaysian tertiary students from fifteen public and private universities have completed the survey forms. Descriptive analysis was conducted via SPSS, measurement constructs validation, and structural modelling were analysed using Smart-PLS 3.3.

## III. RESULTS

Among the 201 respondents, female respondents constitute 55%. The majority of respondents are Chinese (60%), pursuing degree programs (88%) in Management/Arts/Law/Education (69%), spend 4-6 hours using social media (82%). Besides, half of the respondents are from urban communities (48%) with Wi-Fi connections (53%). The composite reliability (CR) values in this study ranged from 0.909 to 0.944 satisfied the 0.7 thresholds of CR. The structural model analysis indicates that collaborative learning, perceived usefulness, and perceived ease of use, have significant total indirect effects on student engagements. Interaction with peers, social media usage, and knowledge sharing has a significant positive influence on student engagement. Interaction with lecturers is the only insignificant predictor of student engagement in e-learning. All the four independent variables have a substantial effect size (Q square above 0.35) on student engagement, whereas social media usage has a medium effect size on R square. Importance-performance map analysis (IPMA) in Smart-PLS reveals that social media usage plays a crucial role in student engagement as high total effects. Nonetheless, the performance of perceived usefulness, and interaction with peers, are much lower than other factors.

## IV. CONCLUSION

The study explores the impacts of social media on student engagement in e-learning across Malaysian universities. The study was conducted during the new norm of social distancing and MCO periods. The findings obtained in this study can open up new opportunities for educators to integrate social media into progressive education and to utilize the exciting benefits of these communication and collaborative learning tools. The results revealed that social media usage is the most dominant and high-performance factor impacting student engagement in e-learning. The results of the findings suggest that educators should put efforts to improve/innovate learning activities that can create the usefulness of the tool and also the interaction with peers, which in turn could help on student engagement in their study and reduce the attrition rate among students.

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# INNOVATIVE TEACHING AND LEARNING USING DESIGN THINKING: AN ACTION RESEARCH STUDY

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***Abstract***

This paper is based on an action research project called "Suara Pendidik"— where the researchers, ran a Design Thinking boot camp for a total of 44 teachers and administrators affiliated with the NUTP. The workshop was entitled "21st Century Teaching and Learning. The goal of this session was to introduce innovative teaching and learning techniques to educators, through Design Thinking (DT henceforth) interventions. Dweck's theory of growth mind-set was also used as a kernel to determine if respondents felt that the project had made an impact from a mind-set change perspective also. The action research initiative was guided by the Stanford's five stage DT methodology. Data for each stage of the project was gathered using in session observations of participant's presentations and discussions, and are predominantly interpretive in nature. Participants were put through a series of action learning activities. Peer review presentations and challenge sessions were used throughout these five phases. The majority of the participants found the workshop as an 'eye opener', citing that the DT methodology and process were useful to foster innovative teaching and learning, much required in current times.

***Keywords—Design Thinking, Action Research, Teaching & Learning***

## I. INTRODUCTION

There are different ways of defining what design thinking is. The two words are worthy of being explored to begin with. The word 'design' based on the definition by Oxford languages, as a noun, refers to "a plan or drawing produced to show the look and function or workings of a building, garment, or other objects before it is made". This definition implies that design, again as a noun, relates to any form of idea that is put forth either in the form of sketch, model, or better still as a full blow prototype before the final product or model is actually developed. The second word, thinking, again as a noun, based on the definition by Oxford Languages, refers to "the process of considering or reasoning about something". The keywords based on this definition are process and reasoning. Design Thinking therefore can be defined as a systematic or a structured approach to developing something, initially as a model or prototype, before a final version is built (Kolko, 2015). We need to understand nevertheless that when people build or develop something, it is often done to solve a real world problem. As such, design thinking is often defined as a systematic and structured approach to solving a problem based on design (Naiman 2018; Plattner, Hasso et al, 2010). This paper highlights an interpretive account of an action research project, where design thinking principles were institutionalised as the intervention mechanism. The goal of this study and project therein was to identify if design thinking as a systematic approach, could assist teachers to become more innovative in their approach towards teaching and learning. The findings in this study are largely interpretative in nature and were derived primarily from our interpretive assessment of in session action learning presentations and participants' interactions—guided by specific design thinking toolkits. Dweck's theory of growth mind-set was also used as a kernel to determine if respondents felt that the project had made an impact from a mind-set change perspective also (Raman, 2019).

## II. METHODOLOGY

The process and outcomes of this action research initiative are presented based on the five-stage CAR approach, consisting of (i) problem diagnosis, (ii) action planning, (iii) intervention, (iv) evaluation and (v) learning outcomes (Davidson et al, 2004). Each of these stages of action research was carefully mapped to the five stage design thinking process as follows: -

- Problem diagnosis—was conducted in two stages. The first stage involved discussions with key officials of the client organisation (a not-for-profit entity with members from the teaching profession) to determine the design challenge/problem that was to be addressed via the intervention. The second stage of problem diagnosis was completed based on the empathy and define stages of the design process
- Action planning—was conducted based on the ideation, where the participants used brainstorming to identify possible solutions to the challenge given.
- Intervention—was conducted using prototyping method, using scene, role and prop pitching sessions

- Evaluation and learning outcomes were largely based on peer reviews and boot camp facilitators' feedback at the end of the pitching sessions.

In terms of sampling, a total of 44 participants were carefully selected throughout the nation using purposive sampling. Criteria include among others, being seasoned teachers in the Malaysian school system, familiarity with school administrative functions and those who expressed interest to participate in the boot camp.

## III. RESULTS/FINDINGS

Overall the reflection from our action research intervention revealed the following key points. Firstly, the secretary general of the client organisation during the reflection session did state that the program had guided, cajoled and squeezed every amount of idea from participants. It was definitive as we managed to gather all necessary information needed on what those below the age of 35 would like to see in classrooms in the future. Other participants commented that the programme was indeed an eye-opener and that it had allowed them to recognise what they need to do to embrace change and lead transformation efforts in schools. This echoes the idea that design thinking can foster a growth mind-set.

## IV. CONCLUSION

The action research initiative was guided by the Stanford's five stage design thinking methodology. Data for each stage of the project was gathered using in session observation of participant's presentations and discussions, and are predominantly interpretive in nature. Participants were put through a series of action learning in-session activities based on the empathy, define, ideation, prototyping and testing phases of the design thinking methodology. Peer review presentations and challenge sessions were used throughout these five phases. The majority of the participants found the workshop as an 'eye opener', citing that the DT methodology and process were useful to foster innovative teaching and learning, much required in current times.

## ACKNOWLEDGEMENT

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# ONLINE LEARNING TOOLS AND PLATFORMS IN HIGHER EDUCATION DURING COVID-19

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***Abstract***

Due to the global epidemic crisis COVID-19, online learning has become a compulsory part of all higher education institutions, including universities and colleges globally. Online learning involves utilising interactive learning materials. This dangerous global epidemic crisis has flipped the offline learning and teaching process. This paper highlights the tools and platforms that facilitate higher education during COVID-19. The discussion reveals that most online learning tools and platforms are widely used and deliver content and lessons. However, it is still not an easy way to monitor and reform students' learning habits in such a brief period during the COVID-19 global epidemic.

***Keywords— Online Learning, COVID-19, Online Learning Tools and Platform, Higher Education)***

## I. INTRODUCTION

Since the outbreak of COVID-19 hit the world, higher education institutions implemented the conditions of no learning delays, no teaching delays during the COVID-19 period. Higher education institutions in Malaysia have organised the most extensive online learning on an enormous scale ever. Therefore, the largest online courses and the most comprehensive coverage are online in a concise time. This is the quick response to the outbreak; however, it is also a big challenge for many educators who teach courses face to face.

Online learning involves using interactive materials to facilitate learning. The term online learning generally refers to distant learning through digital platforms. This is particularly true when addressing efforts made in the context of the COVID-19 crisis that disrupted most face-to-face learning to enforce practical disassociating. However, most of the other concepts for further developing online learning often refer to blended online learning. Online learning is well known among educators and students. It is a medium consisting of different computer and electronic media forms, a tool for communication, and the internet, which delivers learning.

## II. LITERATURE REVIEW

### *A. **Online Learning During COVID-19***

Online learning in higher education institutions is one of the critical areas that is recognised as an essential factor, contributing significantly to the progress of the individual, social change, and economic growth that led to the country's development as a whole. COVID-19 has demonstrated flaws in education systems around the world. As the crisis unfolded, a significant amount of continuing active learning is being adapted to online learning, which was initially delivered face to face in classrooms. It is now clear that society needs dynamic and robust education systems as we face uncertain futures.

Due to the current disease outbreak of COVID-19, online learning companies provide a range of e-learning services, such as building and designing training courses, introducing web-based learning, online learning, and content management systems. Online learning can be entirely different, and with the right techniques and tools, theoretically much superior to in-person instruction [1]. To reap the benefits of online learning, we need to relinquish the current generation of education technologies, even though systems and processes always do nothing more than reverse-engineering conventional classrooms.

### *B. **Online Learning Technique***

Learning is the best process, not in terms of yield. Students' interest in developing their learning styles and a mechanism that includes a study or feedback on their learning ability's success is crucial to enhancing higher education learning [2]. Educators who are trained in the concepts of education are more likely to follow a student-centred approach. These educators have large teaching views that can make learners participate in new techniques and processes of learning. They recognise the conventional approach's changing demographics and influence technology's learning methods [4]. Learners are independent of their learning processes in online learning due to a lack of personal interaction with their instructor and other learners [3]. Furthermore, according to Al-Adwan and Smedly [3], online learning often allows learners and educators to communicate while learning hybrid.

### *C.* ***Online Learning Tools and Platforms***

Online learning is an online tool that supports and facilitates online educational materials delivery to higher education institutions. [5]. Osuafor and Emeji [6] also support the fact that online tools consist of different educational technologies, teaching and learning systems digitally or technologically. The ability of ICT to promote the learning and teaching process based on multimedia resources is also linked to the increased interest in online learning. Insufficient technical infrastructure can lead to more harm than good to educators, learners, and a learning experience [6]. Online learning is a platform used to transfer transmission, teaching, or programming through electronic devices such as computers, mobile phones, i-pads, tablets, and others. In other words, institutions that adopt online learning will expand and develop the combination of technology and services offered on-campus [5]. The appropriate infrastructure for ICT skills development such as the internet, extranet, intranet, and LAN network is considered one of the significant challenges in implementing online learning institutions, particularly in developing countries. The online learning environment must provide reliability and accessibility of learners and lecturers' networks and facilities [4]. Therefore, this study assembles various tools and platforms for online learning and, in particular, the design for each platform for suitability in the current needs of COVID-19.

## III. CONCEPTUAL FRAMEWORK

Technology played a critical role in the teaching and learning phase under COVID-19's modern learning norms. Hundreds of new teaching technologies have been developed to give students more autonomy, enhance instructional procedures management, promote cooperation, and increase contact between educators and students. Thus, this research discusses the 15 most online learning tools and platform usage, namely Microsoft OneNote, Microsoft Teams, ClassDojo, Zooms, Screencastify, Moodle, Seasaw, G Suite, Google Classroom, Quizlet, Kahoot, Nearpod, PearDeck, Flipgrid and Mentimeter in teaching and learning systems among students at higher education in Malaysia. These learning tools and platforms can be utilised with the use of the best-identified platform and to monitor their students. These tools and platforms offer various interactive and fun learning, which can attract a new norm of learning. As a result, teachers can evaluate students' understandings based on ICT skills, time management, resources, and learning technique.

## IV. DISCUSSION

Online learning facilitated the conventionally elaborate paradigms of higher education and distance learning. With modern advancements, the benefits of interactive learning tools are not only available for premise classroom sessions but can also be delivered over the internet. Therefore, this research covers the gap which provided the most useful and familiar platforms that can be used based on teachers' preference and according to their teaching and learning issue. They can explore new platforms to attract students' interest and utilise these learning tools and platforms to monitor the students.

## V. CONCLUSION

The global economy has been profoundly affected by the devastating and infectious COVID-19; this disaster also shakes the education system. This uncertainty tends to resonate around the world in educational institutions. Online learning seems to have its strengths in structured learning in this new norm. Therefore, it is no doubt online learning is changing the quality of teaching and learning. It has significantly entered education and the corporate world, and it also complements traditional delivery methods. Yet, it becomes the responsibility of higher education students for their learning and changes their habit to ensure that they get the feeling of learning face to face and adopted quickly with the current online learning changes effectively.

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# STUDENT’S PERCEPTION OF GAME-BASED LEARNING IN CONNECTIVIST CLASSROOMS

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***Abstract***

Today's education system is going through a digital transformation because of the present COVID-19 pandemic, and we are still facing issues with student engagement and motivation in the learning process. Recent studies during the pandemic show that online learning environments provide less opportunity for active and personalised learning. Therefore, the world of academia needs to be redesigned. Online learning environments can benefit from connectivist frameworks because they are the networked connections between information and students. However, it is limited in addressing student's online learning needs and cultivating critical thinking support for student learning in online learning environments. This research aims to design a scaffolded connectivist online learning environment to enhance critical thinking and problem-solving skills through game-based techniques. Elements of game-based learning and connectivism are integrated into the curriculum to solve the research problem and achieve the research objectives. This study uses a mixed-method research methodology where qualitative methods are used to learn more about students' thoughts, perception, and feelings and the quantitative approach to analyse the statistical results regarding the redesigned framework for the online learning environment. Students were provided with a group project where they collaborate and come up with a solution to a problem. This research result has implications on the student learning process, the teaching strategies and the student online learning experiences.

***Keywords: online learning, connectivism, education, game- based learning, EdTech***

## I. INTRODUCTION

Technology has not only changed our day to day lives but also affected our ways of teaching and learning. Nowadays, Information Communication Technology (ICT) is becoming an essential part of 21st-century education because it provides technological tools to improve the teaching and learning process. A considerable literature has stated that these tools have the power to transform learning. For example, it allows students to learn at their own pace and can make learning meaningful. (Gilyazova & Zamoshchanskii, 2020; Rajab, Gazal & Alkattan, 2020). Moreover, using new technologies in the class will enable students to explore new things, help them in knowledge construction with self-direction and collaboration (Marshalsey & Sclater, 2018). However, being an educator it would be unrealistic if we do not provide sufficient guidance to students about self-regulation to engage them in the course.

## II. LITERATURE REVIEW

Today's education system is going through a digital transformation because of the present COVID-19 pandemic, and we are still facing issues with student engagement and motivation in the learning process. Researchers have reported that our online education is facing challenges in the area of Online experiences (55%), Student Assessments (57.5%), Communication (59%), Use of technology tools (56.5%) and more. Some more issues were that students get distracted when an online task is given to students due to the lack of instructions. They also felt disconnected and demoralised when asked to access an online database to get information because available resources were beyond their understanding. Therefore, for online learning to be successful and meaningful, we should provide students with more relevant and essential instructions than just the transition of data. Studies suggested that Connectivist learning environments backed a democratic form of education to support online, self-taught and lifelong learning but still need to be structured. (Wu, Pearce & Price, 2020).

## III. CONCEPTUAL FRAMEWORK

This study presents a Game-Based Connectivist Learning Framework to redesign an online learning environment to improve learning outcomes. This new framework consists of Siemens's (2005) connectivism principles and game-based learning elements by James Paul Gee (2005) to scaffold, engage and motivate them in an online learning environment. In this study, students were assigned to a group project where they collaborated with their group members to solve a problem. Each group produced a new version of an old website design with issues in their User interface and User experience. This group project aimed to collaborate, analyse and build a new website to attract more people towards their product or services. In this research, a mixed-method research design was used to collect the data. The participants in this study were recruited from the Internet Application class, where semi-structured interviews were conducted in groups to collect qualitative data. On the other hand, a survey was conducted to collect quantitative data.

## IV. CONCLUSION

In conclusion, students enjoyed their group project because they actively communicated, collaborated, and shared new ideas among their group mates and improved their thinking and problem-solving skills.

## V. ACKNOWLEDGEMENT

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# STUDENTS' PERCEPTION TOWARDS THE USE OF AUGMENTED REALITY (AR) IN LEARNING MULTIMEDIA DESIGN CONCEPTS

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***Abstract***

The education sector is fast rising with the inclusion of immersive and online technologies, making the teaching and learning processes more interesting & engaging. In this study, we present the students' perception of using Augmented Reality (AR) as a tool for the understanding and learning of theories and basics of design, such as design principles, in terms of its conceptual clarity and the level of interest it generates while up-keeping the motivation of the learners. This study was conducted among the postgraduate students of the Faculty of Creative Multimedia, Multimedia University using the mixed-mode research methodology, including both qualitative as well as quantitative methods of data collection in the form of Pre/Post-test (multiple choice questions), Survey and Comments. The students were made to study design concepts through an AR app simulator build following the theory of Constructivism and Gagne's nine events of instruction, which was new for most of the students enrolled in this course. The study results showed significant improvements in students' overall performance, including increased learning, motivation, engagement, interaction and perceived interest for future learnings through such immersive technologies.

***Keywords*—E-learning, Augmented Reality, Constructivism, Gagne's 9 events, Design basics**

## I. INTRODUCTION

The vast amounts of technological developments and advances taking place each day have widened the gap between the teaching procedures and the student's technological way of life, resulting in a lack of interest and motivation in students towards traditional academic practices (Chalk and Talk medium of instructional delivery) (Pérez-López & Contero, 2013). To overcome this gap, Education is one of the profound sectors that is witnessing an immense quantity of research, the reason being to develop the technology skills among the students as well as the instructors to increase its delivery impact, understanding, retention and, most important, break down the distance barriers.

One such technology that is being talked about, concerning its usage in education in recent years, is the Augmented Reality (AR). Although its potential has been realized recently, it is fast becoming a quick and efficient way of explaining concepts and ideas over traditional mediums (Divecha, n.d.; Luckin & Fraser, 2011), thus making the learning environment inviting, exciting and full of opportunities. El Sayed, Zayed, and Sharawy (2011) describe AR as a technology that facilitates the addition of virtual objects to real scenes to incorporate the information that is missing in real life (Nincarean, 2013). Its amalgamation in education can be noticed in the learning processes of a wide array of subjects such as Chemistry, Biology, Mathematics, Anatomy, Physics, Astronomy, Architecture and History (Techtrends & March, 2012). A recent example by Ibáñez, Di Serio, Villarán, & Delgado Kloos, (2014) of the usage of AR application in education involved the teaching of one of the basic concepts of electromagnetism i.e. the effects of a magnetic field. According to Bacca et al., (2014), there is an immense need for continuation in the process of research to unleash the potential of AR in making the learning effective. This has been further proved through the study conducted by Davidpérez-López, (2013), to compare traditional learning with AR-based learning and the results were definitely in support of the latter as it involved student's interaction directly with the educational material, associating the content with body movements and sensations, thus validating AR technology as a promising tool to improve students' motivation and interest and to support the learning and teaching process in educational contexts.

Although the application of AR has been seen in most educational arenas, however, according to the author and the absence of any evidence, the field of designing and multimedia has yet to employ AR for effective understanding and learning of its basics, elements, theories and principles. These theories and basics form the basis of every piece of art and design and therefore needs to be understood in-depth in a real-world setting. And thereby this research aimed at coming up with an AR app (simulator as of now), in conjunction with the theory of constructivism using Gagne's nine events of instruction, to understand the implications of studying design principles through this technology. Not only this app simulator explained the course material in a 3D setting, but also, containing links to online videos, information and activity tasks to make the overall experience interactive, engaging and motivational for the design students.

## II. METHODOLOGY

For collecting the data, the researcher went through the Mixed Mode of Research i.e. both Quantitative as well as Qualitative. The population sample i.e. Postgraduate students of Multimedia University, Malaysia were first exposed to a Pre-Test of 20 MCQ's to test the prior knowledge of design concepts, followed by an introduction to course material through an AR app simulator. This simulator explained the design principles (such as Balance, Proportion, etc.) in a real-life setting using pre-defined objects or everyday objects such as two boxes on a table at different positions or any other type of such arrangement. This was further followed by a Post Test of the same 20 MCQ's along with some survey questions and comments. While the multiple-choice answers and the survey answers were used for Quantitative analysis, the comments were helpful in the Qualitative analysis.

## III. RESULTS/FINDINGS

The results show a progressive increase in the number of students (more than 60%) who gave more than 10 correct answers, as opposed to the pre-test results which showed more than 50% of students giving less than 10 correct answers, further indicating enhanced learning being achieved through AR app. This further supports the Gagne's theory outcome i.e. Effective learning (Santos, 2014; Akçayır & Okçe Akçayır, 2017), as well as one of the positive outcomes of the usage of AR for education i.e., Increased understanding.

To summarize, the data collected from survey statements, indicated that more than 60% of the participants in this research study felt that learning of design basics, specifically design principles was quite interesting, interactive and in-depth, especially with the combination of 3D objects in the environment with course material and online info links. They felt positive, motivated & enthusiastic. The technique of studying through such a medium was so appealing for them that they want to use such a combination for studying other subjects as well as preparing their projects.

## IV. CONCLUSION

The researcher concluded that all the students (who were part of this research) didn’t use AR for educational purposes before, and therefore, it was a first-hand experience for them. Based on their feedback, the researcher was confident that the perception of the students, undergoing multimedia design studies, was very optimistic. They felt quite motivated and expressed their desire to have more of such classes (well connects with research by Liu et al., 2010; Di Serio et al., 2013; Chang et al., 2014). The students saw it as an interesting (Santos et al., 2014; Akçayır et al., 2017), constructivist (Wu et al., 2013; Di Serio et al., 2013) and well-supported learning approach (Dede, 2009), leading to social interactions and engagements (greatly supports the research by Akçayır et al., 2017; involving Gagne’s theory implementation in e-learning). They were much satisfied after going through such a learning experience and conveyed their thoughts on building their projects using this combination of 3D imbibed AR and course materials.

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# THE PERCEPTION OF ACCOUNTING STUDENTS TOWARDS ONLINE TEAM-BASED LEARNING AND TEAMWORK SKILLS

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***Abstract***

The evolution of Industry 4.0 will change the accountant's role from doing a repetitive task to the advisor's role. Digital skills and soft skills are equally important for future accountants. There is a demand for accounting educators to develop accounting students soft skills in the classroom. This study aims to analyse accounting students' perception of online team-based learning (TBL) in developing their teamwork skills. A group of Diploma in Accounting students who experience online TBL responded to an online survey questionnaire. Students completed 5-items measuring student perception of the online TBL learning experience and teamwork skills. The reliability test and validity test of the measurement items are satisfactory. Descriptive statistics used to analyse the data by using SPSS PASW 18. The result found a high mean score for students perception of an online TBL learning experience and teamwork skills. The author suggests other accounting educators implement TBL in the classroom, whether in an online or face-to-face environment.

***Keywords—Accounting Students, Team-Based Learning, Teamwork, Industry 4.0, Soft Skills***

## I. INTRODUCTION

The emergence of the automation process due to Industry 4.0 will change the role of an accountant from doing repetitive task such as journal entries and preparation of financial statement to a trusted advisor (Ryan, 2019). Future accounting graduates need to be ready with digital skills and soft skills such as teamwork skills, presentation skills, accountability and communication skills (Larson, Sanders, & Bohler, 2020) to adapt to the digital business landscape (Ryan, 2019). Even though accounting educators are overloaded with technical materials and time constraints, they need to develop accounting student soft skills in the classroom (Larson et al., 2020; Plant, Barac, & Sarens, 2019; Rebele & St. Pierre, 2019). Helliar, Monk, and Stevenson (2009) claim that formal lecture is useful to impart technical knowledge, and working in a small group in tutorial class develops students' soft skills effectively. The student may learn by participate, talk, ask, receive feedback and be critical. As an effort to develop accounting student's soft skills, we apply online team-based learning pedagogy in tutorial class for Diploma in Accounting students.

## II. METHODOLOGY

A total of 114 students of Diploma in Accounting in a university in Melaka was selected for this study. The students experience online Team-Based Learning (TBL) activity in tutorial class for Auditing subject via Google Meet and Google Classroom. The online TBL component applied in the course includes Pre-work, Individual Readiness Assurance Test (IRAT), Team Readiness Assurance Test (TRAT) and Clarification (Michaelsen & Sweet, 2008). The data were collected via a Google Forms survey. The questionnaires were adapted based on previous research by Shaw, Fisher, & Southey (1999) and Christensen, Harrison, Hollindale, and Wood (2019). The survey contains three sections. The first section collects the demographic information. The second section contains five items measuring student perception of the online TBL learning experience. The third section contains five items measuring student perception about teamwork skills. All items are measured using a 6-point Likert scale. 71 students submitted their responses. The data were examined based on descriptive statistics using SPSS PASW 18. Cronbach's alpha was computed to test the reliability of measurement items and a validity test was calculated before the analysis.

## III. RESULTS/FINDINGS

The respondents consisted of 57.70% female and 42.3% male students. Majority of the respondent is at the age of 20 years old (60.60%). The Cronbach Alpha for measurement items for student perception of online TBL is 0.93 and for student perception about teamwork skills is 0.92 which exceeds the minimum threshold of 0.70 suggested by Hair, Black, Babin, Anderson, and Tatham (2006). The average variance extracted (AVE) for student perception about online TBL learning experience is 0.7367 ( 73.67%) and for student perception about teamwork skills is 0.7580 (75.80%), which is above the threshold of 0.50 to support the convergent validity. A descriptive statistical analysis shows that students have a high level of perception of the online TBL learning experience. The mean value and standard deviation (mean/SD) are between 4.49/0.652 (Online TBL is an enjoyable experience) and 4.72/0.831 (Online TBL impact positively on my coursework marks). The students have a high level of perception about their teamwork skills in an online TBL environment. While for the teamwork skills, the five measurement items are between 4.44/0.806 (Motivate others in online TBL environment) and 4.68/0.732 (Get groups of people to complete a task). The result indicates that accounting students have a high-level perception of online TBL in developing their teamwork skills. The accounting students perceive that the online TBL impact positively on their coursework marks. The elements of TBL, which require the student to work on a small group basis, to be accountable, to receive frequent and timely feedback, allows them to gain a deep understanding of the topic which help them to stay on track in their coursework (Michaelsen & Sweet, 2008). The finding is consistent with a research study by Peters et al., (2020), which found the TBL group students score higher midterm marks than the non-TBL group. As for the perception of teamwork, students perceive that they can get groups of people to complete a task. The TRAT and ongoing feedback on team performance allow the team to develop their confidence to complete the team assignment effectively (Michaelsen & Sweet, 2008). This result is consistent with the finding by Frame et al., (2015).

## IV. CONCLUSION

The implementation of online TBL pedagogy in accounting courses provides a positive learning experience for accounting students. TBL also helps in developing the student's teamwork skills, which is significant for future accountant and auditors. Other accounting educators should consider implementing TBL in their classroom, whether in an online or face-to-face platform.

## ACKNOWLEDGEMENT

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# THE USE OF SELF-DIRECTED LEARNING IN A VIRTUAL REALITY ENVIRONMENT

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***Abstract***

Technology never ceases to improve. The knowledge obtained from this ever-evolving field is infinite, and the possibilities are endless. It continues to amaze us to see how far the world has come, and the changes that have been implemented and presented to date. The amount of time and energy put into the research of technology has opened up a vast amount of possibilities for a better and brighter future. Learning has been an essential part of human lives, as one is able to learn something new or pick up an entirely new skill at any time. This study focuses on the application of virtual reality in a self-directed learning environment. The importance of this research can be used by developers of educational virtual reality programmes that prioritize self-directed learning as a guideline for better understanding their end-users. This research can also be beneficial in helping to understand the possibilities and limitations of virtual reality programmes in a self-directed virtual reality learning environment.

***Keywords—self-directed learning, virtual reality, Self-management***

## I. INTRODUCTION

Students who engage in self-directed learning demonstrate a greater awareness of learning responsibilities and goals. The research problem in this study is that theoretical learning may be difficult for students to experience practically in real-world scenarios (Mantovani, 2001). However, learning with virtual reality provides a much more interesting, fun and immersive experience for the learner (Weng et al., 2016). Hence, the use of self-directed learning in a virtual reality learning environment is able to provide a better understanding for learners. Also, more risks are taken in a virtual world compared to the real world, thus enhancing the learner's experience (Weng et al., 2016). The purpose of this study is to understand how ready university-level students are for a self-directed virtual reality learning environment and to investigate the potential and limitations of self-directed learning with the use of virtual reality.

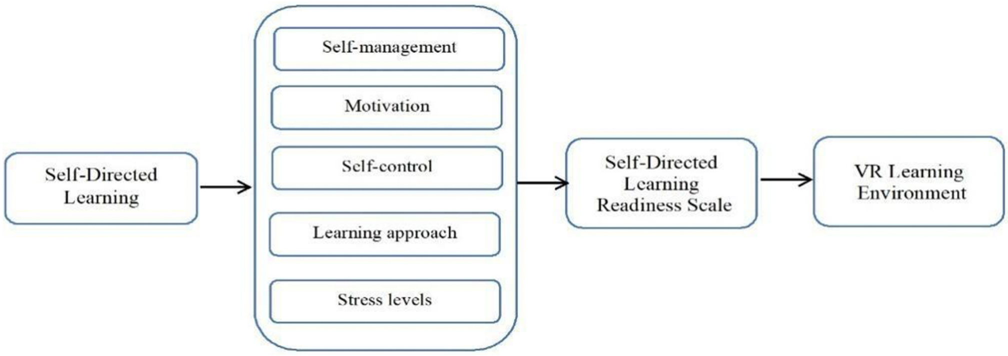
## II. LITERATURE REVIEW

According to Knowles, there are five principles in the practice of adult learning, which are self-concept, adult learner experience, readiness to learn, orientation to learning and the motivation to learn (Knowles, 1975). When the principle of self-concept is looked upon, it demonstrates that it is the idea of self-directed learning and knowledge evaluation. Self-directed learning describes itself as a learning strategy whereby learners take an initiative in discovering their learning needs, formulating goals, identifying learning resources, choosing the proper learning strategy, and finally, evaluating the learning outcome (Ellinger, 2004). The self-directed learning model describes three dimensions that overlap with each other, namely, self-management, self-monitoring and motivation. These dimensions are intimately connected with one another (Garrison, 1997). Self-directed learning views its learners as managers of their own learning process, and thus integrates self-management, which includes management of the context, including resources, social settings and actions with self-monitoring, whereby learners monitor, evaluate and regulate their learning strategies (Bolhuis, 1996). Self-directed learning also acknowledges the significant role of motivation and volition in maintaining the learners' efforts, as motivation is the driving force in deciding to participate and engaging in a task till its end, in order for goals to be achieved (Corno, 1992). The advantages of practicing self-directed learning demonstrate that there is an increase in students' learning interests through their active participation, as it raises their awareness of their learning styles allowing, them to decide on which method works best for them. This in turn helps in improving their motivation, satisfaction and academic achievements, which boosts their appreciation for learning. Students are also able to obtain additional workplace-required skills such as planning, decision-making as well as problem-solving (Lavasani et al., 2011).

## III. CONCEPTUAL FRAMEWORK

This study aims to determine how ready university-level students are in a self-directed virtual reality learning environment and to investigate their perceptions based on this learning environment. The principle of self-concept by Knowles explains knowledge evaluation and self-directed learning, which is the primary focus of this study (Knowles, 1975). This can be measured using the Self-Directed Learning Readiness Scale (Wiley 1983; O'Kell 1988; Linares 1989, 1999), wherein there are several factors that are considered in understanding the readiness levels of students. These factors are self-management, desire to learn or motivation, self-monitoring, learning approaches and stress levels. The results of the Self-Directed Learning Readiness Scale would then be analysed and used to form open-ended questions-based students' perceptions of learning in a self-directed virtual reality learning environment. The perceptions of the students are also affected by several factors based on their individuality and experience with virtual reality. The individuality factors are based on attitude, personality, motive, interest, past experiences, and expectations, whereas the virtual reality factors are based on the sense of presence, realism, simulator sickness and experience (Rookes & Willson; 2005).

*Figure 1. Conceptual Framework*




## IV. CONCLUSION

It is found in other research works that the use of virtual reality can be useful, as it is able to provide a better understanding for the learner, and also helps with memorization (Kamińska et al., 2017). The engagement of learning with virtual reality provides an exciting and interesting experience that also allows learners to explore their curiosity and take risks that they are unable to take in real life (Weng et al., 2016). The utilization of this learning strategy allows learners to imagine, observe and visualize events in more detail, thus improving their learning effectiveness. This in turn provides a positive impact on their performance, and significantly better learning motivation and outcomes (Liou & Chang, 2018). Learners establish their work within their own environment, modifying their ideas, and making their own sets of objects and connecting relationships between them (Thorsteinsson & Shavinina, 2013).

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# USING AUGMENTED REALITY TO ENHANCE STUDENTS' LEARNING OF 3D MODELLING: A PRELIMINARY STUDY

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***Abstract***

This paper presents a preliminary study that sought to investigate the use of Augmented Reality (AR) to enhance multimedia design students' learning of a fundamental 3D modelling topic and to solicit students' perception of learning with AR. A mobile-based AR application was developed in UNITY and the application incorporated Authentic Learning elements as a pedagogical framework to provide real-world relevance that bridges the gap between theory and practice. Preliminary results of the study indicate that students generally perceived the AR application to be useful to learn a technical design subject. Results show that the AR application provided authentic context and authentic activities that allowed them to gain a better understanding of the 3D modelling technical concepts when they can view the effects immediately from within the application. However, students were still unsure if they would frequently use similar AR-based learning tools in their classes. An additional investigation needs to be done to determine the critical characteristics of such applications that influence their intention to use these learning support tools.

***Keywords—Augmented Reality, Authentic Learning, education technology, multimedia design***.

## I. INTRODUCTION

The use of emerging technologies such as Virtual Reality (VR), Augmented Reality (AR) and Mixed Reality (MR) to support learning environments have been explored by educators in various applications and disciplines to create immersive learning experiences (Moro, Stromberga, Raikos, & Stirling, 2017; Becker, Brown, Dahlstrom, Davis, DePaul, Diaz, & Pomerantz, 2018). While emerging technologies have shown potential as a support tool in the classroom to increase student engagement, there is a need for these technologies to be used within a pedagogically sound framework (Garzón, Baldiris, Gutiérrez, & Pavón, 2020). Authentic Learning, which is a theory that has evolved from situated learning and has its roots in constructivism, focuses on learning activities that allow students to creatively problem-solve as they apply theoretical knowledge into a relevant practical context (Lindsay & Wood, 2014). In merging the two, research has found that students were able to interact better and gain real experience in an AR-based Authentic learning environment (Cai, 2018). Traditionally in a 3D modelling subject, students would have to use professional 3D modelling tools which are resource-intensive and often work best on a personal computer (Mao & Luo, 2019). Mobile-based AR applications can potentially allow students to recall and test key concepts immediately using AR, by-passing the need for rendering each reiteration which takes time and resources to do so. Therefore the motivation of this study was to investigate students' perceptions towards the use of AR as a method to support their learning of 3D modelling skills.

## II. METHODOLOGY

An Augmented Reality mobile application was developed using the elements of Authentic Learning as outlined by Herrington, Reeves, and Oliver (2014) as a pedagogical framework to ensure the application was developed to be theoretically sound. The mobile application itself was developed using UNITY software. The topic chosen for this study was "Lighting in 3D Modelling". The topic of lighting in 3D modelling is a fundamental technical topic learned by diploma and degree design students hence making this a suitable topic to be explored and developed in an AR mobile application. Authentic Learning elements were adapted as the pedagogical framework for the development of the AR mobile application and how it would be used in the learning environment. The application contained infographic-style videos that allowed students to reflect on key concepts and theories they would have learned in class. Students could explore two key concepts situated in an authentic context through the use of Augmented Reality which allowed them to manipulate the technical effects and see the changes in real-time. Students were also scaffolded through a Role-Playing Game (RPG) designed to test their knowledge and apply this knowledge by solving the scenarios presented in-game.

A group of 41 students from the Diploma programme in the Faculty of Creative Multimedia at Multimedia University voluntarily participated in this study. Due to the challenges of testing an AR mobile application while classes are still being conducted online and students are not on campus due to the COVID19 pandemic, students were given an online demonstration of the AR application instead and allowed to make an appointment with the team to test the application remotely. This was followed by a questionnaire adapted from the Technology Acceptance Model (TAM) survey used in a previous study by Tan, Neo, Neo, Hew, and Muhammad Syahmi (2020) whose survey was first adapted from Davis (1989) and Rasimah, Ahmad, and Zaman (2011).

## III. RESULTS/FINDINGS

A preliminary analysis of the survey findings indicates that students were overall positive towards the perceived usefulness of AR for learning a technical subject. 78.1% of students felt that the AR application would help enhance their learning (mean = 3.71) and the majority of the students agreed to strongly agree that using the AR application can help them improve their learning of design skills (73.2%, mean = 3.83). 78% of students responded positively when asked if they liked the idea of using the AR application (mean = 3.88) and 70.8% of students believed that using the AR application in their classes is a good idea. As students were not able to experience the AR application in person, students did indicate they were still undecided (36.6%) when it comes to their intention to use similar applications for their coursework while 56.1% indicated a positive response (mean = 3.71).

## IV. CONCLUSION

In conclusion, preliminary results from the study provide positive encouragement to continue exploring the use of Augmented Reality as a tool to support learning concepts that may be challenging to be presented to design students and for these applications to be developed using Authentic Learning elements which can provide a solution to bridge the gap between theoretical knowledge and practical application. Further analysis needs to be done to delve deeper into understanding students' expectations and acceptance of learning with these emerging technologies.

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# VIRTUAL LEARNING FOR L2 LANGUAGE SPEAKING DEVELOPMENT

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***Abstract***

During the past few years, Intelligent Personal Assistants (IPAs), also known as Digital Voice Assistants (DVAs), have shown promising results in aiding L2 language learners in several different ways. This study aims to focus on the AI Technology Alexa Echo Dot - DVA integration in an ESL classroom, to investigate its impact on improving ESL students' speaking and pronunciation skills through the implicit feedback provided by the IPA Amazon Alexa. More specifically, this study explores Alexa's role in improving the speaking proficiency of L2 learners in order to improve their intelligible speech, vocabulary and pronunciation.

***Keywords—L2 Pronunciation, L2 Speaking, Digital Voice Assistant, Alexa Echo Dot, intelligent personal assistant***

## I. INTRODUCTION

Intelligent Computer-Assisted Language Learning ICALL amalgamates Computer Assisted Language Learning with Artificial Intelligence to interact with humans using Natural Language Processing (NLP). Bibauw et al. (2019) state that in order to improve learners' proficiency in a target language, a computer can provide opportunities for such a practice, despite a native speaker being the ideal interlocutor. According to Nazerian (2018), the devices which were meant for day-to-day life assistance are now being utilized for educational purposes. Nazerian (2018) further asserts that in terms of learning a second language, conversational opportunities are readily provided by Amazon Alexa. Goksel et al. (2016) state that Intelligent Personal Assistant (IPA) devices are now being researched for their potential to assist in teaching and learning purposes by both educators and researchers. According to Chou et al. (2017) and Neiffer (2018), IPA devices enhance student engagement in the classroom, and can easily provide supplemental knowledge which builds up upon a student’s initial knowledge in various topics. According to Goksel (2016), IPA devices have been deemed beneficial for second language learning. Machajewski (2018**)** concurs that original questions can be remembered well by asking those questions to devices, since these devices have a large database of knowledge, and Alexa is no exception, has become among the main mediums to access information. Hence, it is crucial to investigate how emerging technologies can help L2 Language learners to become more proficient. The purpose of this study is to examine the role of the Digital Voice Assistant (DVA) Amazon Alexa – Echo Dot's in improving L2 speaking proficiency among ESL Learners using the *constructivist learning theory* by Lev Vygotsky *(*1978).

## II. LITERATURE REVIEW

A feasibility study was conducted by Moussalli and Cardoso (2016) on the use of Alexa outside the classroom as a language learning tool for four L2 ESL students. Learner generated and pre-determined questions were asked by students while interacting with the virtual learning assistant for roughly 30 minutes. According to the results of the study, it was determined students received implicit feedback from the DVA, and enjoyed interacting with the virtual learning assistant, but faced the drawbacks when students' accents were not understood by the voice assistant. Moussalli and Cardoso (2019) investigated a larger number of students to examine the use of Alexa. Different strategies were used in this study, including repetition, and rephrasing to resolve potential breakdowns during the communication. But unlike previous studies, the results showed that DVA did not have difficulty understanding accented speech. This difference between the results was probably due to the study size, participants' language proficiencies, and the use of different methodologies to conduct both studies. The prior study was conducted using a survey and interview responses, whereas the latter one utilized transcript, apart from surveys and interviews. Dizon (2017) investigated the ability and capacity of the virtual learning assistant Alexa to comprehend L2 speech. According to the results, student feedback reflected positive IPA-supported effectiveness. It was determined that Alexa provides indirect pronunciation feedback, as well as opportunities for conversation in the target language.

## III. CONCEPTUAL FRAMEWORK

Unlike Piaget, Vygotsky's theory of social constructivism emphasizes strongly on the sociocultural context with the key process of learning and development called the zone of proximal development (ZPD), which is also known as a 'sweet spot' wherein learning occurs, and learner's knowledge develops with the help of a more knowledgeable other (human or technology) by instructional scaffolding. Vygotsky believed that learning is a social process whereby learners interact with the more knowledgeable others to develop their initial knowledge and concepts. According to Vygotsky's theory of constructivism in terms of language learning, language plays a vital role in shaping the thoughts and internalization of the language and results in cognitive development. Apart from that, the audio-lingual language teaching method is based upon the behaviourist theory, through which learners can be trained through drill and practise reinforcement. Learners receive precise negative and positive feedback. This study's theoretical framework is based upon two basic learning theories of constructivism, namely, Vygotsky's social constructivist theory, and the behaviorist theory, which uses an audio-lingual method whereby students go through the drills and practice to improve their L2 pronunciation skills and construct their own knowledge by interacting with Amazon Alexa Echo Dot.

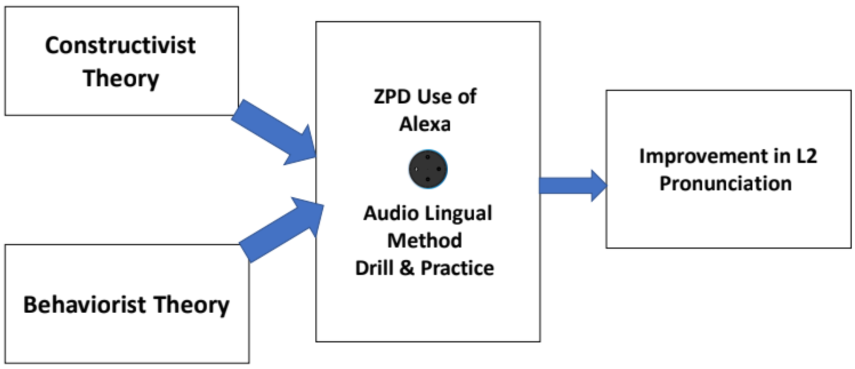


Figure 1: Conceptual Framework

## IV. CONCLUSION

L2 interaction plays a vital role in developing speaking and listening skills. According to Wallace (2015), due to factors of anxiety, fear, lack of time and reluctance, students often do not indulge in interacting with another speaker. Hence Liakin et al. (2017) assert that automated speech recognition-based technologies can help users with speech assistance and improvement. The results obtained by previous studies have illustrated a positive impact on L2 learners speaking skills, but more research is required with a larger group of participants to determine the impact of Alexa in improving L2 speaking, specifically as improvement in language pronunciation is one of the major concerns in ELT learning and teaching.

## ACKNOWLEDGEMENT

The authors would like to express appreciation for the support from TM R and D and the Merlin's Playground research programme team leaders and members.

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# VISUAL COMMUNICATION FOR SOCIAL MEDIA: PRACTICAL EXPERIENCE IN ADVERTISING DESIGN COURSE

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***Abstract***

The advancement of communication technology and the emergence of new media have caused a change in consumer behaviour and media consumption demands. Advertising is no longer promotional activities but a continuous effort to engage with the consumer. Thus, this prompted the challenges of visual communication for advertising teaching and learning in higher education. This study applied a conceptual framework of studio pedagogy and project-based learning that allows students to publish their artwork and get feedback from the audience. The participants of this study were 19 students from Multimedia Advertising Programme in Multimedia University Cyberjaya. The students formed a group of 3-4 members and were assigned to create a social media campaign on Instagram. Students learn to understand types of visual communication contents that consumer likes and engage using Instagram Insights. Through the practical project in a studio class learning environment, students can be more aware of the process of producing visual communication and messages for social media and experience professional practice and ethics

***Keywords—visual communication, social media, advertising design, practical experiences***

## I. INTRODUCTION

Kujur Kujur & Singh (2020) stressed the importance of visual communication in social media for brands and organizations. The multimodal elements of visual communication content can help brands and organizations to create awareness about the brand identity and brand message (Russmann & Svensson, 2017, and Kujur & Singh, 2020). A loyal follower of brands in social media will generate a positive impression of the brand that results in an increase in sales (Russmann & Svensson, 2017, and Kujur & Singh, 2020). Examples of visual communication content for social media are graphic design, photography, video, gif, hashtag, and copywriting. According to Huang (2019), the industry expected graduates from visual communication and advertising courses need to acquire basic skills such as drawing, copywriting, communication, planning, and creativity as well as could do pre-design research, data analysis, and information design.

Traditional teaching processes for advertising design classes that teach visual communication tend to focus on the knowledge of the theory and hands-on activity in a studio learning environment. The studio learning environment allowed the students to solve practical tasks either individually or collaboratively with the peers and the lecturer will closely monitor the projects throughout the entire process with consultations. For example, in how to design a good layout for digital media advertising, students will first apply the theory of design and secondly develop an appropriate concept for the target audience whilst in the end; build a mock-up. However, it was observed that design applications based on the creation of the concept and mock-up model, are lacking emphatically in visual communication understanding. To design visual communication content for social media, not only does it involves narrative but also the constitutive elements of sociality with multimodal elements to engage with the consumer (Schreiber, 2018). This aspect requires greater flexibility and practical experiences in visual communication design to meet the needs of the fast-paced industry (Huang, 2019).

## II. LITERATURE REVIEW

With the social media platform, brands have practiced an even more calibrated approach in interpersonal visual communication. Thus, creating brand experiences and engaging the consumers on a more personal level. What is shareable and showable varies by audience and context (Schreiber, 2018). She stated that the different styles and aesthetics means of a calibrated visual communication have not been a focus of research and that competencies in visual communication are often framed as artsy or unnecessary. As brands are now keenly identified as participants of the social media: Instagram as an active personage, they will also be viewed upon and studied as such. These practices of selective sharing have been researched as curation, assemblage, and self-presentation (Good, 2013 and Walker-Rettberg, 2016) and are in line with the researcher's focus and study, as the groundwork in collecting feedback in interpreting the understanding of real industry scenario.

The site(s) of circulation is an integral part of the student's project, on how images and messages are distributed across the media, and this relies heavily on the algorithms mining of user's behaviour in order to tailor the circulation of online content and frequency of exposures (Russmann & Svensson, 2017). This also has a bearing on the site(s) of the audience, which deals with examining forms, structures, and processes of the perception and reception of visual images as well as its effects on the audience (Müller & Geise, 2015). It is important for social media researchers to ask, "how people make sense of the visual in using social media" (Hand, 2017, p.215) it is about finding answers to questions of who interprets, how and which visual images with what effects. With the benefits of social media in the delivery of the students' project, whilst exposing directly into the market with optimized reach to the audiences, seemed attractive, rapid, and interactive, the tools to measure and assess the actualization of the experimental project is solely based on the share mode of the social media platform. However, proof of followers is still questionable and unreliable.

## III. CONCEPTUAL FRAMEWORK

Design education classes often use studio pedagogy in which students actively engage in the creative process under the guidance of an instructor with the hands-on assignment. The lecturer encourages students to decide, experiment and take risks while working on the creative process at the same time. Moreover, the lecturer does provide consultation in the scaffolding structure (Sawyer, 2017). Visual communication knowledge cannot be achieved with theory only, the students need to do the practical activities to develop their knowledge and skills. With the integration of Project-Based Learning (PBL*),* that provides the students with real-world learning, engages them in investigative tasks, enhances students' inquiry process, and produces a tangible artefact that was believed to motivate the students beyond academic content (Sadrina, Mustapha, & Ichsan, 2018).

## IV. CONCLUSION

The project-based learning approach was designed to facilitate studio pedagogy has gained a positive impact on the students' understanding of visual communication for social media. They have acquired knowledge in taught theory in the classroom and have developed a deeper understanding through life experiences during the project data cumulation from Instagram Insight and analytics. This suggests a further study for future research in the university policy on the intellectual property of such a project. The new media advertising has changed dramatically and keeps on evolving. The challenge-is to provide the graduates with a deeper understanding of their field in the industry. As the main pipeline of creative talents for the advertising and related industry, it is necessary to focus on a timely exercise of reforming the curriculum and the providence of practical experiences in a learning environment that meets the needs of modern society.

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# DIGITAL MARKETING

# A MEASUREMENT TO EXAMINE FACTORS INFLUENCING ONLINE BUYING BEHAVIOUR: IMPULSIVE BUYING TENDENCIES AS ANTECEDENT

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***Abstract***

The current study aims to test tools for measuring factors that may influence the behavior of customers during the online buying process. The tool consists of items to measure the factors that may influence online buying behavior, namely utilitarian, hedonic, self-esteem, impulsive buying, and intentional buying tendencies. The data taken from 60 respondents selected purposively and was analyzed by using SPSS version 25. Results show that 6 constructs and 33 items considered to be valid and reliable in the test. For that reason, the measurement tool is qualified to be used in further study.

***Keywords: Buying Behavior, Hedonic motive, Impulsive Buying Tendencies, Intentional Buying, Self-esteem Motive, Utilitarian Motive.***

## I. INTRODUCTION

Study on online consumer behavior is very essential especially in the pandemic era (Covid 19) since the customers do more online buying rather than in store buying (wearesocial.com, 2021; JAKPAT, 2021). To really understand the pain and gain of the customers, hence enables companies to serve them with the right product, price, quality, and do a good communication. Online buying behaviour refers to the process of purchasing products or services via the Internet (Monsuwe et al., 2004). The type of buying behaviour will remain the same with traditional buying. The factors influencing buying process (personal, psychological, social) will also remain the same with traditional ones. However, customers' stimuli and customers' experience regarding buying process will be somewhat different. E-commerce has drastically changed traditional buyer-seller relationships, as well as the shopping process for many consumers Bellman's study (1999, as cited in Lo et al., 2016). Today, consumers can browse and compare endless product catalogs, create wish lists, and enjoy powerful features such as search, personalization, and the benefits of social networks Dholakia 1999; Brown et al., 2003; Leskovec et al., 2007; Guo and Agichtein, 2010; Lo et al., 2016). In this study, the authors have identified certain behavior of today's consumers, which are materialized as prominent consumption behavior that leads to online Buying Behavior. The study on buying behavior is complex because it involves a lot of factors that remain subjects of debate among scholars. This work has studied a simplified model of buying behavior that deliberately selects self-esteem and hedonic as main motives to make a purchase decision because both motives will provide a contrast to the third motive which is utilitarian. In this model, utilitarian motive act as an independent variable that influence buying behavior and it is mediated by intentional buying trait as opposes to impulsive buying tendencies. This model under study is expected to more generally accepted across a variety of situational as well as method settings. Therefore, the model needs to be tested empirically to the acceptance level of buying behavior construct.

To test the model, a set of measurement tools should be decided and tested for validity and reliability, hence the objective of this study tends to compose the valid and reliable measurement tool for the model.

## II. METHODOLOGY

The set of measurement tool in this study is a set of questionnaires developed following four steps as follows, first was reviewed the items from the previous related studies (Indrawati, 2015). In total, there are 6 constructs used in this research, namely impulsive buying tendencies, self-esteem, hedonic web browsing, Utilitarian web browsing, intentional buying, and buying behavior. The previous study as the resource of impulsive buying tendencies items was by Rook and Fisher (1995). Self-esteem items were taken from Rosenberg (1965), hedonic web browsing items were taken from Park et al. (2012). Utilitarian web browsing items were taken from Park et al. (2012), intentional buying items were taken from Venkatesh et al. (2012) and buying behavior items was taken from Howard and Sheth (1995). In total there are 35 items measured on a 5-point Likert scale ranging from 1=Strongly Disagree to 5=Strongly Agree.

The second step was to analyze the items through discussion with the related experts in the field. The third was a readability test to see if the items of the questionnaires are already easy to read. From the test, this study found out that all the items used already fulfill the requirement. The last was a pilot test to see if the process of collecting data would go smoothly and fulfill the requirement of validity and reliability. The data for the pilot test was taken from 60 respondents conveniently among University students and staffs. The collected data were analyzed by using the software of SPSS version 25. The authors checked the validity based on the corrected item total correlation (CITC) and the reliability based on Cronbach-Alpha (CA). As cited in Indrawati (2015:149), the CITC value is seen to be valid when it has a score > 0.25 for 60 respondents with a 0.05 significance level and to be reliable when the CA score of 0.7 or above.

## III. RESULTS/FINDINGS

The results of the developing questionnaire reveal that impulsive buying tendencies have 11 valid and reliable items. Self-esteem has 5 items; hedonic web browsing has 3 items. Utilitarian web browsing has 5 items, intentional buying has 5 items and buying behavior has 4 valid and reliable items. The following are the items and the factors.

| Impulsive Buying Tendencies (Rook and Fisher, 1995) |
|---|
| 1.1 It is a struggle to leave nice things I see in the online shop |
| 1.2 I sometimes cannot suppress the feeling of wanting to buy something |
| 1.3 I can become very excited if I see something, I would like to buy |
| 1.4 I find it difficult to miss discount items |
| 1.5 If I see something new, I Want to buy it |
| 1.6 I am a bit reckless in buying things |
| 1.7 I sometimes buy things because I like buying things, rather than because I need them |
| 1.8 When I buy something, I usually buy it spontaneously |
| 1.9 Ads on social media apps can lead me to spontaneous online purchases |
| 1.10 Ads on online shopping portals can lead me to spontaneous online purchases |
| 1.11 I often buy things without consulting to other people |
| Self Esteem – (Rosenberg, 1965) |
| 2.1 Sometimes I think I am not qualified |
| 2.2 I feel like I have nothing to be proud of |
| 2.3 Sometimes I feel I am useless |
| 2.4 I wish I could respect myself more |
| 2.5 Generally I tend to feel like a failure |
| Hedonic web browsing (Park et al., 2012) |
| 3.1 While web browsing, I am able to forget my problems |
| 3.2 While web browsing, I feel relaxed |
| 3.3 During web browsing, I am very excited, like playing |
| Utilitarian web browsing (Sajad Rezaei,et al 2016; Park et al.,2012) |
| 4.1 I am browsing to buy the product at the best price |
| 4.2 I am browsing to buy the best quality of products |
| 4.3 I browse shopping web sites to gather information about products |
| 4.4 I look around the shopping web sites to comparison online shop |
| 4.5 I browse the shopping web sites to get additional value as much as possible |
| Intentional buying (Venkatesh et al.,2012) |
| 5.1 I intend to use e-commerce to shop online in the near future |
| 5.2 I predict myself to be using e-commerce for online shopping in the near future. |
| 5.3 I plan to use e-commerce to shop online in the near future |
| 5.4 I hope I will be using e-commerce to shop online in the near future |
| 5.5 My goals is to use e-commerce to shop online in the near future |
| Buying Behavior (Venkatesh et al., 2012; Howard and Sheth, 1969) |
| 6.1 I often buy products online |
| 6.2 I buy products online regularly |

| |
|---|
| 6.3 Almost every week I shop online |
| 6.4 There is no day without online shopping |

## IV. CONCLUSION

The study revealed that to test the proposed model in this study, there are 6 constructs that can be measured with 31 items which are valid and reliable. Hence the measurement tool can be used for further study, collecting main data to test the model of customer online behavior.

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# ACCEPTANCE OF MOBILE ADVERTISING AMONG GENERATION Z IN MALAYSIA: IMPLICATIONS FOR BUSINESS SUSTAINABILITY THROUGH DIGITALIZATION IN A POST-COVID-19 WORLD

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***Abstract***

The phenomenal growth of mobile devices and mobile Internet users worldwide is reflected in Malaysia with a continuous increase in smartphone penetration rate, alluring marketers to deliver marketing messages directly to targeted consumers using mobile advertisements. Although the COVID-19 pandemic has placed many industries at a near stand-still with a huge reduction in advertising budget, mobile advertising spending increases. While the movement is restricted, consumers who stay home spend more time on their mobile devices for work and leisure purposes, giving marketers a great opportunity to deliver marketing messages via mobile devices. Thus, this study aims to examine the determinants influencing the acceptance of mobile advertising among Generation Z, an age cohort with higher smartphone ownership and usage rate than older generations. Using a virtual snowball sampling technique, an online survey was conducted involving 200 respondents aged between 18 to 23 years old. The collected data is analysed using a quantitative approach. The findings show that performance expectancy, effort expectancy, social influence, and facilitating conditions significantly affect the acceptance of mobile advertising among the respondents. Collectively, the determinants explain 63.9% of the variance in the acceptance of mobile advertising. The findings suggest important managerial implications for businesses. Limitation and suggestion for future studies are also highlighted.

***Keywords – adoption, mobile advertising, generation Z, business sustainability, digital transformation***

## I. INTRODUCTION

Over the past decade, mobile communications have seen enormous growth worldwide. In Malaysia, the number of smartphone users is estimated to reach 31.76 million in 2021, with an estimated smartphone penetration rate (as a share of the population) of 96.89% (Statistica, 2021a and 2021b). The high penetration rate of the smartphone along with the unique characteristics of mobile devices make it an effective tool to deliver advertisements to targeted consumers (Wang and Genc, 2019). Today, mobile advertising (which appears on smartphones and tablets using wireless connections) accounts for the largest share of digital advertising spending worldwide. However, the COVID-19 pandemic has paused economic activity as many countries implemented lockdown to contain the spread of the coronavirus. The global health crisis has caused many industries to revise and adjust their future outlooks, including advertising spending (World Economic Forum, 2020). It is predicted that the global advertising market will experience a slash in expenditure (eMarketer, 2020). As consumers' movement is restricted to stay home, mobile traffic has skyrocketed, pushing many businesses to transform their advertising strategy digitally and increase their mobile advertisement spending to ensure business recovery and sustainability.

Recent studies on the determinants influencing the acceptance of mobile advertising only focus on general consumers. Notably, past studies showed that Generation Z (born between 1997 to 2015) recorded higher smartphone ownership and usage rate than any other age groups. Although consumers in this age cohort spend lesser time watching advertisements, they can recall the advertising content better than older generations. Such attributes give a great opportunity for marketers to connect and engage with this prospective audience using mobile advertisements. Thus, more attention should be devoted to Generation Z's attitude towards the acceptance of mobile advertising. In the light of the Unified Theory of Acceptance and Use of Technology (Venkatesh, Morris, Davis and Davis, 2003), this study hypothesises that performance expectancy (PE), effort expectancy (EE), social influence (SI), and facilitating conditions (FC) as the direct determinants of the acceptance of mobile advertising among Generation Z in Malaysia. This study defines PE as 'the degree to which a user perceives that mobile advertisements will help him or her to get useful marketing messages during information search process'; EE is defined as 'the degree of ease associated with the adoption of mobile advertisements'; SI as 'the degree to which a user perceives that important others believe he or she should adopt mobile advertisements'; FC as 'the degree to which a user believes that technical infrastructure exists to support the adoption of mobile advertising.

## II. METHODOLOGY

An online survey was conducted in November 2020 to avoid posing any COVID-19 transmission risk to the researchers and respondents. A virtual snowball sampling technique was applied where the online survey link was first posted on a social media platform and later shared by the participants to his or her virtual network. A screening question was used to ensure only individuals aged between 18 to 23 years old, or Generation Z, take part in the online survey. The online survey was closed when 200 valid responses were collected which were deemed useful for data analysis. The data were analysed using Statistical Package for the Social Sciences (SPSS) 27.0.

## III. RESULTS/FINDINGS

Descriptive analysis is conducted to study the respondents' demographic profile and their experience with mobile advertising. Among the 200 respondents, the majority are male (57%), aged between 18-20 years old (58.5%) and having at least a tertiary education background (58.5%). Separately, 59.0% of the respondents had received at least a mobile advertisement in the past month. However, half of the respondents claimed that they do not prefer to receive any mobile advertisements while the remaining prefer to receive once per day (17.5%), 2-4 times per day (15.0%) and 5 or more times per day (17.5%). The majority of the respondents ignore mobile advertisements completely upon receiving them (54.5%) while others only read mobile marketing messages occasionally (29.0%) or after accumulating too many (9.5%). In short, the respondents showed low tolerance towards mobile advertising. Reliability analysis showed that all constructs are deemed reliable with Cronbach's Alpha above 0.80. Separately, regression analysis showed that PE, EE, SI and FC collectively explain 63.9% of the variance in the acceptance of mobile advertising, with EE being the strongest determinant ($\beta = 0.599$).

The findings suggest important managerial implications to the businesses to enhance the acceptance of mobile advertising among the consumers, particularly Generation Z. To enhance EE, mobile advertisements must be easy to use by taking consumers to a mobile-friendly landing page that perfectly matches the intent of the visitors and easily navigable from their smartphone. Furthermore, FC should be strengthened so that the technical infrastructure exists to support the use of mobile advertisements. This can be done by adding customisation to tailor mobile advertisements based on consumers' location, device, and local time. In addition, PE should be improved to make mobile advertisements useful. Marketing messages must be relevant, updated and match customers' immediate need with an immediate call-to-action. Also, mobile-specific ad extensions should be utilised to increase the click-through rate of mobile advertisements such as location and call extensions to give customers more information and act upon the advertisements before they even click on them. Ideally, while keeping the texts short, mobile advertisements must incorporate images and videos to appeal to consumers' subconscious minds and attract their attention. Lastly, SI can be intensified if businesses advertise on social media platforms where the users are. Social media users are highly engaged and active in sharing mobile marketing messages to their social networking and change others' behaviour to meet the demand of a social environment.

## IV. CONCLUSION

The findings indicate that PE, EE, SI and FC are found to exert a significant positive effect on the acceptance of mobile advertising among the respondents. This provides guidance for businesses to craft impactful mobile advertising campaigns targeting this increasingly important market segment. Also, the findings arguably suggest the significance of mobile advertising as a key component of marketing strategy nowadays. Nevertheless, the findings might suffer from limited generalisability to the entire population of Generation Z in Malaysia given the small sample size taken in this study. Future studies are suggested to test and ascertain the validity and reliability of the research framework across a broader population of mobile advertising consumers in Malaysia.

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# AN ANALYTICAL STUDY ON ONLINE CONSUMER BEHAVIOURAL PATTERNS IN ADVANCING MALAYSIAN ECOMMERCE INDUSTRY

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***Abstract:***

In Malaysia, consumerism and e-commerce are considered fairly new, if compared to our counterparts in South East Asia, Japan and South Korea has dabbled in the world of e-commerce far before Malaysia has. Consumerism in Malaysia was only introduced in the early 2000's as Malaysia opened its doors to pursue globalization far into the 90's, the movement saw strength with the introduction of e-commerce as local consumers felt the need to be protected by legislations and laws (Saaid, 2013) This research focus on the impact of e-commerce in Malaysian socio-economy with regards to consumerism. The objective of this research is to understand the Malaysian socio-economic impact based on consumer perception regarding e-commerce and consumerism,

***Keywords: Digital Economy, E-commerce, Consumerism, Globalisation, Malaysia***.

## I. INTRODUCTION

Consumerism is an economic ideology that protects the interest of the consumers from policies and practices that inconveniences or is unfair to consumers. Consumerism has seen many shifts in history, modern consumerism in turn has evolved into a movement where consumers seek the rights to be protected, and is practiced by the individual, the strength of consumerism values highly depends on how an individual's practices and exercise their rights to be protected and to be treated fairly. Modern consumerism demands that governments and businesses alike listen to their needs and responds accordingly. This serves as a challenge to business owners and also an opportunity, as consumerism demands an increase of production of goods and services and consumption demands increases. The implementation of e-commerce in Malaysia has to meet the standard of consumerism in order to deliver satisfaction and confidence to their consumers.

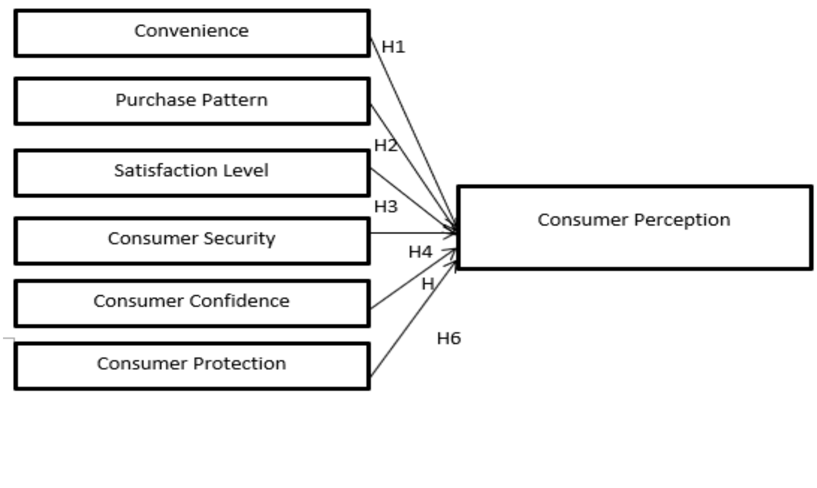
## II. LITERATURE REVIEW

Malaysian e-consumers are not convinced with the level of protection of the laws and legislations that protects them, it arises the issue of private information and credit card payment integrity (Mohmed, Azizan, & Jali, 2013)

The regulatory framework and consumer protection acts require further improvement in to inspire more consumer confidence and to give a better consumer perception towards e-commerce (Amin & Mohd, 2013).

## III. CONCEPTUAL FRAMEWORK

**Theoretical Framework**



- *H1: Consumer perception is not affected by convenience*
- *H2: Consumer perception is not affected by Purchase Pattern.*
- *H3: Consumer perception is not affected by satisfaction level*
- *H4: Consumer perception is not affected by Consumer Security.*
- *H5: Consumer perception is not affected by Consumer confidence.*
- *H6: Consumer perception is not affected by Consumer Protection.*

## IV. CONCLUSION

The findings of this study indicate that the socio-economic impact of e-commerce in Malaysia through consumer perception is fairly positive. It is safe to conclude that convenience, purchase patterns, satisfaction level, and consumer confidence has a significant influence on consumer perception, in other words, affected by consumer perception, while consumer security and consumer protection doesn't. Overall, we can say that e-commerce with regards to consumerism has a positive impact on the Malaysian socio-economy.

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# APPLICATION OF MOBILE GAME AS A MEDIA INTERPRETIVE TOOL FOR THE TOURISM INDUSTRY

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***Abstract***

The use of mobile games is another means of engagement like other interpretive media tools in the field of tourism marketing. This study was therefore undertaken to investigate the stakeholders' perceptions of the usability and multimodal elements needed in mobile games for the promotion of tourist attractions. In this qualitative study, interviews among sales and marketing employees were conducted to collect data for thematic analysis of views related to usability and interactive multimodal elements. The findings of this study have shown that the use of mobile games has enhanced users' interest and knowledge of tourist attractions through their positive experiences while playing the mobile game, based on its usability and interactive multimodal features. Consequently, the stakeholders have recognised the potential of using mobile gaming as a media interpretive tool for tourism. Therefore, the components of usability and multimodality should be given consideration during the design and development process of mobile games as these two features have a significant impact on the mobile gaming experience for engaging and inspiring tourists to visit certain attractions. In conclusion, the tourism industry would benefit from the tourism mobile game mode in this era of technological change as another media interpretive tool for their marketing campaigns.

***Keywords—interpretive media tool, mobile game, usability, interactive multimodal, tourism marketing***

## I. INTRODUCTION

Interpretive media is a tool used by the tourism industry to tell stories or information about an attraction (Cave, J. and L. Jolliffe 2012) that leads to meaningful experiences for the visitor (Cave, J. and L. Jolliffe 2012). With the extensive growth of technology, the utilisation of mobile applications in various sectors such as education, medicine and entertainment has been evolving rapidly. The local tourism industry commonly uses printed media like newspapers or magazines and electronic media or social media, via Youtube videos, FB pages or websites, to promote tourist attractions. However, mobile applications, especially integrated with gamification elements, are rarely used. This study aims to explore the perception of stakeholders in the tourism industry on the implementation of mobile games as an interpretive media tool in the context of game design catering to the usability and interactive multimodal elements that are applied for tourism promotional purposes.

## II. METHODOLOGY

The primary data of this study will be collected using the semi-structured interview as an instrument. This instrument allows opportunities to discover interviewee's experiences that are unique from one another allowing insights into a different view, depending on how they had experienced and perceived certain information (McGrath, Palmgren & Liljedahl, 2019). The sampling of this study consisted of sales and marketing employees in the tourism industry. The perception of these stakeholders towards the usability of mobile games as an interpretive media tool, gathered through interviews and analysed through thematic analysis, focused on their experience in terms of the effectiveness, satisfactory and efficiency elements of the mobile game in promoting tourist attractions besides the engaging impact of the interactive multimodal features on the stakeholders' mobile gaming experiences.

## III. RESULTS/FINDINGS

This study indicated that the users' experience has been positive through the feedback received on the effectiveness, satisfactory and efficiency elements of the tourist mobile game. The game is integrated with the key ingredients of interactive multimodal features like interfaces integrated with attention-grabbing visuals, audio, and engaging game elements to boost interest and motivation among users. The finding confirms the study by Yáñez-Gómez et al., (2017) who reported that these three multimodal modes can help users feel motivated to continue playing the game since they feel satisfied when they are able to complete all the challenging tasks offered by the mobile game. Moreover, the features of the mobile game have enhanced their mobile gaming experience due to the effectiveness and efficiency of the games' functionalities.

## IV. CONCLUSION

In conclusion, this study revealed the tourism industry stakeholders' perception towards mobile game as a value-added media interpretive tool that offers a positive experience for tourism promotion initiatives. Usability perspective on the efficiency, satisfactory and effectiveness elements are essential and should be emphasized during the design and development process of the media interpretive tool since these design considerations may have impact on engaging and motivating users to continue using the mobile game to enhance their knowledge of specific tourist attractions, as the first step to gain their interest to actually visit these attractions.

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# COVID - 19 PANDEMIC: A STUDY ON E-WALLET ADOPTION AMONG STUDENTS

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***Abstract***

The COVID-19 pandemic has caused huge disruption to the daily lives of people all over the world. Due to the Movement Control Order implemented in Malaysia since March 2020, many citizens in Malaysia opted to purchase goods and services online by using E-wallet since the advancement of technology was upgraded from cash to cashless system and the existence of E-wallet promotes and allows consumers to make online purchases and financial transactions. This research focuses on the factors affecting e-wallet adoption among students during the COVID-19 pandemic in Malaysia. A total of 200 students all over Malaysia participated in this research. Samples were selected using convenience sampling and the respondents answered the questionnaire via Google form and paper and pencil method and the data were analysed using SPSS. The data collected and also information in this research are highly beneficial and valuable to students, researchers, financial institutions and the government as we are able to gauge and understand the factors influencing students' perception of E-wallet adoption. In conclusion, the research findings show that there is a significant relationship between speed, convenience and security and the adoption of E-wallet among students in Malaysia.

***Keyword: E-wallet, adoption, students***

## I. INTRODUCTION

The COVID-19 pandemic, also known as the coronavirus pandemic, is an ongoing pandemic of coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). It was first identified in December 2019 in Wuhan, China. The World Health Organization declared the outbreak a Public Health Emergency of International Concern in January 2020 and a pandemic in March 2020. As of 5 March 2021, more than 116 million cases have been confirmed, with more than 2.57 million deaths attributed to COVID-19, making it one of the deadliest pandemics in history. The prime minister of Malaysia, Tan Sri Muhyiddin bin Haji Muhammad Yassin implement Movement Control Order (MCO) on 18 March 2020 to control the spread of the virus. During the MCO period, many businesses and factories were closed temporarily. Purchases of necessary goods from supermarkets and grocery shops were only restricted to one representative from each household to avoid physical contacts and maintain social distance. Thus, this situation encouraged many citizens in Malaysia to purchase goods and services online by using E-wallet since the advancement of technology was upgraded from cash to a cashless system. Credit card and debit card has been advanced as the replacement of physical money to do transactions in the daily routine such as payment of bills, online transfer, online purchases and even online banking during this modern era. Precisely, E-wallet was often indicated as a digital and m-wallet. The payment system of virtual cards enabled the transactions via smartphones with credit or debit card information stored, providing the same utility as a physical debit and credit card (Ray, 2017). These unconventional types of the wallet also being claimed by the conventional banking system, it threatens them as the enhancement of transactions or money transfer with minimal fees, lesser hassle and shorter time (Blockchains, 2018). On the other hand, Jayaseelan (2017) mentioned the significance of E-wallet utilisation in Malaysians' daily life in moving forward towards being a cashless society. In short, the existence of an E-wallet promotes and allows consumers to make online purchases or transactions. Hence, this research focuses on the factors affecting e-wallet adoption among students during the COVID-19 pandemic in Malaysia

## II. METHODOLOGY

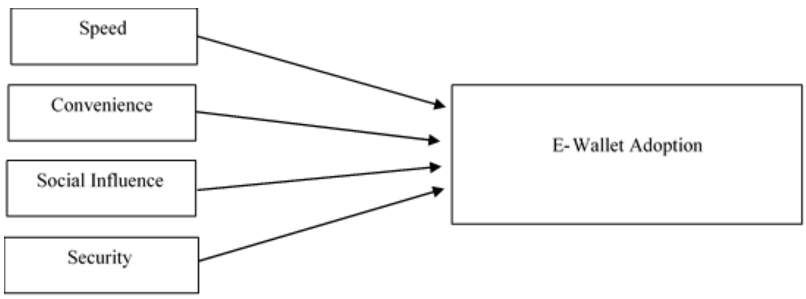


**Figure 1:** Research Framework (Developed for this research)

The research framework is the structure that supports the research theories and it is the most significant aspects of the research process. The dependent and independent variables provided in Figure 1 shows the relationship between these two variables. Research framework has been set up based on the relationships between e-wallet adoption as a dependent variable and speed, convenience, social influence and security as independent variables. The independent variables are used as intermediary variables to measure factors affecting the adoption of e-wallet among students during the COVID – 19 pandemics.

The population is a determinable total interest base based on research by researchers. The population used in this study are a group of students from various educational institutions. The total number of respondents is 200 students. In this research, non-probability sampling was used, whereby the researchers selected samples based on subjective judgment. Convenience sampling was used in the research. Its speed, cost-effectiveness and sample availability are the reasons why this sampling method was chosen. All the data information is collected by questionnaire. Questionnaires were distributed through face to face and electronic form, whereby students will answer the questions in the questionnaire online and their answers will be collected online too.

To analyse the demographic data, the concepts captured under this study and their relationships, Statistical Package for the Social Sciences (SPSS) is used in this study. SPSS is able to process a lot of information and all the analyses involved in this study can be carried out. SPSS was used in this research since it is associated with many of the other software packages for data analysis. The data analysis method used is shown below.

## III. RESULTS/FINDINGS

There was a total of 200 respondents from various educational institutions participated in this research. Out of these 200 respondents, 105 were female respondents and 95 male respondents ranging from 18 to above 27 years old from all over Malaysia. Besides that, their monthly basis expenditure via e-wallet range from less than RM 150 (119 respondents) to more than RM550 (7 respondents). Based on the multiple regression analysis, there is a significant relationship between speed, convenience and security and adoption of E-wallet among students in Malaysia during the COVID-19 pandemic as their P-value is 0.000 (speed), 0.000 (convenience) and 0.012 (security). However, there is no significant relationship between social influence and the adoption of E-wallet among students in Malaysia during the COVID-19 pandemic as the P-value is 0.065.

## IV. CONCLUSION

This research was to investigate factors affecting e-wallet adoption among students in Malaysia during the COVID-19 pandemic. The findings from this research are highly beneficial and valuable to students, financial companies, future researchers and the government. The research will be able to create a pathway for further understanding and development of e-wallet payment specially created for the student market.

However, there are some limitations that should be considered when conducting this research. Firstly, the sample size in this research was small with only 200 respondents. Therefore, the findings might not able to provide the perception of e-wallet adoption among students for the whole of Malaysia. Secondly, the data cannot be collected smoothly in a short period of time. This is because most of the respondents were not willing or did not have time to fill up the questionnaire. This makes data collection becomes difficult for researchers.

Further research is recommended to obtain a larger sample size from students all over Malaysia. A larger sample size allows researchers to draw a stronger conclusion about the relationship between the variables. The questionnaires should be distributed to more than one location to increase the accuracy of the data obtained.

In conclusion, students' perception of e-wallet adoption is clearly shown in this research. Therefore, mobile app developers can attract more users by developing better user-accepted mobile payment systems and promoting their benefits to students.

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# COVID-19 PANDEMIC: STUDY ON MOBILE WALLET ADOPTION

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***Abstract***

In line with the new norm practice during the outbreak of the COVID-19 pandemic, government authorities have encouraged the public to practice the contactless payment method. With an initiative under the Penjana Economic Recovery Plan, Malaysians will receive RM50 worth of mobile wallet credit to encourage safe and contact-free payment in July 2020. Hence, this paper aimed to examine the factors affecting consumer adoption of mobile wallet during the COVID-19 outbreak. The independent variables including this study are perceived usefulness, perceived ease of use, social influence, performance expectancy and perceived security. A set of the self-administered questionnaire is distributed to 250 respondents in three states of Malaysia. The response rate is 94% where 235 sets of completed questionnaires are used for the analysis purpose. The model is using the Partial Least Square Structural Equation Modeling (PLS-SEM 3.2.7). The hypothesis testing result concluded that performance expectancy and perceived security are having a significant relationship towards mobile wallet adoption during the COVID-19 outbreak. Nevertheless, this research is beneficial for developers of mobile wallet and other researchers. In conclusion, the findings of this research provide some of the managerial implications to developers of mobile wallet which can help the developers can create a better mobile wallet in the marketplace.

***Keywords—mobile wallet, adoption, COVID-19, perceived security, performance expectancy***

## I. INTRODUCTION

Due to the outbreak of the Corona Virus Disease 2019 (COVID-19) that has happened globally, the World Health Organisation (WHO) has encouraged the implementation of the social distancing policy where the public is encouraged to do contactless activities, including contactless payment transaction. One of the problems which consumers do not adopt on mobile wallet due to the need to spend their time on making the payment step-by-step via mobile wallet where the mobile wallet is a significant need of the effort to purchase goods or services. Thus, the consumers suffer from the procedures of the mobile wallet and this becomes a problem why the users do not adopt it. The foremost serious issues which make consumers do not adopt on the mobile wallet are about security. There are 46% of non-users mentioned that the biggest barrier which lets them giving away to try mobile wallet is security. Besides, there are more than 59% of people believe that they make payment by using a mobile wallet their credit card or debit card will be a fraud and 30% of people concern about their transaction will be missing. Consumers do not use mobile wallet due to worry about the website is fake and the details of the bank will leak out (Tan, 2019).

Furthermore, the risks of another incident faced by users are scams including hacking, malware that allows criminals to access devices and sensitive data, phishing attacks and passwords and private information which show by the users. Some of the hackers are paid by someone to block the victim and get important and sensitive information through the devices. Another way that cybercriminals can steal sensitive information by using public Wi-Fi. Users should take this as an important issue which to prevent the incident happen again. Users must avoid doing any transactions by using public computers and networks (Yuen, 2019). It is to prevent others from misuse of personal information.

However, the transaction value is over RM 20 billion between January 2020 to September 2020 based on the data released by Bank Negara Malaysia (Yunus, 2020). Yunus (2020) also mentioned that the mobile wallet providers are seeing higher take-up during the movement restrictions periods as consumers embrace contactless payment as a safer mode amid the spread of the COVID-19. Hence, the main objective of this study is to investigate factors affecting mobile wallet adoption during the COVID-19 pandemic.

## II. METHODOLOGY

A set of the self-administered questionnaire has been distributed to 250 respondents in three states of Malaysia which are Johor, Melaka and Selangor that has covered the majority populations of Malaysia. The response rate of this research is 94% where 235 sets of the completed questionnaire are used for the analysis purpose in this study. The five independent variables which are perceived usefulness, perceived ease of use, social influence, performance expectancy and perceived security are employed to study the relationship towards mobile wallet adoption during the COVID-19 pandemic. The questionnaire items used to measure the variables are adopted from Chawla and Joshi (2019) and Musa et al. (2015). The collected data were keyed into SPSS version 25 and followed by using Partial Least Square Structural Equation Modeling (PLS-SEM 3.2.7) to assess the hypothesis.

## III. RESULTS/FINDINGS

For the result of hypothesis testing, it shows there are two variables out of the five which are perceived security and performance expectancy are supported whereas the perceived usefulness, perceived ease of use and social influence are not supported.

The analysis result showed that there is a significant relationship between perceived security and consumer adoption of the mobile wallet. Hence, the developers need to concern about the security in which consumers have positive thinking on adopt of mobile wallet in Malaysia. If the security of the mobile wallet is no good, consumers will no adopt it because it is no secure for the personal and private information of the users. Nowadays, consumers are more concerned about security because scare other people misuse or share personal or private information on the social network. Therefore, developers need to put more effort into the security of mobile wallet to ensure the mobile wallet is secure when users key in their personal information.

Furthermore, this research recommends developers to make the mobile wallet more useful in which consumers can make a transaction more quickly, improve the quality of the online transaction, improve the efficiency of online transactions and so on. It is to ensure consumers have positive thinking on adopt of mobile wallet in Malaysia. Therefore, the developers need to make sure the mobile wallet is useful for everyone to make any transaction. Nevertheless, the developers also need to ensure the mobile wallet is easy to use for everyone. If consumers use mobile wallet need complicated steps to make a transaction, consumers will no adopt mobile wallet. Thus, the developers need to ensure the step-by-step navigation of mobile wallet is easy to understand, minimum effort when making the transactions and so on. It is to ensure the mobile wallet is easy to use for everyone, so consumers will adopt of mobile wallet in Malaysia.

## IV. CONCLUSION

In conclusion, the main contribution of this research is focusing on the knowledge about factors affecting consumer adoption of mobile wallet in Malaysia. This knowledge is beneficial especially to the developers of the mobile wallet. It is to let developers more understand the consumer adoption of mobile wallet in Malaysia. Developers need to know which factor is more important to the consumer and focus on it to make it better compared to competitors. They should put more effort into the factors that will affect consumer adoption of mobile wallet in Malaysia to ensure most of the consumers will adopt to use the mobile wallet to make any transaction.

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# THE EFFECT OF MARKETING MIX PERFORMANCE AND QUALITY OF SERVICE TOWARDS PURCHASE DECISIONS ON B2B CUSTOMERS (A CASE STUDY OF PERTAMINA LUBRICANTS IN WEST JAVA)

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**Abstract**

As the market leader in the Indonesian lubricant industry, Pertamina Lubricants had a 55% market share in the B2B industrial lubricants segment, as well as 25% in the industrial engine lubricants. This study aimed to determine the effect of marketing mix strategies and service quality on B2B consumer purchasing decisions in West Java. Structural Equation Modeling (SEM-PLS) was used for data analysis which is processed using SmartPLS with a population number of 700 and 288 respondents. The results of this study reported that the respondent's assessment of each marketing mix variable and the service quality variable was in a good category, all of them had a significant positive effect on purchasing decisions. In contrast, the promotion variable did not have a significant positive effect on purchasing decisions on Pertamina B2B Lubricants consumers in West Java. The coefficient of determination of 0.743 showed that the 4P marketing mix variable and service quality variable together had an effect of 74.3% on purchasing decisions.

**Keywords:** ***Marketing mix, service quality, B2B Customer, Purchase Decision***

## I. INTRODUCTION

Marketing mix means product, distribution, promotion and pricing strategies to generate and carry out exchanges and reach target markets (Išoraitė, M 2016). According to Singh (2016), marketing is a complex range of marketing mix solution variables used in the company seeking to sell their goods and services. Quality of service can be interpreted as an effort to meet the needs and desires of consumers and delivery accuracy in balancing consumer expectations (Abdullah, 2020).

Industrial lubricant demands in Indonesia are expected to grow with a compound annual growth rate (CAGR) of 1.8% around 320.2 kilotons in 2022. CAGR rate from 2022 to 2027 is expected to increase up to 2.1% with the expectation of better industrial sector growth, due to improvements in mining and the electricity sector, as well as infrastructure development (Kline & company, Inc. Global lubricants: market analysis and opportunities, 2017).

The total demand for industrial lubricants is estimated to reach 292.8 kilotons in 2017. This amount showed a volume growth of 0.7% since 2016. In the years 2018 & 2019, Pertamina Lubricant's sales realization data of industrial engine lubricants in West Java showed an indication of a decrease in sales volume. Therefore, in the need to face global competition Pertamina has built sales offices throughout Indonesia (Domestic) to reach industrial markets in remote locations as well as overseas markets so Pertamina can compete with Shell, Total, Exxon Mobil, and JXTG Nippon Oil. Besides Pertamina also have made several marketing mix efforts and increase service quality to increase sales. This study aimed to determine the effect of marketing mix strategies and service quality on B2B consumer purchasing decisions in West Java.

## II. METHODOLOGY

This research is quantitative. Based on the research objectives, this research is descriptive with a positive paradigm. The study used a strategy survey consisting of the 4P marketing mix variable Product, Price, Place, Promotion (Kotler et al., 2017; Rafdinal & Amalia, 2019). and the service quality variable as the independent variables and the purchasing decision as to the dependent variable (Andreti et al., 2013).

The sampling process uses a probability sampling technique, simple random sampling, which is defined as a sampling process with the requirement that every member of the population has an equal chance of being selected as a sample (Indrawati, 2015). The valid data from 288 respondents were processed by using descriptive analysis and multivariate analysis, SEM-PLS with the help of SmartPLS3 software. (Indrawati, 2015)

## III. RESULT / FINDING

The results of the descriptive analysis of each variable were good, with the results of interpretation score criteria approximately > 80%. The Product variable has a total score of 7229 with a score percentage of 83.7%. The Price variable has a total score of 6951 with a score percentage of 80.5%. The Promotion variable has a total score of 5380 with a score percentage of 74.7%. The Place variable has a total score of 7207 with a score percentage of 83.4%. The Service Quality variable has a total score of 8327 with a score percentage of 82.6% and the Purchase Decision variable with a total score of 5759 with a score percentage of 80.0 % which indicates that all variables are in a good category.

The results of the SEM-PLS analysis using the outer model with the Validity Convergent Test, Average variance extracted (AVE) value has a loading factor greater than 0.50, meaning that all indicators in each latent variable are valid as a measuring tool (Indrawati, 2015).

From the results of the Fornell Lacker Criterion test, AVE root value of the Place variable was 0.804 higher than the highest correlation of the Price, Product, Promotion, and Service Quality variables. From the coefficient of determination (R-square) value, we know that Product, Price, Promotion, Place, and Service Quality together had an effect of 74.3% on purchasing decisions. This value is greater than 0.67 which indicates that the model has a good prediction power.

## IV. CONCLUSION

Based on SmartPLS results, this study found that the factors which have a positive and significant influence on Purchase Decision for B2B Consumers from the highest to the lowest respectively are Place, Product, Price, and Service Quality, while Promotion does not have a positive and significant effect on purchase decisions on Pertamina B2B Lubricants consumers in West Java. Hence, it is suggested to Pertamina: first, to make a system of vendor held stock, a fuel system management to be transferred to the customers' terminal. Second, give service differentiation to B2B Customer to make them loyal and increase their buying.

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Singh, M. (2012). Marketing mix of 4P's for competitive advantage. *IOSR Journal of Business and Management*, *3*(6), 40-45.

# EXPLORING THE TIKTOK INFLUENCES ON CONSUMER IMPULSIVE PURCHASE BEHAVIOR IN MALAYSIA

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***Abstract***

TikTok is one of the most widely used platforms popular among young adults and teenagers has over 800 million monthly active users in 2020. With its significant growth, user acquisition, a rise of brands appearing on the platform; this study explores the TikTok influences on consumer impulse purchase behaviour in Malaysia. Utilizing the Stimulus-Organism-Response (S-O-R) model to study the product-related stimuli (visual appeal, product feasibility) on the organism (perceived enjoyment and perceived usefulness), towards urge to purchase impulsively. This study collected primary data through the distribution and collection of close-ended questionnaires across online channels. The results of 170 respondents were used to conduct statistical analysis using SPSS and Smart PLS. The findings indicate that visual appeal and product feasibility have direct relationships with perceived enjoyment and perceived usefulness; and indirect impact on an urge to purchase impulsively. Besides, the study affirmed the existence of the positive effect of perceived enjoyment and perceived usefulness among TikTok users on their impulsive buying behaviour. Perceived usefulness is the most significant factor but least performance - highlighting for marketers to focus on improving a users' perception of TikTok's ability to influence the urge to purchase impulsively.

***Keywords— TikTok, S-0-R model, impulsive purchase, perceived usefulness, perceived enjoyment,***

## I. INTRODUCTION

TikTok, a short-form video application, is a popular app among the young generation (Yang et al., 2019). It is known as Douyin in China. It has 800 million active users in 2020 outside of China, and in 2019 had over 4 million users in Malaysia (Ting, 2021). Piron (1991) defined impulse purchases as "unplanned purchases that are the result of stimulus and decided on the spot". Various researchers have examined the influence of social media platforms as marketing strategies. However, these studies are focused on social media platforms other than TikTok, for instance, Dehghani et al. (2016) focused on YouTube advertising, Wang (2016)'s concentrated on the use of the Twitter hashtag, and Hsu et al. (2013) focused on blogger recommendations. There is a lack of researches investigate how 'vlog' content like TikTok affects impulse purchase behaviours. As observed, more products are being unveiled through paid or earned media by influencers to micro-influencers; this study attempts to fill in the research gap to explore the degree of TikTok usage effect on impulsive purchase behaviour. This study probes the TikTok influences on consumer impulse purchase behaviour in Malaysia by applying the Stimulus-Organism-Response (S-O-R) model. The research objectives are to find out to what degree the visual appeal and feasibility of products in TikTok content have towards the perceived enjoyment and perceived usefulness, and their relationship with the urge to purchase impulsively.

## II. METHODOLOGY

Inspire by Chen et al. (2020), this study developed the research framework that focuses on product-related stimuli based on the S-O-R model. Measurement constructs from previous researches were adapted and incorporated into an online survey form using 6-point Likert scale responses. The target respondents are Malaysian young adults with age between 18 to 35, of which is a smartphone user having experience using the application, TikTok. Data was collected via convenience sampling and distributed via social networking platforms and forums, such as Facebook's TikTok sharing group, WhatsApp friends and family groups, Instagram comment sections on videos with #TikTok, or a video from TikTok. One hundred seventy respondents had completed the questionnaires. This research utilizes SPSS version 27 for descriptive statistics; and Smart-PLS 3.3 for model validation and structural model evaluation to identify the relationships of product-related stimuli (visual appeal, product feasibility), organism (perceived enjoyment, perceived usefulness), and response (urge to purchase impulsively) following the S-O-R Model. All the predictor variables presented are hypothesized to have a significant positive relationship towards the response variable while determining which factor has the most significant influence on the urge to purchase impulsively.

## III. RESULTS/FINDINGS

From the demographic analysis, 75% of respondents are female, where 68% are aged between 21-30, consisting of students primarily at 91.2% and that 95.3% are Malaysian with 90% done or undergoing tertiary education and 94% earn less than RM2,500 a month. The descriptive statistics showed that perceived enjoyment had the highest mean of 4.68 and lowest standard deviation of 0.95, indicating responses lean more towards slightly agree with least dispersion. Smart-PLS's results show that all constructs have substantial composite reliability ranging from 0.94 t0 0.959, with a minimum average variance extracted value of 0.799. R square of 0.524 in structural model analysis shows that perceived enjoyment and perceived usefulness comprehend 52.4% of the variation in the urge to purchase impulsively. All hypotheses are proven to have a significant positive relationship. Most notably, product feasibility did yield the highest path coefficient in influencing perceived usefulness at 0.667, whereas visual appeal has a higher path coefficient on perceived enjoyment at 0.493. Besides, visual appeal and product feasibility have indirect effects on the urge to purchase impulsively. Further analysis using Importance-performance map analysis (IPMA) in Smart-PLS indicates that perceived usefulness and product feasibility exerted the top and second significant influence towards urge to purchase impulsively with a standardized path coefficient of 0.612, 0.450, respectively, in total effect. Despite their essential role in influencing impulsive purchases, these two variables have much lower performance than other variables.

## IV. CONCLUSION

From the findings, perceived enjoyment and perceived usefulness have a significant positive relationship with the urge to purchase impulsively, with perceived usefulness having the most influence. The results indicate that the increment of TikTok in product placement, influencers, product recommendations, perceived content value, and network growth shapes the consumer's perception of TikTok's shopping productivity; and their urge to purchase impulsively. On the other hand, perceived enjoyment sheds light on TikTok browsing enjoyment and its role in influencing one's urge to impulse purchase. The product-related factors (stimulus), visual appeal, and product feasibility also play a positive and significant role in influencing the perceived enjoyment and perceived usefulness. IMPA results suggested that marketers could find a strategic way to improve the performance of perceived usefulness and product feasibility of TikTok due to their importance on impulsive buying behaviour.

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# IMPACT OF DIGITAL MARKETING AND CUSTOMER RELATIONSHIP MANAGEMENT IMPLEMENTATION ON REPURCHASE DECISION OF INDIHOME PRODUCT SERVICES (A CASE AT PT. TELKOM JAMBI)

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***Abstract***

Indihome is one of the major products owned by Telekomunikasi Indonesia (PT. Telkom). One of Indihome's marketing programs is implemented digitally through Digital Marketing. Failure to achieve the target in the January to October period raises questions that can be answered whether the implementation of Digital Marketing and Customer Relationship Management (CRM) that has been carried out by PT Telkom Jambi is effective in influencing customers to make repurchase decisions on Indihome services. This study aims to determine the impact of digital marketing and CRM implementation on repurchase decisions on Indihome product services. The research method used is quantitative. Variables analysed were digital marketing, using social networking, mobile marketing, and CRM as the independent variable, and repurchase decision as to the dependent variable. The sampling technique used is probability sampling with proportional simple random sampling. The collected data were analysed by SEM using smartPLS software. The results showed that Social Networking had a significant positive effect on Repurchase Decisions. Meanwhile, Mobile Marketing has no significant positive effect on Repurchase Decisions. CRM has a significant positive effect on Repurchase Decisions. Suggestions in this study for the company based on the lowest item in the CRM variable, it is expected that Telkom can manage the CRM website by improving the user interface and user experience, and for further researchers is expected that the right program to increase the purchasing power of customers should be explored.

***Keywords: Digital Marketing, CRM, Mobile Marketing, Social Networking, Repurchase Decisions***

## I.INTRODUCTION

Telkom uses one of Indihome's marketing programs through digital marketing. Some of Telkom's digital channels for marketing include MyIndihome Customer Application, Digital Channel, E-Commerce, Growth Hacking, InHouse Landing Page, Point of Sales (POS), Sobat Indihome, CRL Landing Page, Social Media, and Web In. According to Indrawati (2017), Digital Marketing is defined as a practice to create awareness and promote online products or brands via the internet. Digital Marketing is now a very popular program or strategy used by most companies around the world. This is the impact of the increasing use of the internet, making it a very prospective market. Through this digital channel, Telkom also offers opportunities to streamline and establish relationships with customers through CRM. According to Kotler and Armstrong (2004), CRM is the process of building and maintaining long-term profitable relationships with customers through the provision of valuable and satisfying services. The dimensions of CRM consist of human resources (people), processes and technology (Turban; 2004). The dimensions that are more suitable to be measured in this study are the dimensions of CRM, especially in the technology dimension. CRM itself is closely related to customer buying interest to create a win-win situation by increasing customer added value so that they continue to use products from a company or make additions or modifications to services or better known as repeat purchase decisions.

## II. METHODOLOGY

The method used in this research is the quantitative method. The variables analysed were digital marketing, using social networking, mobile marketing, and CRM as to the independent variable, and the repurchase decision as the dependent variable. The data of this study come from 100 respondents who are customers using Indihome services that registered through digital channel marketing. The sampling technique used is probability sampling with proportional simple random sampling. The data analysis technique is carried out through a structural equation modelling (SEM) analysis model that is processed with SmartPLS 3.2.

## III. RESULTS/FINDINGS

A total sample of 100 data had been collected using an online questionnaire with Google Form. The results showed that Social Networking had a significant positive effect on Repurchase Decisions. Meanwhile, Mobile Marketing has no significant positive effect on Repurchase Decisions. Customer Relationship Management has a significant positive effect on Repurchase Decisions.

## IV. CONCLUSION

Based on the test results, it shows that Social Networking and CRM have a significant positive effect on Repurchase Decision. The research model used to measure repurchase decisions as seen from the R-Square is 0.689 and is included in the good category. This means that 68% of the repurchase decisions are impacted by the Social Networking, Mobile Marketing, and CRM variables and the rest is influenced by other variables

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# THE EFFECT OF E-SERVICE QUALITY ON CUSTOMER LOYALTY THROUGH CUSTOMER SATISFACTION AS INTERVENING VARIABLES

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***Abstract***

Jenius is an application that integrates all banking transactions into one application. Jenius became the first digital banking in Indonesia with the number of active users currently reaching 2 million. But behind the number of users, there are many complaints experienced by the Jenius users who indicate Jenius gives a poor quality of service that will affect the satisfaction and loyalty of users. The purpose of this research is to know the quality of service from Jenius which is perceived by looking at three variables e-service quality, customer satisfaction, and customer loyalty. The study used quantitative methods using questionnaires that spread to respondents using the purposive sampling technique. The valid and reliable data from 400 respondents were analysed by using structural equation modelling with the help of SmartPLS 3.3.2. The results showed that efficiency, fulfilment, privacy, responsiveness, and contact significantly positive effect on customer satisfaction. Customer Satisfaction has a significant positive influence in mediating the relationship between the dimension of e-service quality and customer loyalty. This study shows that responsiveness is a major factor affecting customer satisfaction, so Jenius should be able to shorten the problem-solving time and provide certainty to the user of the maximum limit of problem-solving.

***Keywords— E-service Quality, Efficiency, Fulfilment, Privacy, Responsiveness, Contact, System availability, Compensation, Customer Satisfaction, Customer Loyalty, Jenius***

## I. INTRODUCTION

The increasing number of financial transactions from offline to online makes the digital business competition even higher than before (www.katadata.co.id). This makes BTPN launch a Jenius digital bank that can integrate all banking transactions in one application and customers do not need to come to the branch office because all transactions are only done through smartphones. This application makes it easy for users to make financial transactions and can be done in a short time. The number of temporary Jenius users has increased significantly since it was first launched in 2016 to December 2019 has reached 2 million users (BTPN Annual report, 2019), but the Jenius application is considered to provide unsatisfactory service quality for users. This can be seen from the response to user complaints through the @jeniushelp Twitter account and the number of complaints also affects the rating and reviews obtained by Jenius in the App store which is only 3.7 out of 5. The number of complaints from Jenius customers shows that the quality of e-service must be improved. Therefore, it is necessary to be the main concern of Jenius to evaluate the quality of e-service to improve customer satisfaction and customer loyalty.

## II. METHODOLOGY

This study used quantitative methods with a Likert scale to measure how strongly respondents agreed or disagreed with statements. The population in this study is an active user of Jenius is estimated to reach 2,000,000 active users and this study using 400 samples of respondents, Data analysis techniques using structural equation modeling analysis with SmartPLS 3.3.2 software.

## III. RESULTS/FINDINGS

The results show that responsiveness, efficiency, privacy, fulfillment, and contact have a positive and significant effect on customer satisfaction. Responsiveness is the dimension with the highest impact on customer satisfaction, efficiency is the second factor that affects customer satisfaction and contact is the factor that has the lowest effect on customer satisfaction. Meanwhile, customer satisfaction has a positive and significant effect on customer loyalty.

## IV. CONCLUSION

The conclusion in this study is that responsiveness, efficiency, privacy, fulfillment, and contact have a positive and significant effect on customer satisfaction. The model of this study has also a strong explanatory power of 65.5% and the results of descriptive reveal that respondents regards all the dimensions in this study are in a good category which is indicated by all the score of every dimension are above 68%. One of the suggestions for the company from this research is the management of Jenius must make adjustments or simplification the display on the application so that the speed of accessing information when making transactions can be more efficient.

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# THE CONSEQUENCES OF GREEN BRAND POSITIONING, ATTITUDE AND KNOWLEDGE ON GREEN PRODUCT TOWARD PURCHASE INTENTION

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***Abstract***

This exploration has a target to determine the consequences of green brand positioning, attitude, and knowledge on green products on purchase intention and attitude as an intervening variable on green product purchase intention either partially or simultaneously. The object of this research is the environmentally friendly products of PT Unilever Indonesia, Tbk. This exploration was carried out in the city of Bandung. The procedure used in this exploration is non-probability sampling with a purposive sampling style. Data aggregation is carried out through opinion polls measured by a Likert scale, where aggregated data comes from 400 respondents. Data translation is done using smartPLS 3.0 software. The exploration showed (1) green brand position, attitude, and knowledge have a positive and significant effect on green product purchase intention, (2) knowledge has a positive and significant effect on attitude, (3) this research model is proven to be able to measure exogenous against endogenous variables where the $R^2$ value is 0.707 and can measure the effect of knowledge on attitude, the resulting $R^2$ value is 0.553. PT Unilever Indonesia can use green marketing, social media influencers, digital media advertising, and expose the technology to strengthen brand positioning, consumer attitude, knowledge to increase green product toward purchase intention.

***Keywords— Green, Brand Positioning, Attitude, Knowledge, Green Product Purchase Intention***

## I. INTRODUCTION

Sustainability is currently something that must be done by companies in running their business. Companies are not only looking for profit but are also obliged to protect the environment. Unilever Indonesia in conducting its business is committed to a sustainable business. Unilever has been delegating the Unilever Sustainable Living Plan (USLP) since 2010 which is a milestone in fulfilling Unilever's goals and vision for sustainability (PT. Unilever Indonesia TBK, 2018).

Awareness and innovation in protecting the environment have made the Company strive to be at the forefront of introducing new products with green concepts to the market to seek wider market opportunities (Wu & Chen, 2014). The main modern business sustainability movement is green marketing even though the company's main mission is revenue and profit (Akenjie, 2014; Maniatis, 2015; Yang, Lua, Zhu, & Su, 2015; Suki, Suki, & Azman, 2016). Protection of the environment is an important factor influencing the purchasing decisions of most people in developing countries (Peattie, 1992; Wu & Chen, 2014). In previous research, Suki (2016) examined green product purchase intention of environmentally friendly products in Malaysia using independent variables: green brand positioning, attitude toward green brands, and green brand knowledge. Consumer behavior towards green products through the variables of green brand positioning, attitude, and knowledge that affect green product purchase intention for Unilever Indonesia's environmentally friendly products. The target of this exploration is to explore the consequences of green positioning, attitude, and knowledge towards green product purchase intentions and then to find out whether the model in this exploration can be used to predict consumer behavior towards environmentally friendly Unilever products.

## II. METHODOLOGY

In this exploration, 26 question items to measure green brand positioning, attitude, knowledge, and green product toward purchase intention were adopted from (Wu & Chen, 2014), (Suki N. M., 2016), and (Huang, Yang, & Wang, 2014). The green brand positioning variable adopts five indicator items from (Suki N. M., 2016), the other two are adopted from (Huang, Yang, & Wang, 2014). The variable attitude toward green brands adopts six indicator items from (Suki N. M., 2016). In the green brand knowledge variable, it adopts two indicator items from (Suki N. M., 2016) and four indicator items from (Huang, Yang, & Wang, 2014). Finally, to measure green product purchase intention, two indicator items are adopted (Suki N. M., 2016) and five indicator items from (Wu & Chen, 2014). When researchers tested the validity and reliability using SmartPLS 3.0 software, the authors found 3 items on the GBP indicator did not meet the loading factor and found a higher correlation between the constructs on the GBK and GPI variables. So that the total items that were valid and reliable in this study were 21 indicator items. The valid and reliable data were then analyzed by using SmartPLS3.

## III. RESULTS/FINDINGS

The results of SmartPLS3 showed first green brand position, attitude, and knowledge partially have a positive and significant effect on green product toward purchase intention both partial and simultaneously, second knowledge has a positive and significant effect on attitude, third this research model is proven to be able to measure exogenous against endogenous variables where the $R^2$ value is 0.707 and can measure the effect of knowledge on attitude, the resulting $R^2$ value is 0.553.

## IV. CONCLUSION

The conclusion in this study is that both partially and simultaneously the variable green brand positioning, attitude toward the green brand, green brand knowledge has a significant positive effect on a green product. The model used in this study is able to strongly measure green purchase intention as seen from the $R^2$ value of 0.707, which means that 70.7% of green product purchase intention is influenced by variables in this exploration, namely green brand positioning, attitude toward the green brand, and green brand knowledge. 29.3% is influenced by other factors outside of this study. And this research model can adequately measure the attitude toward a green brand as seen from the $R^2$ value of 0.553, which means 55.3% attitude toward a green brand is influenced by green brand knowledge and 44.7% is influenced by other factors outside of this study. Suggestions for companies from this research are that first the company needs to add a strategy in communicating its green products to the public. Effective and efficient communication can be carried out through social media to build positive consumer perceptions of the company and to create purchase interest. Both companies can use social media influencers and digital media advertising in accordance with the current lifestyle and the latest trends to be able to provide information, reach appropriate consumers, and ultimately increase purchase interest. The three companies can do marketing by exposing the environmentally friendly technology that has been used, namely creasolv, which is a new technology that has been implemented so as to strengthen the positioning and purchase an interest in Unilever's environmentally friendly products.

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# THE EFFECT OF PRICE VALUE, SALES PROMOTION AND SOCIAL MEDIA COMMUNICATION ON PURCHASE DECISIONS

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***Abstract***

Oyster Seafood is a company that concern with seafood in Bandung City. Oyster Seafood has got minus growth of (11.41%) in 2020. According to owner's opinion, this is because price value is not competitive, sales promotion that less than optimal, and passive social media communication, therefore reducing consumer purchase decisions. Further research is needed to determine the cause of the decline in sales. This research used the quantitative method. The sampling technique used non-probability sampling with purposive sampling to 100 respondents. Data analysis used descriptive and causal. SmartPLS 3.3.2 software used for data processing. The results showed that there is a significant positive effect of price value, sales promotion and social media communication on purchase decisions. The highest effect on purchase decision is Social Media communication, then the second one is Price Value and the lowest effect on purchase decision is Sales Promotion. Suggestion for Oyster Seafood is to improve communication methods through social media so that messages can be conveyed properly, conducts price surveys of similar restaurants regularly so that the price can be set more competitive, and adjust promotional gifts given to customers by doing currently popular trend analysis.

***Keywords—Price Value, Sales Promotion, Social Media Communication, Purchase Decision***

## I. INTRODUCTION

Currently, economic in Indonesia continues to grow, especially in big cities such as Bandung. The rapid development of information technology is one of the factors in creating fierce competition in the business world. The business that is being run is no longer oriented to profit but the portion is more customer-oriented. According to Yasmin (2020), the emergence of the coronavirus was detected for the first time in China in early December 2019. At that time, a number of patients arrived at the hospital in Wuhan with symptoms of an unknown disease. According to Wedhaswary, I. D. (2020), on March 2, 2020, Indonesian government officially announced 2 positive Indonesian citizens were exposed to the coronavirus. Both are the first cases reported in Indonesia. The COVID-19 pandemic that has hit the world since the end of 2019 has changed consumer behaviour and has had a very significant impact on the turnover of all companies and business entities so that all business entities are competing to develop strategies to increase consumer purchase decisions in this condition. Marketing strategies applied by Oyster Seafood to increase consumer purchase decisions are price value, sales promotion, and social media communication. It is expected that there will be an increase in sales, but what happened at Oyster Seafood in the 2018-2019 period was a decrease in sales. According to owner's opinion, this is because price value is not competitive yet, sales promotion that less than optimal, and passive social media communication, therefore reducing consumer purchase decisions. Further research is needed to analyse the effect of price value, sales promotion and social media communication on purchase decisions.

## II. METHODOLOGY

The price value on the purchase decisions model in this research was referred to (Djatmiko, T., & Pradana, R, 2016). Looking at sales promotion (Vigna, J. P., & Mainardes, E. W, 2019) and social media communication (Schivinski, B., & Dabrowski, D, 2016) were added to this research model. Therefore, four hypotheses were formed in this research to answer the objective of the research. The population in this study is the people of Bandung who have shopped at Oyster Seafood, but the population size is not known yet. The method used in this research is the quantitative method. The sampling technique used non-probability sampling with the purposive sampling type (Indrawati, 2015). Aimed at Oyster Seafood consumers through direct distribution of questionnaires at Oyster Seafood with a total of 100 respondents (Siregar, 2013). The data analysis technique used is descriptive and causal analysis. Data were processed using Partial Least Square (PLS) with the help of SmartPLS software version 3.3.2.

## III. RESULTS/FINDINGS

A total sample of 100 data had been collected using an online questionnaire with Google Form. The result of this research showed that there is a significant positive effect of the variables used both partially and simultaneously. The variable that most affects purchasing decisions is social media communication. Furthermore, which affects the purchase decision is the price value. Then which affects the purchasing decision is the sales promotion. From the business side, Oyster Seafood can sort the priority to increase purchasing decisions starting from Social Media Communication because it has the largest path coefficient. Furthermore, it can be followed through Price Value and then Sales Promotion.

## IV. CONCLUSION

The model in this research produces an R-Square of 0.76, which means that this model has a strong predictive power in predicting consumer behavior to make purchases at Oyster Seafood. Based on the results of this research, it would be better if this model was used in similar restaurants or other restaurants.

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# THE INFLUENCE OF FACEBOOK LIVE-STREAMING ON CONSUMER PURCHASE INTENTION: THE PERSPECTIVE OF GENERATION Y IN MALAYSIA

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***Abstract***

Today, browsing social media during spare time had become a trend among people. People are using social media for communicating and also, to pass their time. This phenomenon had created a new opportunity for marketers when Facebook launched their Facebook live-streaming in the year 2016. Recently the use of Facebook live-streaming is getting popular among the company. Companies now are using Facebook Live-streaming to promote their product and service. This research aims to study how Facebook live-streaming affects consumer purchase intention. The dependent variable of this study is purchase intention, whereas the independent variable is the attitude, interactivity, peer influence, perceived risk, and product quality. There are 200 sets of data were collected from the target respondents, who are Generation Y on Facebook by using a questionnaire. The result of the study showed that attitude, peer influence, and product quality were affecting the consumer purchase intention when they are watching Facebook Live-streaming. This study will give an insight to the marketers to improve their strategies in affecting the consumer purchase intention when using Facebook live-streaming.

***Keywords—Facebook live-streaming, Generation Y, purchase intention***

## I. INTRODUCTION

The advancement in Internet technology makes social media such as Facebook, Instagram, Twitter, YouTube integrated into our life. Social media nowadays is not only served as a platform to share or to communicate information, however, social media also served as a platform for business people to reach and disseminate information to their customers (Hu, Chen, & Davison, 2019). Among all the social media, Facebook is the most popular social media compared to others. In the Year 2016, Facebook launched its live-streaming function, according to Johnson, Thomas, and Fishman, (2018), Facebook live-streaming is easy to use and easy to access. This makes Facebook live-streaming quickly become one of our most popular social media tools used by business people to sell their products ( Lu, Marek, Chen, & Pai, 2020) especially targeted to Generation Y. Sellers may use real-video to present goods and communicate with potential buyers through the live-streaming shopping feature. Consumers may also share their views and post comments in real-time (Sun, Shao, Li, Guo, & Nie, 2020). However, when there are getting more and more people using Facebook live-streaming to sell their products, marketers have to start to understand the consumer behavior in Facebook live. By understanding the consumers' behavior in Facebook live-streaming, it will enable the marketers to develop a more effective strategy to affect the consumer purchase intention. As a recent concept, live-streaming has so far gained limited research coverage. In comparison, relatively few studies have studied how Facebook live streaming affects consumer purchase intention; hence, this study has an objective to identify the Facebook Live influence on the consumers' online purchase intention in Malaysia.

## II. METHODOLOGY

The Theory of Planned Behavior (TPB) was referred to from the research model ( Azjen, 1980). Looking at the uniqueness of Facebook live-streaming, product quality (Foster & Johansyah, 2019) and interactivity (Tong, 2017) were added in the exiting TPB model to form the research model for Facebook live-streaming. With these, five hypotheses were formed in the study to answer the objective of the study. The population of the study is Malaysian Generation Y who used Facebook live before. Generation Y is targeted because they are the first high-tech generation who are very familiar with the Internet and social media (Yadav & Pathak, 2017). The sample size is at least 150 respondents. An online questionnaire with 5-Likert rating scales is used to collect the data. All the measurement scale used in the questionnaire were adopted from the previous study and validated by the panel. The questionnaires were randomly sent to the user account on Facebook. Convenient sampling and snowball sampling techniques were used to collect the data.

## III. RESULTS/FINDINGS

A total sample of 200 data had been collected using an online questionnaire using Facebook. The result of the study showed that attitude, peer influence, and product quality are going to affect the consumer purchase intention in a Facebook live-streaming, however, Interactivity and perceived risk are not going to affect the consumer purchase intention.

## IV. CONCLUSION

Facebook live-streaming is a feature of Facebook and has become the latest trend for companies to reach consumers. This research can help businesses have a better understanding of which factors are more easily affect the purchase intention of consumers in the Facebook live-streaming. For instance, the marketer can understand how product quality, attitude and peer influence will affect the consumers, from here, marketers can get some insights on how to design their marketing strategy to increase the consumer purchase intention when they are using Facebook live in selling their products.

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# DIGITAL TALENT FOR MANAGEMENT

# A FRAMEWORK FOR WORK FACTORS AND EMPLOYEE WELL-BEING DURING PANDEMIC

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***Abstract***

The outbreak of the coronavirus pandemic forced governments in most countries have announced the countries' lockdown that requires the non-essential business to limit operation, and employees to start working from home in order to contain the outbreak. This pandemic represents an extraordinary disturbance to the global economy as production and consumption are scaled-down. Many people lost their jobs as businesses are forced to close or cut down several employees, which resulted in the increased of the number of unemployment and people faced with health and social- economic stressors. However, with new operational agility comes a different set of possibilities to employee well-being such as facing the work/life struggle, fear and the need for clear and empathetic leadership. Employees are made to quickly adapt to the new norm of working even if it is difficult for them. Evidence from literature suggests that employees with a high level of well-being put better thought and provide greater effort into their work contribution. Thus, this paper aims to propose a framework that integrates work factors and employee well-being amid a pandemic situation. It will help organisations and human resource practitioners understand how work factors could affect their workforce well-being and help them design and develop a better strategy for an employee during the pandemic.

***Keywords—employee well-being, pandemic***

## I. INTRODUCTION

Previously when companies mention working from home or offer that privilege, most people see that as a work flexibility benefit given to the employee. Flexible working offers employees balanced lives and will help them feel less stress, enhanced health and in general give happier work arrangements that can make changes to employee well-being (Gillett, 2018). Studies have shown that employees with a high level of well-being put better thought and provide greater effort into their work contribution (Keeman, Näswall, Malinen, & Kuntz, 2017). However, it all changed after the outbreak of COVID-19. Due to this event, the government in most countries has announced the country's lockdown or movement control order that requires the non-essential business to limit operation and employees to start working from home in cold turkey in order to contain the outbreak.

As researchers around the world are still working to find a vaccine for COVID-19, the rest of the world still need to get used to the new norms that require us to perform social distancing, work from home, quarantine, wearing the mask, frequent use hand sanitiser and mostly have to stay at home until a cure is found. Therefore, it is important for management to keep in mind their workforce well-being as they transition to a new way of working in the middle of a pandemic while experiencing fear and uncertainty (Mercer, 2020).

However, knowledge related to the factors influencing well-being and work attitudes among these working adults during the COVID-19 pandemic is very limited (Song et al., 2020). This study would like to explore employees' feelings, experience and well-being during the pandemic that have affected their working life causing them to make changes in their working style drastically. This study is important because it is significant for organisation to know their employees' condition to ensure their employees are always motivated and committed to their jobs which will lead to individual satisfaction and organisation success.

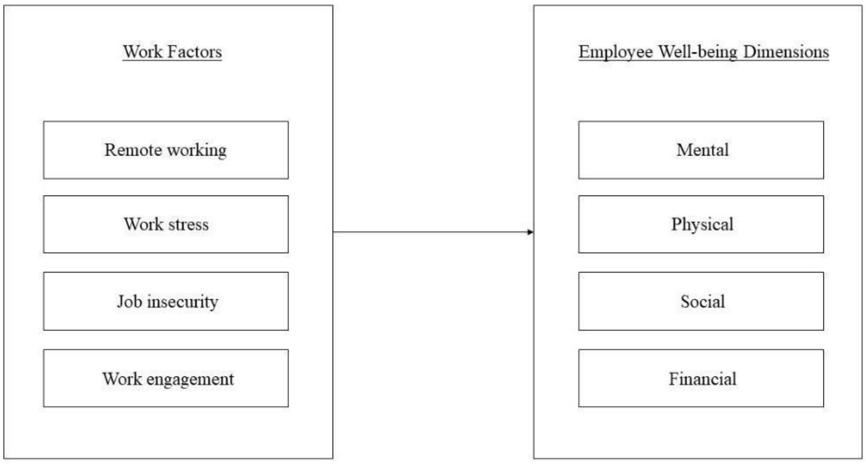
## II. LITERATURE REVIEW

The subject of employee well-being has been known as one of the main issues for employees, employers and the public (Reward & Employee Benefits Association, 2019). It even develops into something more critical during a pandemic (Tuzovic, 2020). In a simple term, employee well-being is referred to as the extensive understanding and function of an employee from a viewpoint of both physical and psychological dimensions (Warr, 1999). Studies have shown that employees with a high level of well-being put better thought and provide greater effort into their work contribution (Keeman, Näswall, Malinen, & Kuntz, 2017).

## III. CONCEPTUAL FRAMEWORK

Based on the review and synthesis of the literature, a conceptual framework linking work factors (remote working, work stress, job insecurity and work engagement) and employee well-being dimensions (physical, financial, social, and mental) is proposed for this study (Figure 1).

Figure 1: Proposed Framework for Work Factors and Employee Well-being




## IV. CONCLUSION

The newly proposed framework that integrates work factors and employee well-being amid a pandemic situation will help organisations and human resource practitioners to understand how work factors could affect their workforce well-being and help them design and develop a better strategy for an employee during the pandemic.

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# BARRIERS TO EMPLOYEE TRAINING IN MANUFACTURING SMES FOR INDUSTRY 4.0

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***Abstract***

SMEs are likely to be reluctant when embracing new technologies. This reluctance could come from various factors which need to be addressed for them to properly adapt to the new technology. The paper looks at why manufacturing SMEs are reluctant to embrace Industry 4.0, with a focus on employee training. This study involves a review of literature such as scholarly articles and organisational reports. Based on the literature review, the limitations SMEs face when they want to embrace Industry 4.0 are human resources, financial constraints, lack of general standards and lack of awareness. In addition, the barriers SMEs face when it comes to training their employees for Industry 4.0 are time constraints, budget allocation and manager's perception.

***Keywords— barriers, training, SMEs, Industry 4.0***

## I. INTRODUCTION

The Fourth Industrial Revolution has introduced technology that is almost completely automated while making use of the Internet of Things to the world. This technology allows companies from different sectors to have a new competitive advantage in their respective markets. For the manufacturing sector, implementing Industry 4.0 could mean a significant improvement in enhancing their company’s productivity and efficiency. While it may be easy for most large companies to invest and adopt such technologies, this cannot be said the same for small and medium enterprises (SMEs).

## II. LITERATURE REVIEW

### Industry 4.0

Where the manufacturing industry is concerned, Industry 4.0 plays a role under the Fourth Industrial Revolution. Industry 4.0 involves the application of disruptive technologies such as robotics and automation in a factory’s assembly line. The major difference between Industry 4.0 and the current existing technology would be a more concentrated usage of automation as opposed to manual labour for certain tasks (Frey & Osborne, 2013).

### Small and Medium Enterprises (SMEs)

According to the Organisation for Economic Co-operation and Development (OECD, 2005), small and medium-sized enterprises (SMEs) are non-subsidiary, independent firms that consist of few numbers of employees. Different countries have different varieties of this number. The most common maximum employee count for an SME in the European Union is 250 employees. Other countries may limit it to only 200, whereas the United States has less than 500 employees. Small firms on the other hand have less than 50 employees, while micro-enterprises have less than 10.

### Human Resources

According to McKinsey (2018), some executives are considering adopting automation. Unfortunately, for them, it would also mean transforming their entire workforce. They need to figure out what type of recruitment is suitable for such a change. Certain employees would need to be reassigned to other jobs as old jobs will disappear and new jobs are created when adapting to Industry 4.0. Horváth and Szabó (2019) have compared multinational enterprises (MNEs) with SMEs and their study indicated that human resource is the main factor that limits SMEs when it comes to Industry 4.0. If Industry 4.0 is implemented, they feared that machines will replace the human workforce completely. This will pose a dilemma for the Human Resource Department as to where to put the extra labour due to automation.

### Training and Industry 4.0

With Industry 4.0, some jobs in the company will become obsolete, and new jobs will be created. Companies can choose to recruit new employees for the newly created jobs. Alternatively, they may also reskill and upskill existing employees to prepare them for their new positions and tasks. Reskilling is concerned with providing a completely new skill set to the employees for their upcoming jobs, whereas upskilling refers to upgrading their pre-existing knowledge and skill in their field (World Economic Forum, 2018). Should companies consider the latter option, it means they will have to train their current employees.

## III. DISCUSSION

Small companies rely on fast turnovers to survive. This in turn creates a time constraint for its employees to meet company productivity levels and deadlines. Hence, employees cannot afford to make time for training as it will be a "waste of time" simply because the time spent 'not working' is seen as a loss rather than an investment in the employee's skill (Susomrith & Coetzer, 2015). Financial constraints are the main factor that affects SMEs in most of their business decisions. This also means that SMEs are more particular with how they allocate their financial assets. According to Padachi et al (2016), 54% of SMEs do have allocation in their budget for employee training. However, 46% of SMEs do not have a budget allocation for their employees' training. According to Lange et al (2000), some SMEs tend to discourage training due to internal reasons within the company. Employees who have more knowledge and experience in a certain field tend to be perceived negatively by their employers or superiors. Some supervisors may see this as a threat to their job security. Susomrith & Coetzer (2015) discovered that employees in SMEs will not voluntarily request for training participation unless required by their employers specifically.

## IV. CONCLUSION

Based on the findings from the literature review conducted for this paper, SMEs have limitations when it comes to embracing Industry 4.0. SMEs encounter barriers that limit them from training their employees with the necessary skills for Industry 4.0. The barriers are time constraint, financial constraint, and managers' perception on trainings.

## ACKNOWLEDGEMENT

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# MALAYSIAN ACCOUNTING AND BUSINESS STUDENTS' DIGITAL SKILLS, KNOWLEDGE AND ATTITUDE

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***Abstract***

Research has shown that many accounting jobs are ripe for takeover by Smart Technology, Artificial Intelligence, Robotics, and Algorithms (STARA). However, many graduates are still struggling to adapt to the digital age. Although there is high unemployment of local graduates, local accounting firms and global business services industries complain of high churn and difficulty in sourcing talent which has to lead to the hiring of foreign talent for plum jobs in the private sector. This paper explores the skills, knowledge and attitudes (SKA) of university students from the business fields and their confidence in the employment market using survey data. 160 predominantly Muslim students were surveyed as Muslim students form the majority of the unemployed as well as to fulfil the research grant mandate. Five scales were developed to measure Soft Skills, Digital Skills, Digital Knowledge, Business Knowledge and Work Attitude. The results showed that the level of SKA are moderate and we conclude that much need to be done to increase the SKA and subsequently the confidence to become employed. The findings from this survey indicate the gaps in digital skills and knowledge that need to be considered by educational programs and policies for accounting and business undergraduates.

***Keywords—digital talent, employment, business, education, attitude***

## I. INTRODUCTION

It was estimated that there were at least 200,000 unemployed graduates in Malaysia, and that number was predicted to rise which is as a result of the nature of global supply chains and emerging countries job creation issues (Ibrahim & Mahyuddin, 2017). However, the Digital Talent Report 2017 (MDEC, 2017) revealed that 66% of the companies surveyed experienced a talent shortage. Thus, hiring foreign workers, though expensive, is a solution to the talent shortage in Malaysia taken up by the digital industry with 12% of their staff being foreign especially for the tech companies (MDEC, 2017). It is not just about availability but also the ability of the talent.

## II. METHODOLOGY

The data were collected from an online survey form distributed through business educators in various higher education institutes throughout Malaysia. 160 participants responded to the survey. The survey collected data on the students' gender, age, religion, year and field of study as well as their self-perceived level of Soft Skills (SK), Digital Skills (DS) Digital Knowledge (DK), Business Knowledge (BK), and Work Attitude (WA). Digital Skills are list based dichotomous response format while other scales are measured using 5-point non-comparative scaling. Composite scales were computed using the sum of responses. Factor Analysis was conducted to validate the Likert scale instruments and descriptive data of the respondents' background and the individual and composite scores of the scales are presented.

## III. RESULTS/FINDINGS

The majority of the respondents are female (69%), Muslims (88%), from public higher education institutions (56%) and in Year 3 or 4 of their studies (80%). Their fields of studies are Management (50%), Accounting (24%), Marketing (21%) and the remainder from Finance and Economics. Box plots analysis of Soft Skill Scale, Business Knowledge Scale, Digital Knowledge Scale and Work Attitude shows that the students are quite diverse in their self-perceptions. Work Attitude especially appears to have many outliers and the outliers are all at the lower scores. At least ninety per cent (90%) of all respondents have some level of digital skills in at least one category. The category with the highest zero skill was Content Creation while the least is in Cybersecurity. Respondents had the least aptitude with Content Creation while the Cybersecurity skills had the highest. Only 7 of the 20 skills listed had more than 50% affirmative responses i.e. Create charts and graphs, Analyze data, Create and edit videos, Do online searching, Secure password, Backup and Data Recovery and safe social media use. The means of most of the Soft Skills, Business Knowledge and Digital Knowledge are all below 4. Only Work Attitude Scales had mean scores of above 4. This indicates the low to moderate levels of digital work-relevant skills and knowledge. Thus, it implies a low level of employability among the students.

## IV. CONCLUSION

The workplace today demands higher levels of digital skills especially among business and accounting graduates. The nature of digital work is also borderless which implies that companies are no longer restricted to local labour supply. Thus, graduates looking for employment are competing more intensely than before and must use their undergraduate period to master the skills and knowledge necessary to enter and navigate the new work environment. Our education system appears to have not prepared them for the workplace well. The respondents appear to be lacking in more than half of the knowledge and skills required for the workplace.

Both the education ministry and higher education institutes must proactively include these skills and knowledge into their curriculum. Dahlan et.al (2020) also notes that new entrants in higher education make it even more critical for partnership with digital players such as Google and Alibaba to be incorporated into the mainstream education system. However, it may be too late for those who are nearly graduating to be equipped with these skills and knowledge in their formal classes. Thus, it's necessary to develop upskilling programmes to fill the gap.

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# STUDENT VOLUNTEER AS A CATALYST FOR CHANGE

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***Abstract***

Technology can have the ability to be alienating, but by constantly searching for ways to use it in the service of creating real-world culture and personal relationships, digital talent can turn that on its head. To promote volunteering, mentoring, parenting support, and group events on a much wider scale, they may be able to use social networks. Very often Non-Government Organizations(NGOs) or organisations face difficulties in getting volunteers to help them in some events for the benefit of mankind. Hence, a communication bridge is needed here to facilitate university students' engagement in community life. The overall aim of this research is to develop a digital platform that bridges university students with various volunteering opportunities. This is to foster the social integration of youth within communities, enhance youth employability, social inclusion, and contribute to the delivery of basic services and actions in partnership with NGOs and organisation's Community Service Responsibility (CSR) projects, to realise their full social, economic and human potential. We conducted semi-structured interview sessions among students from tertiary education. As a result, the paper concludes that the digital platform did connect the students to the NGOs with various volunteering opportunities. The platform offers a unique opportunity for students to make a difference to their local community during their time at university, as well as improve their skills.

***Keywords—volunteer, university students, digital platform, youth, Non-Government Organizations***

## I. INTRODUCTION

In this era of global change and technological advances, youngsters are absolutely crucial for social revolution. They contribute with their limitless energy, creative ideas and dedication to innovation and human development. They provide an insurance for the generations to come and give us the hope to contribute to a cheerful, healthy and rich future but all this may be hindered by widespread joblessness, a lack of access to reliable healthcare, limited opportunities for education and a lack of positive political influence. Social neglect and lack of proper training are other challenges which contribute to the risk of the lack of productive channeling of the creative thinking that youth possess.

Therefore, how can youth participation be sustainably promoted and nurtured? With the underlying value of reciprocity, accountability and dedication, youth volunteerism is one of the most vital delivery channels for social, environmental and economic change, having a positive effect with its potential to change the mindsets, perceptions and behaviours of people (Clary et al., 1998). It creates a sense of obligation for others and also gives a sense of self-worth and belonging to young minds. It also complements formal training to teach the skills needed for the job market, such as leadership, the ability to work with others, critical thinking, preparation, leadership, innovation, communication and negotiation.

Having said so, there are very limited resources in Malaysia for young people especially university students to access the opportunities of offering their volunteering services. There is no proper platform for them to identify volunteering opportunities. On the other hand, very often NGOs or organisations face difficulties in getting volunteers to help them in some events for the benefit of mankind. Hence, a communication bridge is needed here to facilitate university students' engagement in community life.

The overall aim of this research is to develop a digital platform that bridges university students with various volunteering opportunities. This is to foster the social integration of youth within communities, enhance youth employability, social inclusion, and contribute to the delivery of basic services and actions in partnership with NGOs and organisation's CSR projects, to realise their full social, economic and human potential.

## II. LITERATURE REVIEW

Young minds volunteer for various motives compared to older people (Smith et al., 2010). A major mental driver for young people is the opportunity to gain job-related experience, expertise and prowess that can help them further advance in their careers (Eley, 2003). It is also argued that university-based volunteering enables students to apply theoretical learning, transfer and develop skills (Buckingham-Hatfield, 2000) and it enables students to engage in the local community, improving knowledge and awareness of social issues (SVE, 2006). In addition, Low et al., (2007) found a range of benefits for being volunteers, which include empowerment, the development of skills for employability, professional and personal identity and an increase in confidence and self-esteem. Similarly, Brewis et al (2010) identified that student experiences of volunteering have a positive impact on their personal development, skill acquisition and employability. Adding to that, workplace abilities, network communication and experience can also enhance student CVs.

## III. METHODOLOGY

Recruitment events including seminar/talks and advertisements through social media or flyers will be held to create and promote awareness and provide opportunity for students to register on a website. This website will store the students' information including available time, physical capabilities into a database. If NGO or some event planners looking for students to help them for better society purposes, they can register themselves as a recruiter on the website. An email will be delivered to all registered students and a link is provided for them to read all the details (nature of events, service expected from volunteers, date and time, transportation arrangement etc) of the events and allow them to confirm their attendance for the events in the website.

Students are recommended to share their volunteering experience with some pictures of event on the website for future volunteers' reference. These sharing also allow the NGOs to understand the services MMU students can provide. A digital certificate indicating total hours of volunteering as a form of gratitude will be given to all volunteers at the end of this project respecting their hard work and time at the end of the events. Survey forms will be filled to understand how each other's felt and collect any feedback or suggestion to improve next event recruitment. In addition, questionnaires that consist of information such as awareness of volunteerism, motivations and potential challenges will also be distributed to students. SPSS will be used to analyse the data.

## IV. CONCLUSION

The digital platform offers an easier communication bridge among youth and participating organisations/ NGOs in volunteering opportunities. This would critically enhance the cooperation levels among the youngsters and also this would improve the engagement of society to achieve a long-lasting, healthy and content society. Volunteerism can help developing students’ expertise and capabilities to improve social inclusion in youth and active participation to create a long-lasting and sustainable future.

## ACKNOWLEDGEMENT

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# THE EFFECT OF TRANSFORMATIONAL LEADERSHIP AND CHANGE MANAGEMENT ON CIVIL SERVANT'S MOTIVATION (A STUDY AT THE REGIONAL SECRETARIAT OF SUMEDANG REGENCY)

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***Abstract***

The purpose of this study is to analyze the effect of transformational leadership and change management on the motivation of civil servants, a case study at the Regional Secretariat of the Sumedang Regency. The study has come to the conclusion that the implementation of transformational leadership in Sumedang Regency has been running very well, the change management has been very effective, and the motivation of the state civil servants has been very high. Transformational leadership has a significant effect on motivation, change management has a significant effect on motivation, and transformational leadership together with change management has a significant effect on the motivation of state civil servants in Sumedang Regency. Transformational leadership should be prioritized to be implemented in Sumedang Regency to motivate the civil servants. The replication and adaptation of transformational leadership and change management must be implemented in all organizations and institutions within the Sumedang City Government, to produce a collective impact on regional development. This research can be improved by adding other parameters.

***Keywords—****Transformational Leadership, Change Management, Motivation, State Civil Servants*

## I. INTRODUCTION

The government and public service sector is now entering an era of innovation and collaboration, which demands speed and better adaptation to change. Transformational leadership and change management made by regional leaders will have a positive impact on the motivation of the civil servants to work smarter and harder, more productive for better development of the city or regions. Sumedang Regency is one of the regions in West Java Province that has implemented transformational leadership and change management to increase the motivation of the civil servants.

## II. METHODOLOGY

This type of research is quantitative and uses descriptive-causality analysis methods. Sampling was done by saturation sampling technique to 200 civil servants in the Regional Secretariat of the Sumedang Regency. Analysis of the data used is descriptive analysis, classic assumption test, and simple linear regression analysis.

## III. RESEARCH OBJECTIVES/QUESTIONS?

1. How good is the implementation of transformational leadership in Sumedang Regency?
2. How effective is the implementation of change management in Sumedang Regency?
3. How high is the motivation of civil servants in Sumedang Regency?
4. Does transformational leadership affect the motivation of civil servants in the Sumedang Regency?
5. Does change management affect the motivation of civil servants in the Sumedang Regency?
6. Do transformational leadership and change management jointly influence the motivation of civil servants in the Sumedang Regency?

## III. HYPOTHESES

Naile and Salesho (2014) show that transformational leadership style has a positive impact on the work motivation of their subordinates. In the industrial sector Ahmad, et al. (2014) also reveals the same results, that transformational leadership has a positive and significant effect on employee motivation. In addition to the transformational leadership model, change management is also one of the variables that can increase employee motivation. Firdaus and Hendriyono (2018: 104) state that change management has a significant positive effect on employee motivation. According to Applebaum et al (2018: 50), organizational change has an impact on employee motivation and performance.

From both of point of view, the progress of Sumedang Regency in West Java, which now becomes one of the areas with promising growth potential, cannot be separated from the motivation of the civil servants (ASN) as the main motor of government and regional development.

## IV. RESULTS/FINDINGS

Based on motivation level of ASN in the Regional Secretariat of Sumedang Regency it is known that motivation has a percentage value of 88.8%. This shows the existence of civil servants Motivation in the Regional Secretariat of Sumedang Regency and indicates that the motivation is running as expected.

From the level of application of transformational leadership, the results of descriptive analysis show it has a percentage value of 89.5%. This shows that transformational leadership is properly applied to the employees of the Regional Secretariat of Sumedang Regency and indicates that transformational leadership is functioning appropriately.

The results of the descriptive analysis show that its level of effectiveness of employee change management has a percentage value of 85.6%. This shows the existence of processing resources in the Regional Secretariat of Sumedang Regency and indicates that change management is running in accordance with organizational goals.

From the correlation analysis test of the influence of transformational leadership it is known that the relationship between transformational leadership and motivation is 0.527, meaning that there is a strong correlation between transformational leadership and motivation. The same result is obtained from correlation analysis test of the effect of change management on the motivation which shows that the relationship between change management and motivation is 0.667, meaning that there is a strong correlation between change management and motivation.

The test results simultaneously prove that there is a positive and significant relationship between transformational leadership and change management on ASN Motivation. The magnitude of the influence of Transformational Leadership, Change Management, and Motivation is the R2 calculation result of 0.455.

**Multiple Regression Analysis**

**Coefficients**[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 17.080 | 3.069 | | 5.565 | .000 |
| | Transformational Leadership | .131 | .054 | .167 | 2.448 | .015 |
| | Change Management | .353 | .043 | .559 | 8.180 | .000 |

a. Dependent Variable: Motivation

## IV. CONCLUSION

This study resulted in the conclusion that the application of transformational leadership in Sumedang Regency went very good. The results of the descriptive analysis show that transformational leadership has a percentage value of 89.5%. Its change management runs very effective and the results of descriptive analysis show that change management has a percentage value of 85.6%. And the motivation of the civil servants is very high and the results of descriptive analysis shows that motivation has a percentage value of 88.8%.

Transformational leadership should be prioritized to be implemented within the Sumedang Regency to further encourage motivation of the civil servants. The replication and adaptation of transformational leadership and change management must be implemented in all organizations and institutions within the Sumedang Regency, to produce a collective impact on regional progress.

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# UPSKILLING AND RESKILLING OF MALAYSIAN MANUFACTURING SMES B40 AND M40 EMPLOYEES IN INDUSTRY 4.0

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***Abstract***

Industry 4.0 fundamentally reshapes the manufacturing landscape. New jobs with distinctive digital skill requirements will be created, while others will become obsolete. Attention should be given to small and medium enterprises (SMEs) as they formed 98.5% of manufacturing companies in Malaysia. Despite the promising potentials of Industry 4.0, these SMEs have limited understanding of the required digitalisation skills, making B40 and M40 employees vulnerable to this digital disruption. Thus, upskilling and reskilling of these employees are critical for them to remain relevant. This research aims to propose an enhanced transfer of training model for upskilling and reskilling of Malaysian manufacturing SMEs B40 and M40 employees within Industry 4.0. A qualitative approach will be adopted which includes semi-structured one-to-one interviews with manufacturing SMEs Human Resource managers and focus groups with B40 and M40 employees. Upskilling and reskilling of employees will reduce unemployment in Malaysia due to Industry 4.0.

***Keywords— Employees, Industry 4.0, Malaysian manufacturing SMEs, reskilling, upskilling***

## I. INTRODUCTION

The Fourth Industrial Revolution has changed the job landscape and will affect how industrial workers do their work. Business competition is fiercer and more disruptive (World Economic Forum, 2017). There will be new jobs that require different skills, and some tasks will be outdated (Ministry of International Trade and Industry, 2018). The new technologies associated with the Fourth Industrial Revolution are likely to have significant disruptive effects on Malaysia's labour market.

## II. LITERATURE REVIEW

In the Fourth Industrial Revolution, Industry 4.0 focuses on the manufacturing sector. Manufacturing-based industries will be transformed to digitalisation. "Smart Factory" or "Smart Manufacturing" refers to cyber-physical systems that monitor the real-time physical progress of the factory. These systems can make decentralized decisions (Ministry of International Trade and Industry, 2018).

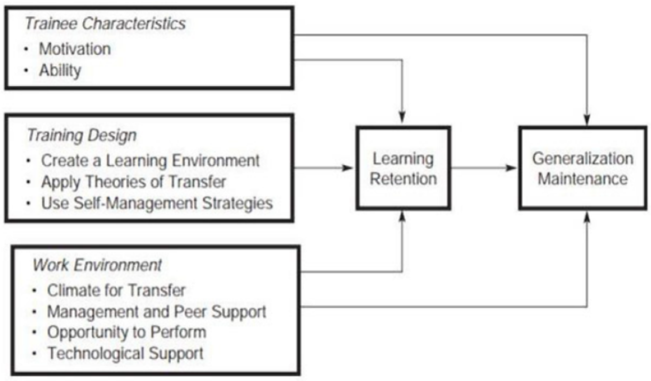
The Malaysian manufacturing sector contributes around 22% to the gross domestic product (GDP) within the last five years. This sector is made up of many small and medium enterprises (SMEs), which constitute 98.5% of the manufacturing firms (Ministry of International Trade and Industry, 2018). 2,119,158 or 16.9% of employees in Malaysia worked in the manufacturing sector and 42.1% of these employees worked in SMEs (Department of Statistics Malaysia, 2017a).

In 20 years' time, between 11 to 54 per cent of current manufacturing jobs in Malaysia would be affected by the "smart factory" transformation that is, either replaced by technology or with their characteristics changed (Khazanah Research Institute, 2017). 80 per cent of these jobs are middle-skilled, while the remaining ones are low skilled. Malaysians will be most affected as ninety per cent of all middle-skilled jobs are held by Malaysians.

Manufacturing employees from B40 and M40 income groups are especially vulnerable to the digital disruption in Industry 4.0. B40 (Bottom 40%) refers to Malaysian households that have a mean monthly income of RM2,848 while M40 (Middle 40%) is for households that have a mean monthly income of RM6,502 respectively (Department of Statistics Malaysia, 2017b). Job losses among B40 and M40 employees could inevitably occur due to automation and technology adoption (Khazanah Research Institute, 2017). Hence, upskilling and reskilling of B40 and M40 employees in the Malaysian SMEs manufacturing firms are critical for them to remain relevant in the digital era.

## III. CONCEPTUAL FRAMEWORK

Upskilling is the process of improving the skills and expanding the capabilities of employees. Reskilling, on the other hand, involves training a person, particularly an unemployed person, in new skills. To ensure that employees do their job well, human resource (HR) managers need to implement the transfer of training process. A model of the transfer of training process (Baldwin & Ford, 1988; Noe, 2010) is presented in the figure below.




However, this model is inadequate to explain the upskilling and reskilling of Malaysian manufacturing SMEs B40 and M40 employees that face Industry 4.0 digital disruption. This model does not include trainees' awareness on the importance of upskilling and reskilling, potential barriers to upskill and reskill, and ways to overcome them. Therefore, this study aims to develop an enhanced model of the transfer of training process for upskilling and reskilling of Malaysian manufacturing SMEs B40 and M40 employees that face digital disruption in Industry 4.0.

This research will employ a qualitative research method. A Qualitative data collection technique will be used in this study. Semi-structured questions with one to one interviews and focus group discussions will be conducted on relevant Malaysian manufacturing SMEs employees. A purposive sampling method will be used to identify the participants. The prospect interviewees for the one to one interview will be Malaysian manufacturing SMEs human resource managers and the focus groups participants will consist of five B40 employees per group and five M40 employees per group from Malaysian manufacturing SMEs.

## IV. CONCLUSION

This study will serve as a guide for Malaysian manufacturing SMEs to prepare them for digitalisation in Industry 4.0. Unemployment in Malaysia that is due to the advancement of technology in Industry 4.0 will be reduced by upskilling and reskilling of Malaysian manufacturing SMEs B40 and M40 employees.

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# DIGITAL TECHNOLOGY FOR BUSINESS

# A REVIEW OF OPPORTUNITY AND OBSTACLE IN DEVELOPING BLOCKCHAIN TECHNOLOGIES FOR MSMEs IN INDONESIA

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***Abstract***

This study aims to find out opportunities and obstacle in developing blockchain technologies for gaining competitive advantages and sustainability of Micro, Small and Medium Enterprises (MSMEs) in Indonesia. The method used is exploratory research by studying multiple case studies to find out the factors that become opportunity and obstacle to the implementation of Blockchain technologies for the sustainability of MSMEs in Indonesia. There are 5 conceptual areas of opportunity and 5 conceptual areas of obstacle in developing and implementing blockchain for MSMEs in Indonesia. These findings might give the opportunity and obstacle description that can be used for MSMEs in developing and implementing Blockchain technology as a tool for achieving competitive advantages and sustainability.

***Keywords— blockchain, micro small-medium enterprise, competitive advantage, opportunity, obstacle***

## I. INTRODUCTION

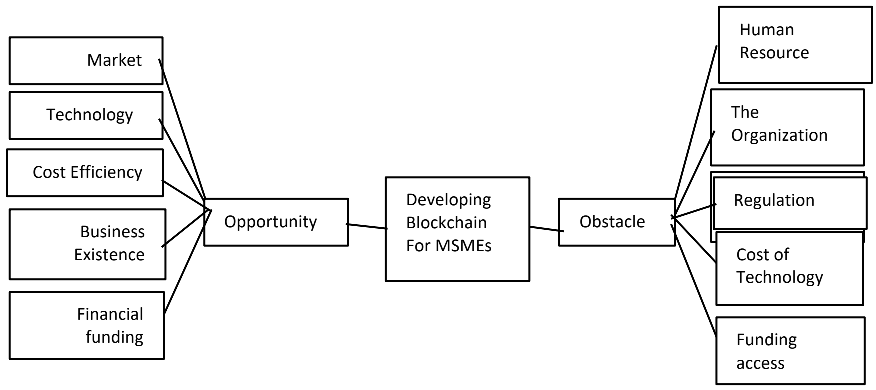
Blockchain is an emerging technology that attracting much attention from the individual to global corporations from many industries. Blockchain technology was used first to support cryptocurrencies (Nakamoto and Bitcoin, 2008). As a new technology Blockchain gained much attention beyond the purpose of financial transactions and then it continues to be developed in other areas (Tapscott and Tapscott, 2016), such as in a new start-up business as well as in MSMEs. In many countries MSMEs are the backbone of their economy, MSMEs are the lifeline of the global economy and the key drivers of global innovation and business industry growth (United Nations, 2020). In Indonesia for example, more than 90% of the companies are MSMEs and together they produce 60% of the value-added of the Indonesian Economy, but at the same time, MSMEs confronted with a few important challenges (Ndumanya, 2019), such as problem in the financing, inefficient procedures, low scale operations and lack of important information to conduct business efficiently (United Nations, 2020). Adinolfi (2017) predicted that in the year 2022 Blockchain will transform MSMEs in the emerging market through a new financing business model. The use of blockchain could be utilized by MSMEs for financing growth. Referring to these points of views, this study tends to find out the benefits and obstacles in using Blockchain technology in Indonesia, especially by MSMEs.

## II. LITERATURE REVIEW

Since 2004, the Indonesian government has been persistently promoting and strengthen MSMEs as a driving force for the growth of lower-income communities. MSMEs have proved that they play an important and strategic role in Indonesia's economic growth (Bank Indonesia, 2015). On other hand, MSMEs in Indonesia still have a marketing challenge, most MSMEs have not been able to fully adopt E-Commerce due to a lack of technological preparedness (Soviyanti et al., 2019). MSMEs should increase their market share, the number of workers, sales, and profit to access credit financing (Ratnawati, 2020). MSMEs has a low level of financial inclusion (Adiandari and Winata, 2018). MSMEs have difficulty in obtaining loans from formal financial institutions (Marwa, 2014; Wardhono et al., 2019). Problems faced by MSMES come from external obstacle factors (situation and condition, location, business permit, competition, and business information) and internal obstacle factors (management of the business, the less-skilled workers, product/ production and supplier control, marketing, and capital) Wijaya et al., (2017). Globalization is one of the challenges for MSMEs that impose new trading conditions to keep up with, to compete with global rivals. MSMEs should develop new business strategies with efficiency, flexibility with higher standard quality of product and process as reported by OECD in 2000 (as cited in Ilbiz and Durst, 2019). Those challenges might be able to be overcome by implementing technology in MSMEs business, there a link between the level of digital technology used and the increase of MSMEs revenue (deloitte.com, 2019). Blockchain will be one of the technologies that will influence business change in the future, in terms of business operational security and efficiency (Panetta, 2017). The development of Blockchain technology is not limited only to large businesses, but also to MSMEs. The implementation of blockchain can provide several benefits for small and medium-sized enterprises, especially in the operational section (Lagarde, 2017). In Indonesia, there are several platforms using blockchain that implemented for MSMEs benefits, such as Tokoin.io, KENDI, Vexanium, Hara token.

## III. CONCEPTUAL FRAMEWORK

Blockchain will allow MSMEs to compete in ways never seen before. In the context of opportunity and obstacle in developing and implementing blockchain of MSMEs in Indonesia, this paper presents the conceptual challenge and obstacle pointed out from several previous studies and cases in the field of blockchain. The method using exploratory research from multiple case studies, using taxonomy conceptual frameworks by taking a description which categorizes the topics that developed empirically into classes, the methodological approach starts with doing analysis across research about blockchain opportunity and obstacle, then build the framework setting a hierarchical taxonomy structure of classification (class and attribute) and the last is layout categorization.




Source: Kleindl, 2000; Redfern and Snedker, 2002; Brouthers and Nakos,2004; Wickramansinghe and Sharma,2005;Lohrke et al., 2006; Zain and Ng, 2006; Davies and Crane, 2010; Sultan, 2011; StPierre and Audet,2011; Zairani and Zaimah, 2013; Adinolfi, 2017; Gilli et al,2018; Wang et al.,2019; Hong, 2019; A.I.T. ,2019;Tedjakusuma, and Yahya, 2020; Liu and Jiang, 2020; Sonmez and Ming, 2020; Linawati et al., 2020; Ndumanya, 2020; Hervé et al, 2020

Fig 1. Conceptual Framework of Opportunity and obstacle in developing blockchain for MSMEs

The literature suggests five conceptual areas of opportunity and obstacles, the first area of opportunity is market, opportunity in the market area are the MSMEs possibility for internationalization, bigger network size, greater interactivity with user, scalability, and great possibility of transaction. The second area of opportunity is technology, in this area, the opportunity given by transparency, decentralization, traceability, verification, speed, safety and trust technology to use. The third area is cost efficiency, and the opportunity given by the reduction of cost of business process, become faster and cheaper, paperless, and reducing the risk and time. The fourth area is business existence which gives the opportunity in digital representation and verification also as the digital identity of the business as the proof of credibility. The fifth is the financial funding area which gives the opportunity of funding solution and channel. The five conceptual areas of obstacle in developing blockchain for MSMEs in Indonesia are the first human resources area, the obstacle is the human factors in the scalability, limited and lacks resource and technology illiteracy. The second area is the organization itself, the obstacles are organization internet capability, lack of international experience and lack of development of an organization. The third area is regulation, the obstacles are that some company will not share the information in the network, cross border jurisdiction issues in the international trade and there is no regulatory framework for blockchain. The fourth area is the cost of technology and the obstacles in this area are the high cost of development, maintenance and deployment that reduce the enthusiasm of MSMEs to use the blockchain. The last area is funding access, the obstacles are MSMEs facing the problem of how to access and find financing use blockchain, limited access to finance, and facing the need for significant investment and expertise in this area.

## IV. CONCLUSION

The literature indicates that there were five conceptual areas of opportunity and five conceptual areas of obstacle that might exist during developing and implementing blockchain technology for MSMEs. Since the opportunities are very important for MSMEs especially in hyper-competition, it is important to find out the supporting factors and steps to develop and implementing blockchain for MSMEs. On the other hands, to overcome the obstacles it is very important also to find out the factors that can minimize or eliminate them, hence the objective of developing and implementing blockchain can be successfully achieved. In the future study, it is planning to explore the supporting factors and steps in developing blockchain for MSMEs as well as finding the factors that can minimize the obstacles.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# CONTINUOUS USAGE INTENTION OF CRYPTOCURRENCY MOBILE WALLET

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***Abstract***

The cryptocurrency field is steadily rising in popularity with more than RM 800 million worth of transactions being processed in just one platform. Bank Negara Malaysia (BNM) has made migration to e-payment as one of its main priorities and continuous efforts to displace cash and cheques in circulation. As a result, there is an increasing interest in cryptocurrency research from both practitioners and academic researchers. An in-depth literature review reveals that there is a dearth of study focusing on the critical factors that are influenced on the adoption of cryptocurrency, more specifically on the continuous intention. Therefore, this study aims to determine the factors that influence the intention to continue using cryptocurrency mobile wallets in the Malaysian context. The factors tested are satisfied, performance expectancy, effort expectancy, perceived security, and social influence. This study applies a quantitative research method and a survey instrument will be designed based on existing literature. The purposive sampling method will be used to select the sample population and will collect 100 responses from current cryptocurrency users. The findings of this study will contribute to the industry of cryptocurrency mobile wallet providers, especially those who are or will be operating in Malaysia.

***Keywords— Cryptocurrency, mobile wallet, continuance intention***

## I. INTRODUCTION

The cryptocurrency field is steadily rising in popularity and even more with exchange platforms releasing app-based, cryptocurrency mobile wallets. Since the inception of cryptocurrency Bitcoin, many other cryptocurrencies started to sprout, employing blockchain technology. Cryptocurrencies let users trade directly to the intended destination, bypassing intermediaries, such as banks, all together. It is a decentralized system that uses a peer-to-peer network (Dattani & Sheth, 2019) and proof-of-work to verify each transaction. The blockchain system acts like a ledger, or accounting book, a public one, that chains one transaction to the next, which makes it easier to track transactions. Crypto makes the cross-border transaction easier and more comfortable with the existence of the ledger, however, it lacks specific regulations that can control it like fiat currencies, and it is no wonder that some people are apprehensive about it, (Corbet et al., 2020) recording 17 big hacking attacks to cryptocurrency between 2017-2018. Bank Negara Malaysia (BNM) has made migration to e-payment as one of its main priorities, as reported in 2018 that its continuous efforts to displace cash and cheques in circulation. Since BNM is working with The Securities Commission Malaysia (SC) to regulate the digital asset exchange (DAX) scene and has registered 3 DAX platforms in Malaysia, it is interesting to look at the factors of why these DAX users are continuing to use a mobile wallet to access their cryptocurrency when there are other wallets available for them (e.g. desktop wallets, hardware wallets, etc.)

## II. LITERATURE REVIEW

Cryptocurrency has been promoted in several studies to be adopted in different kinds of fields. As it records all transactions and is particularly hard to be tampered with, transparency and traceability (Queiroz & Fosso Wamba, 2019) in supply chain may be achieved. A study of the adoption of crypto in retail and SMEs reveal that businesses accept it due to customer demand (Jonker, 2019) and wish to be in the early adopter category (Mutiso & Maguru, 2020). A high technological awareness was also found to be important in the adoption of cryptocurrency at the individual level, which Generation Z excels at and the older generations need more help in, however, this misconception was dispelled with a Luno Malaysia report in 2020 that shows the majority of activities on the DAX platform came from seasoned professionals aged between 30-49 years old. Despite the rising popularity of cryptocurrency during the Covid-19 pandemic, there are currently limited studies that look into the continuance intention of these cryptocurrency mobile wallet users.

## III. CONCEPTUAL FRAMEWORK

Research questions and objectives shall be used to define the conceptual framework. The Post-Adoption Model of IS Continuation (PAM) will be the anchor theory for this research. From the detailed literature review, the following variables are identified as potential factors affecting the intention for continuous usage of cryptocurrency mobile wallets. This paper aims to empirically test the relationship of five variables; satisfaction

(Tran et al., 2019), performance expectancy (Cheng et al., 2020), effort expectancy (Gao et al., 2018), perceived security (Zhang et al., 2019), and social influence (Gao et al., 2018) with continuous usage intention.

This study will apply a quantitative research method where a survey instrument will be designed from existing studies. The questionnaire will be pre-tested with experts' reviews. The data will be collected from cryptocurrency users who are individuals and expected to collect 100 usable responses. The non-probability sampling method will be used to select the sample population. The study focuses on those currently residing in Klang Valley, hence the questionnaires are administrated online to conveniently reach respondents. Collected data will be analysed by applying statistical techniques for reliability, validity, correlations coefficients, descriptive analysis and multivariate regression using SPSS software.

## IV. CONCLUSION

This study examines the influence of 5 factors on the intention to continue using cryptocurrency mobile wallets. Cryptocurrency mobile wallet was made for users to get access to their crypto faster and they expect it to work properly. With more and more cryptocurrency mobile wallets being released to the market, clear user interface can determine the users' degree of satisfaction and consideration to continue using it. The crypto community in Malaysia is also flourishing with the existence of local blockchain communities. It is possible that existing mobile wallet users might have influenced newer players to continue using the mobile wallets as an alternative to the more costly hardware wallets.

## ACKNOWLEDGEMENT

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# COVID19 PANDEMIC FUELS POSITIVE SHIFT IN ONLINE CONSUMER BEHAVIOUR: FORGING SUSTAINABILITY TO ECOMMERCE BUSINESS

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***Abstract***

Abstract - Online purchasing involves with high levels of uncertainty related to consumer's knowledge, the Internet shopping skill and utilitarian motivation as key factors for getting popularity during pandemic Covid19 movement control order (MCO). The purpose of this research was to unearth new factors and knowledge that have contributed to an upsurge in consumer intentions to purchase from online platforms during MCO. Scholars highlighted that utilitarian motivation is crucial for consumer behavior during Covid19 MCO. In addition to cognitive factors, environment factors, and behavioral factors knowledge, MCO factors are found to significantly contribute to this phenomenon.

***Keywords— E-commerce, COVID-19, MCO, online purchase intention, Social Learning Theory (SLT)***

## I. INTRODUCTION

In the period of pre-MCO (Movement Order Control) due to the Covid19 pandemic, statistics show that the volume of online business denoted about 15%-18% of the all-out selling market in Malaysia (The Edge Market, 2020). During MCO, Covid19 has fuelled the E-commerce (EC) business to an outstanding 82%-85% online sales (The Edge Market, 2020). The usage of mobile technology for online shopping has risen (Taruna, 2017). Global statistics depict the retail EC grew from 12.81 billion global visits in January 2020 to 14.34 billion visits in March 2020 and consumers increased their online purchases because their family were practicing social distancing and wanted to minimize their time outside the home (Statista, 2020). In Malaysia, during MCO, statistics showed that beginning from the first trimester of 2020, Shopee controlled the Malaysian online EC market as the topmost successful EC in this country, followed by Lazada and Lelong (Statista, 2020). With approximately 27 million online users, Shopee is one of the top e-commerce sites which has gained in popularity not only in Malaysia (Roy et al., 2020, Perea, et al, 2004, Rao, et al, 2020). In this study, the cause for the changes in consumers online purchase behavior during MCO was investigated to understand the variables of Social Learning Theory as well as any unique variable that has caused this dramatic growth in EC business.

## II. METHODOLOGY

This is conducted based on positivistic research philosophy. Social Learning Theory is the kernel theory in this study. The hypotheses were developed to test the model using survey data obtained from individuals who were using online EC sites to purchase their products and services in Klang Valley. SmartPLS software was applied for data analysis. The population includes online shopping users. Non-probability sampling was applied due to the difficulty in obtaining a sample frame. A total of 139 usable surveys were collected for further analysis.

## III. RESULTS/FINDINGS

Cognitive factor includes the Knowledge, Expectations, and Attitude. The findings were supporting the notion that Knowledge and Expectations of an online EC business influence the intention to shop from e-commerce websites while Attitude does not. This result reflects that expectations are a very important factor for Malaysians while shopping from online websites during MCO (movement control order). Before buying anything during MCO, the buyers have sufficient knowledge about online shopping so that they can purchase easily. However, according to these findings, attitude does not play an important role for Malaysians. Environmental factor includes the Social Norm, Access in Community and Situational Influence. The results indicated that situational influence strongly influences a consumer's purchase intention from online during MCO. However, Social Norm and Access in community do not affect a consumer's purchase intention during MCO. MCO factors include Utilitarian motivation and Website design. The results revealed that website design influences online purchase behavior but not utilitarian motivation. Hypotheses results are shown in Table 1.

Table 1: Hypotheses Result

| Hypothesis | Result |
|---|---|
| H2b: Access in Community | Not Supported |
| H1c: Attitude | Not Supported |
| H1b: Expectations | Supported |
| H3a : Internet Skill | Supported |
| H1a : Knowledge | Supported |
| H3b : Processing Practice | Not Supported |
| H3c : Self-Efficacy | Supported |
| H2c: Situational Influence - Online Purchase Behaviour | Supported |
| H2a: Social Norm - Online Purchase Behaviour | Not Supported |
| H4a : Utilitarian Motivation | Not Supported |
| H4b : Website Design | Supported |

## IV. CONCLUSION

In a nutshell, the outcome of this research suggests that all the four constructs, i.e. cognitive factors, environmental factors, behavioural factors and MCO factors play a significant role in affecting the purchase behavior for Malaysian consumers. However, these four variables were measured through key variables like knowledge, expectation, attitudes, social norms, access in community, situational influence, skills, practice, self-efficacy, utilitarian motivation and website design amongst which access in the community, attitude, processing practice, social norm, and utilitarian motivation have shown very little influence on purchase intention while others have shown positive and significant effect on purchase intention during MCO. Further, this research confirms that knowledge, expectation, situational influence, skill, self-efficacy, and website design positively influence consumer's purchase intention from ecommerce websites during MCO. The implication of this study is EC business surge during MCO are due to these factors. EC business practitioners should consider these factors to grab the opportunities during similar situation with MCO for their future business sustainability.

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# DETERMINANTS OF CUSTOMERS' INTENTION ON USING SELF-SERVICE TECHNOLOGIES (SST) AMONG GENERATION-Z

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***Abstract***

The main objective of this study is to examine the determinants that affect customer intention on using the Self-Service Technologies (SST) among Generation Z. Specifically, it examines the relationship between the independent variables of perceived ease of use, perceived usefulness, need for interaction and technology anxiety and the dependent variable, customer intention of using SST. A questionnaire survey adopted in this study secured the required information from 152 target respondents whose analysed responses thus explain the 65.5% variances in customer intention of using SST. The research findings established, using SPSS version 24 application, suggest that perceived ease of use and perceived usefulness have positive significant relationships towards customer intention of using SST, but no significant relationship found on the need of interaction and technology anxiety towards customer intention of using SST. Therefore, in order to encourage and attract potential users and future users to utilize the service of SST, the system and function of SST need to be upgraded consistently to ensure it brings benefits and usefulness to the users. Besides that, the company can also educate the users on how to operate the SST to enhance the level of ease of use and to increase the awareness of the usefulness of SST among the users. The limitation and recommendations for future study are discussed at the end of the paper.

***Keywords—Self-Service Technologies (SST), technology anxiety, perceived usefulness, perceived ease of use, need for interaction***

## I. INTRODUCTION

The implementation of Self-Service Technologies (SST) has been commonly found across the industries in Malaysia as the world is moving towards the technology era. According to Meuter, Ostrom, Roundtree & Bitner (2000), self-service technologies can be defined as "the technological interfaces which allow the customer to conduct the service by themselves without the direct interaction with the services employee." There are many kinds of SST applications available in the industries, ranging from simple, interactive, voice-based services and point-of-sale interactive devices to internet-based services (Curran & Meuter, 2005). Most of the industries such as restaurants, banks, airports and hotels had started to implement SST in their daily business operation to improve their efficiency and productivity, at the same, helps the companies to reduce the operation cost. Since SST will be slowly implemented across the industries in the near future, it is critical to examine the determinants of customers' intention on using SST, especially among Generation Z, as they will be the potential main users of SST, in order to increase the utilization of SST to its optimal level, otherwise, it will be wastage for the companies to invest huge amount of money on SST in the business. As such, the following objective is formed:

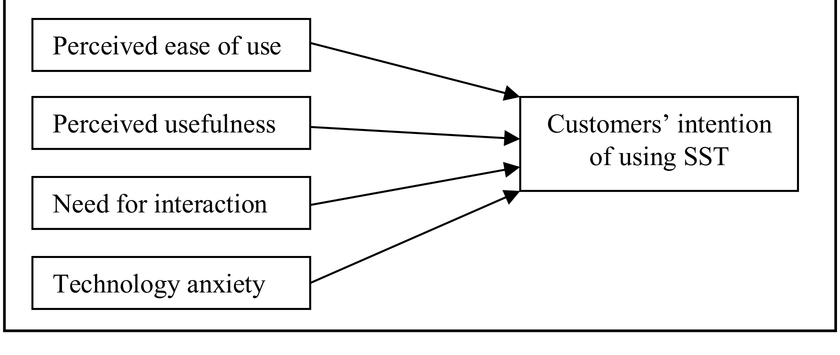
Research Objective:

To examine the factors that affect customers' intention of using Self-Service Technologies (SST) among Malaysian Generation Z.

## II. METHODOLOGY

The research framework developed for this study is depicted in Figure 1

**Figure 1: Research Framework Developed for the Study**



The following hypotheses are formed:

H1: There is a positive significant relationship between perceived ease of use and Generation Z's intention to use SST.

H2: There is a positive significant relationship between perceived usefulness and Generation Z's intention to use SST.

H3: There is a negative significant relationship between the need for interaction and Generation Z's intention to use SST.

H4: There is a negative significant relationship between technology anxiety and Generation Z's intention to use SST.

This study adopted a quantitative approach through a questionnaire survey by using convenience sampling to reach the target respondents. A total of 152 completed responses were returned and data were entered into SPSS version 24 for data analysis.

## III. RESULTS/FINDINGS

The proposed research framework is significant as it able to explain 65.5% ($R^2 = 0.655$) of the variances in customers' intention of using SST among Malaysian Generation Z. Based on the model summary in Table 1, it was found that perceived ease of use (Beta = 0.437) and perceived usefulness (Beta = 0.379) have a significant positive relationship towards customers' intention of using SST (p-value < 0.05). However, there is no significant relationship found on the need of interaction (Beta = 0.048) and technology anxiety (Beta = 0.030) towards customers' intention of using SST (p–value > 0.05). As such, Hypothesis 1 and Hypothesis 2 are supported while Hypothesis 3 and Hypothesis 4 are not supported.

**Table 1: Multiple Linear Regression Analysis**

| **Model Summary** | | | |
|---|---|---|---|
| $R^2$ | 0.655 | | |
| Adjusted $R^2$ | 0.646 | | |
| F- Statistic | 69.763 (Sig = 0.000) | | |
| **Model** | **Beta** | **t** | **Sig** |
| Perceived ease of use | 0.437 | 4.746 | 0.000 |
| Perceived usefulness | 0.379 | 4.094 | 0.000 |
| Need for interaction | 0.048 | 0.730 | 0.467 |
| Technology anxiety | 0.030 | 0.502 | 0.616 |

## IV. CONCLUSION

The overall finding provides useful insight to the business which are in the transition of moving towards implementing SST in their daily operations. It is important for the companies to consistently upgrading the system in order to bring more conveniences, benefits and usefulness to the customers. Meanwhile, the company can also provide guidelines to the customers on how to operate the SST in order to enhance the level of ease of use and to increase the awareness of the usefulness of SST among the users.

Like other studies, this study is not without its limitation. Firstly, this study was only able to gather a total of 152 responses which cannot be generalised to the entire population among Generation Z in Malaysia. Therefore, bigger sample size is needed for future study. Secondly, this study only focuses on 4 independent variables, which explained 65.5% variances in customers' intention of using SST, the remaining 34.5% remained unexplained. Future researchers may include other variables in the study. In addition, a comparison study can be conducted across different generations such as Generation X, Y and Z, as the study focuses on different samples that might reach different findings and conclusions.

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# DIGITAL ENABLERS (KYP-PD) FOR P2P LENDING PLATFORMS

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***Abstract***

Peer-to-peer (P2P) lending platforms are becoming increasingly popular due to the deregulation of laws that used to be a great obstacle for this sharing economy principle to thrive. A decentralized digital platform that allows anyone to borrow or lend funds and interact to sell or buy goods without an intermediary third party is the core value proposition of this shared economy. Although monitored closely by the Securities Commission (SC), a statutory body responsible for regulating P2P in Malaysia the platform is still at its infancy stage. With the SC's regulatory framework creating somewhat a trusted third-party network primarily to aid Small and Medium Enterprises (SME), investors are still perturbed by the risk of losing their capital due to defaults. This paper highlights how Probability of Default (PD %) risk and exposure analysis can be executed by the P2P platforms to enable investors to have a better understanding of their platform i.e. Know Your Platform (KYP) such that the investors can make objective decisions on selecting which platforms to invest in and why.

***Keywords— P2P; Thrusted Third Party; Know Your Platform (KYP); Probability of Default (PD)***

## I. INTRODUCTION

Centralized financial platforms are generally regarded as trustable by investors due to the strict regulations that govern them. The major challenge today really is how much fair representation of a company's financial transactions that we have open access to. One such indicator is the Edelman Trust Barometer report. Table 1 provides a summary of the performance of eight industries. Financial services scored the worst among eight industries reported between 2011 till 2017. In 2011 it scored only 37% and 54% only slightly better than pharmaceuticals in 2017. In general, the scores for the trust barometer every year showed very little progress. Overall, the financial services segment still does remain the lowest. In this paper we introduce 1) risk assessment (RA); 2) exposure analysis (EA); and 3) Expected Loss (EL) analysis based on the definition of Committee of Sponsoring Organization's (COSO) and ISO 31000 (Muthaiyah, 2019) that will mediate poor uptake by mitigating trust barriers that would otherwise cause P2P platforms to fail.

Table 1 Edelman Trust Barometer Report on Trusted Industries (2011 to 2017)

| Industry/Year | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|---|---|
| **Technology** | 68% | 79% | 73% | 79% | 78% | 74% | 75% |
| **Food & Beverage** | 65% | 64% | 62% | 66% | 67% | 64% | 66% |
| **Consumer Packaged Goods** | 47% | 62% | 60% | 65% | 66% | 61% | 63% |
| **Telecommunications** | 38% | 60% | 60% | 60% | 63% | 60% | 63% |
| **Automotive** | 55% | 66% | 66% | 70% | 71% | 60% | 65% |
| **Energy** | 45% | 53% | 57% | 59% | 60% | 58% | 62% |
| **Pharmaceutical** | 56% | 56% | 57% | 59% | 61% | 53% | 53% |
| **Financial Services** | 37% | 45% | 46% | 48% | 54% | 51% | 54% |

Source: https://www.edelman.com/research/edelman-trust-barometer-archive

## II. METHODOLOGY

In this study, the RA, EA and EL analytical data model below was used to rank order to determine Risk Band (RB) based on ISO31000 standards. Where probability default analysis is the main indicator for RA which was available as the probability of default was available. Steps include data collection, data cleaning, data processing and final results. In figure 1 below, there are nine KYPs (t1…t9), which are tagged to company platforms available on the P2P platform. Analysis from RA and EA calculations show that Risk band 6 (RB = 6) includes t1, t2, and t4, which are high risk platforms. Risk band 1 (RB = 1) includes t7, t8 and t9, which are relatively low risk platforms. Overall, we can compare the risk bands to show relative risks between X Sdn Bhd up to FA Sdn Bhd, i.e. KYP (t1 to t9). For example, if an investor performs transaction t9, he/she will have the same level of risk as t8, which are compatible in terms of risk band.

## III. RESULTS/FINDINGS

Table 2: Automated RB Output

| KYP | Company Name (*fictitious companies) | RA (Probability of default) % | EA (Exposure Analysis) | EL (Expected Loss) | RB (Risk Band) |
|---|---|---|---|---|---|
| t1 | X Sdn Bhd | 80% | USD $ 6,000 | USD$ 4800 | High risk |
| t2 | Y Sdn Bhd | 75% | USD $ 5,000 | USD$ 3750 | High risk |
| t3 | Z Sdn Bhd | 64% | USD $ 1,000 | USD$ 2560 | Medium risk |
| t4 | AB Sdn Bhd | 72% | USD $ 8,000 | USD$ 5760 | High risk |
| t5 | BC Sdn Bhd | 58% | USD $ 7,000 | USD$ 4060 | Medium risk |
| t6 | DC Sdn Bhd | 55% | USD $ 6,000 | USD$ 3300 | Medium risk |
| t7 | EC Sdn Bhd | 45% | USD $ 1,000 | USD$ 450 | Low risk |
| t8 | EE Sdn Bhd | 39% | USD $ 5,000 | USD$ 2145 | Low risk |
| t9 | FA Sdn Bhd | 35% | USD $ 4,000 | USD$ 2000 | Low risk |

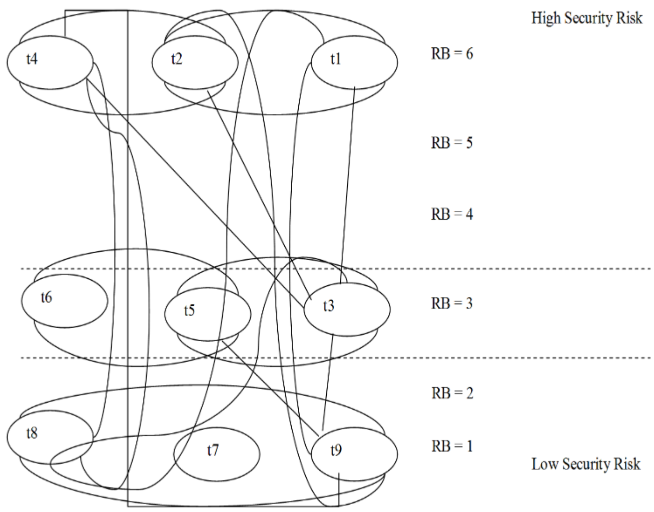


Figure 1 Risk Band (RB) for KYP (Muthaiyah, 2020)

## IV. CONCLUSION

P2P systems must be self-auditing to ensure that the financial ecosystem will entail trust which will be the key drive of its success and will easily overcome doubts and fear that may arise among potential investors. Technological advancements will be able to create value by quickly aggregating data which can be deployed using agent systems. How quickly we evaluate potential risks, understand exposure and mitigate the situation becomes creates the challenges that lie ahead with P2P investment platforms. In this paper we apply risk mitigation and exposure analysis by applying ISO3100 standards to determine RB. In our future work we would like to investigate how control procedures can be embedded within the Blockchain technology to make P2P platform more robust.

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# DIGITAL LEADERSHIP IMPACT AMONGST MALAYSIAN SMALL AND MEDIUM ENTERPRISES EMPLOYEES' TOWARDS DIGITAL BUSINESS TRANSFORMATION

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***Abstract***

Digital disruptions were caused by the evolution of technology affecting a certain part of the business while disruptive technology is completely revolutionary that changes how work is performed. There are no exceptions to Malaysian SMEs and their employees. Malaysian SMEs were caught off guard during the pandemic recently to quickly embrace and adapt to Digital Business Transformation (DBT). This was necessary for sustainability and survival. This study aims to uncover the relationship between Digital Leadership and Organizational Change which is posited to indirectly contribute towards Digital Business Transformation. The study will be conducted among employees in Malaysian SMEs using surveys. There has been a concern to use online surveys as a means as the current pandemic situation does not warrant face to face administering the survey instruments. The data collected will be analysed using SPSS for descriptive reports and SmartPLS to gauge the relationship among the variables posited in the theoretical framework. The study will utilize a combination of three theories, namely Adaptive Structuration Theory (AST), Leavitt's Diamond Model (LDM) and Strategic Alignment Theory (SAT) was used in proposing the research model.

***Keywords—digital business transformation, leadership, organizational change, Malaysian SMEs***

## I. INTRODUCTION

Malaysia has transformed and moved towards digitalization over the past decade. In Malaysia, households, businesses and the public service sector alike have embraced digitalization. The growth of the digital economy has captured the attention of many corporate organizations as well as Small and Medium Enterprises (SMEs) in recent decades in Malaysia. According to Deloitte (2016), the digital economy consists of using smart devices, e-commerce websites, mobile apps, payment via mobile and so on to do business. The Malaysian government launched a long-term initiative in February 1991 to transform the country from an industrial nation to a knowledge-driven economy by the year 2020 called "Vision 2020" with the use of Information Technology (IT), and talents of the highly skilled and knowledgeable workforce (Vicziany & Puteh, 2004). This was also made to address the future economic growth of the Small and Medium Enterprises (SME) in Malaysia. Due to the IR4.0 and industry 4.0, on a global scale, corporations are facing massive challenges and opportunities of digital disruption. Growing challenges in the business environment have required businesses to embrace changes and undergo Digital Business Transformation (DBT) to sustain and remain competitive in a challenging digital world. Failure to track and closely monitor technological changes could lead to the demise of even highly successful enterprises. A survey by the Global Centre for Digital Business Transformation suggests that 45% (approximately 9,000 corporate executives surveyed) felt that their leaders were not concerned with digital disruption. The same study shows that 32% of these corporate leaders preferred to "wait and see" and subsequently assume a follower approach in response to digital disruption (Loucks, Macaulay, Noronha, and Wade, 2018). In pursuit of growth and sustainability, SME leaders strive to lead and optimally aligned their business strategy with digital technology, organizational change, and its culture to fully influence the potential offered by these technologies.

In addition to all that, the Covid-19 (Coronavirus Disease 2019) outbreak is a human tragedy affecting millions of people around the world on a global scale (Omar, A. R. C., et. al., 2020). The global economy, businesses, small and medium enterprises (SMEs), large corporations, aviation and tourism industries to name a few have been negatively impacted. As a result, economists around the world predict and are seeing a decelerating economic activity from March 2020 onwards without an exact date when this will end (Segal & Gerstel, 2020). COVID-19 pandemic has affected major parts of the world on a global scale (Abdullah, J. M., et. al., 2020), with social distancing and fear of contracting the disease to shrink demands in the market for products and consumptions. Movement control, lockdown, quarantine and social distancing are amongst the governments' effort to safeguard public health and economic responses (Craven et al., 2020) but, it has impacted transactions locally and globally. The SMEs that rely on physical space and traditional business model application has been suffering losses. However, those who embraced the online business model with a digital presence like E-commerce, using technology either via desktop and/or mobile phones are surviving, thriving with a sustainable income. The pandemic has caused an unprecedented crisis in the area of social, health and economy that has hit many industries and SMEs hard (Bartsch, S., Weber, E., Büttgen, M., & Huber, A., 2020). The study will utilize a combination of three theories, namely Adaptive Structuration Theory (AST), Leavitt's Diamond Model (LDM) and Strategic Alignment Theory (SAT) in proposing the research model. Therefore, this research aims to investigate DBT among SMEs and intends to reveal the relationship between Digital Leadership and Organizational Change which is posited to indirectly contribute towards Digital Business Transformation.

## II. METHODOLOGY

This study will be conducted among employees of Malaysian SMEs to gauge their attitude and behaviour towards Digital Business Transformation in their respective organizations. The study will use purposive sampling based on several criteria that posit towards the embracement of DBT. Surveys will be used to gauge the responses from the sample target respondents. Survey instruments will be done following 5 & 7 points Likert scales based on the theoretical framework derived. Further to that, data responses will be cleaned and coded as well as analysed using SPSS and SmartPLS to determine the findings. SPSS will be used to report demographic and descriptive analyses of the sample and SmartPLS will be used to perform multiple regressions and partial least square analyses to gauge the relationships entailed in the theoretical framework.

## III. RESULTS/FINDINGS

This study is posited to create insights on the relationship between Digital Leadership and Organizational Change towards Digital Business Transformation in Malaysian SMEs. The results will also shed light on the forceful nature of transformation that was necessary for the sustainability and survival of SMEs during the recent movement control order as well as the pandemic. The results could be a source of information for new policies for Malaysian SMEs by SMECorp, MIDA and MATRADE.

## IV. CONCLUSION

This study will reveal necessary issues and insights on embracing the sudden digital transformation for SMEs to stay abreast in the new normal. SMEs will also be aware of the prevalent increase in popularity and usage of digital applications and tools towards a successful business in the new normal.

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# FACTORS INFLUENCING ONLINE BUYING INTENTION AMONG GENERATION X DURING COVID-19 LOCKDOWN IN MALAYSIA

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***Abstract***

Today, Internet usage is widely used with the advancement of modern technologies. This has led to one of the main online activities, which is online shopping. Thus, the purpose of this research is to investigate the factors that affecting online buying intention among generation X during Covid-19 lockdown in Malaysia. Both primary and secondary data were used and the questionnaire distributed via Google Form has been selected as data collection method. This research uses convenience sampling and the sample of 200 respondents who are considered as generation X were taken as the targeted respondents. The five factors that influence the online buying intention such as perceived benefits, perceived risk, trust, perceived usefulness and perceived ease of use are considered and analysed through the SSPS software. From the analysis, only perceived benefits, perceived usefulness and perceived ease of use have a significant relationship with online buying intention during the pandemic lockdown period. This is because some of the online sites are thoughtful enough to have live chat services to provide assistance when needed. This method could aid the consumers to purchase online easily with minimal effort resulting in the higher frequency and intention to buy things online during the pandemic.

***Keywords— Covid-19, e-commerce, online buying***

## I. INTRODUCTION

According to the World Health Organization (WHO), Covid-19 is defined as an infectious illness that started in Wuhan, China in December 2019 which currently a pandemic that impacts many countries in the world. The most ideal way for slower transmission and prevention towards it is keeping yourself safe by keeping social distance and stay home as this illness can be spread easily and there is no specific solution like vaccines for it. Thus, many countries that have major cases of this pandemic outbreak undergo country or cities lockdown where nobody in the country has been able to go anywhere instead they need to cooperate and stay home to slow down the spreading and transmission of the virus. With the growth of the Internet, it will help people to continue their daily life to shop without go anywhere and just stay at home. According to Clement (2020), more than half of the global population are internet users as statistics have shown that 4.13 billion are internet users in 2019. However, according to Statista Research Department (2020), the number of internet users in Malaysia in the year of 2019 is 29.01 million users. The statistics illustrate that the rapid growth of the Internet has impacted the number of internet users in Malaysia as it increases substantially from 25.5 million of users in 2017 to 27.56 million of users in the following year of 2018. With the rapid growth of the Internet economy and the advancement of technology, it has turn e-commerce into one of the fastest-growing industries in the world (Rao, 2019). According to Statista Research Department, (2020), statistics display that generation X shop online more during the lockdown in Malaysia as 2% of the respondents that are categorised as generation X in the age range of 45 to 54 stated that they shop and buy online every day in May 2020. The result also shows that the frequency of respondents aged 45 to 54 purchased online several times in a month as of May 2020 during the lockdown in Malaysia is higher than respondents aged between 25 to 34 which are generation Y. Although generation X are not digital natives, yet they are currently engaging themselves with digital trends just as millennials and generation Z. Study shown that generation X was among the first few to adopt online shopping behaviours, unlike many have assumed that the younger generations like millennials and generation Z have the most contribution on e-commerce platforms (Mander and Valentine, 2018). Hence, the aim of this research is to determine the factors that influencing online buying intention among generation X during Covid-19 lockdown as it can be beneficial to future researchers, business entrepreneurs, consumers and more. The objectives of this research are to examine the relationship between perceived benefits, perceived risk, trust, perceived usefulness and perceived ease of use with online buying intention among generation X during Covid-19 lockdown in Malaysia.

## II. METHODOLOGY

Both primary and secondary data were used in this research. The target respondents in conducting this research are the generation X in Malaysia who was born in the year 1966 till 1985 ranging from 35 years old to 54 years old (Markert, 2004). According to G-Power analysis, the requirement of sampling size for this study is at least 138 of the respondents to answer the questionnaire. However, the questionnaire was given out to 200 respondents via Google Form that those have experienced online buying during Covid-19 lockdown in Malaysia regardless they are existing or potential online shoppers. The closed-ended questions were used to answer the questionnaire as it is straightforward, more favourable as it is simple and needed minimum effort and time to complete yet precise. The convenient sampling method was used as it is less expensive compared to other techniques and the convenience of participants' selection as they are easy to obtain. Besides, this research uses the Statistical Package for the Social Sciences (SSPS) software to carry out the data analysis based on the survey questionnaire. The data was interpreted through frequency analysis, descriptive analysis, reliability test and also multiple linear regression. These methods will determine the significant relationship between perceived benefits, perceived risk, trust, perceived usefulness and perceived ease of use with online buying intention among generation X during the pandemic lockdown period.

## III. RESULTS/FINDINGS

Based on the results summarized from the reliability test, all the five independent variables, as well as one dependent variable carried out using Cronbach Alpha. All the variables are above the minimum level of 0.7. This illustrates the accuracy and durability of information received from the respondents. Besides, a better approach that helps to represent the relationship between the dependent and independent variables is multiple regression analysis. Multiple linear regression analysis is used to discover the impact of the independent variables on the dependent variable in this research. Multiple linear regressions may be accepted as a positive relationship when the p-value is equal to or less than 0.05. Thus, both the perceived benefits (PB) and perceived usefulness (PU) with a p-value of 0.000 have a significant positive correlation with the online buying intention as the p-value is less than 0.05. The same goes to perceived ease of use (PEOU) that has a significant positive relationship towards the online buying intention with a p-value of 0.001. However, it was found that perceived risks (PR) and trust (T) has no significant relationship with online buying intention. It was said due to both the p-value are at 0.710 for perceived risk (PR) and 0.218 for trust (T), which exceed the range of p-value equal to or less than 0.05. According to the findings of multiple linear regression, that the hypotheses of perceived benefits, perceived usefulness and perceived ease of use is supported since its p-value is smaller than 0.05. Conversely, the hypotheses of perceived risks and trust is rejected as the p-value is greater than 0.05.

## IV. CONCLUSION

In a nutshell, this research is carried out to determine the factors influencing online buying intention among generation X during Covid-19 lockdown in Malaysia. The independent variables are listed in this research act as the factors that influencing online buying intention are perceived benefits, perceived risks, trust, perceived usefulness as well as perceived ease of use; whereas, online buying intention is the dependent variable. Hypotheses for all the independent variables are discussed in order to identify the relationship between the independent variables and the dependent variable. As the results shown, only perceived risks and trust do not directly affect the consumers' online buying intention. This is because the respondents are worried that their bank details might experience leakage of information or misuse of other purposes when they shop online. However, this does not give a drastic impact on the buying intention of consumers on online sites as most of the generation X recognise the secure policy and data protection policy from the bank while purchasing things online. Furthermore, the risks of online purchasing through visualisation and imagination without physical touch and feel as it is intangible are not affecting the intention of consumers buying online. As the improvisation of e-commerce sites, consumers now are able to have a clearer picture on the products in the review and comment section where buyers can share their thoughts and experience in text form and picture there. Hence, consumers have the opportunity to view and understand more details and information about the products from past buyers' feedbacks and comments before making payment online. Through this, they are more convinced and tend to shop online more frequently with all the convenient and useful features implemented on the sites.

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# PROBLEMS FOR EQUAL AND UNEQUAL FACILITY LAYOUT USING THE ORIGIN HEURISTIC

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***Abstract***

Facility Layout Problem (FLP) is concerned with the assignment of facilities on a plant region in order to optimize the measures of performance of the system. Real systems are large and complex, and the computational cost is high. Thus, most layout problems are known as NP-hard problem. Many approximate algorithms have been proposed to deal with these layout problems, i.e. heuristics and metaheuristics. Due to that, this study proposes two-stage heuristics, namely The Origin algorithm. This algorithm is inspired by the bottom left fill heuristic algorithm of the bin packing problem where the departments fill up the area based on the shortest distance from the origin at the bottom left corner. The proposed heuristics are used to solve Equal Area FLPs (EA-FLPs) and Unequal Area FLPs (UA-FLPs) with the main objective of minimising the total cost of the material cost of material handling between facilities while satisfying the constraints of functional area size as well as reserved space. Computational experiments capability of the suggested heuristic is tested on benchmark instances of various sizes from 4 to 125. Based on the results, the proposed heuristics generate high-quality results as compared to other metaheuristics.

***Keywords— facility layout, equal area, unequal area, heuristic, optimization***

## I. INTRODUCTION

The main objective of FLP is the efficient arrangement of facilities, especially in manufacturing plants. Palomo-Romero et. al., in 2017, facilities can be in the form of departments, workstations, manufacturing cells, machines, and warehouses. While setting up a plant area, designers need to organize a floor layout for all facilities so that the travelling distance of personnel or material handling carriers between each pair of facilities is minimized. From the manufacturing perspective, Liu and Meller (2007) mentioned that the material handling cost (MHC) is usually being used as the competency measurement of the layout. According to Besbes et. al. (2020), MHC is consist of the total distance and flow or items that move within the layout and subject to manufacturing constraints. FLPs emphasise on minimization of the MHC as highlighted by Ahmadi et. al. (2017), nearly 50% of the expenditures incurred in operations in manufacturing plants are associated with the MHC. To date, researchers explore various approximate methods inclusive of local search as well as heuristics approaches to obtain optimal solutions for various type of problems in a reasonable computational time. Since FLP is an NP-hard problem, there are many optimizations and heuristics approaches that have been proposed for solving small and large size instances respectively.

## II. METHODOLOGY

The proposed method is a two-stage heuristics algorithm in which the choosing sequence of the facilities are determined in the first stage and placement of the facilities are in the second stage.

*i. Pre-processing*

In this first stage, four different types of pre-processing are to be considered. There are decreasing in length (DL), decreasing of breadth (DB), decreasing of area (DA) and no fixed arrangement (none). All facilities will be arranged following the pre-processing stages before they can be placed on the manufacturing plant.

*ii. Processing*

In the processing stage, all the main procedures for the development of the Origin heuristic will take place. The steps are as follows;

| | |
|---|---|
| **Step 1** Place the first facility at the origin, (0,0) | **Step 4** Check the feasibility |
| **Step 2** Calculate the distance for all possible points from the origin, (0, 0) | **Step 5** Repeat Step 2 to Step 4 until all facilities are placed |
| **Step 3** Choose the minimum distance and place facility *i* | **Step 6** Calculate the objective function |

## III. RESULTS/FINDINGS

The effectiveness of the proposed approach can be conveniently illustrated by using numerical examples. Table 1shown the comparison of the results from The Origin heuristic with other results of Deconstruction and Reconstruction Quadrant-Based Genetic Algorithm (DRQGA) (Paes et al., 2017), Biased Random-key Genetic Algorithm (BRKGA) (Gonçalves, and Resende, 2015), PSO (Ohmori et al., 2010), VIP-PLANOPT (2006) and population-based heuristic with local search (Atta, S., & Mahapatra, 2019). The best-known results (BKR) of the material handling cost is shown in the last column of the table.

TABLE 1. Comparison of results for The Origin heuristic with the previous research

| **Problem** | **Number of Facilities** | **The Origin MHC** | **MHC** | **Improvement (%)** | **BKR** |
|---|---|---|---|---|---|
| **O-7** | 7 | 432 | 472 [a] | 8.47 | **432*** |
| **O-8** | 8 | 602 | 784[a] | 23.21 | **602*** |
| **O-9** | 9 | 718 | 1032[a] | 30.43 | **718*** |
| **O-10** | 10 | 976 | 1402[a] | 30.39 | **976*** |
| **O-15** | 15 | 2966 | 5134[a] | 42.23 | **2966*** |
| **O-20** | 20 | 6704 | 12924[a] | 48.13 | **6704*** |
| **L4B** | 4 | 1051000 | 1051000[b] | 0 | 1051000 |
| **L8** | 8 | 514 | 692.8[b] | 25.81 | **514*** |
| **L8FX** | 8 | 514 | 763.5[b] | 32.68 | **514*** |
| **L28** | 28 | 5250 | 6014.07[b] | 12.7 | **5250*** |
| **L125A** | 125 | 215630 | 250849.42[b] | 14.04 | **215630*** |
| **Ami33** | 33 | 818594 | 1025788.6[c] | 20.2 | **818594*** |
| **Ami49** | 49 | 10056340 | 15831475[c] | 36.48 | **10056340*** |

* indicates the best-known results (BKR) for the proposed heuristic

[a]Refer results in [2] [c]Refer results in [8] [b]Refer results in [7]

## IV. CONCLUSION

A new heuristic approaches have been introduced, namely The Origin heuristic for solving EA-FLPs and UA-FLPs such that the shapes and areas of facilities cannot be changed during the whole time horizon. Based on the computational experiments, the proposed method is robust, and its success rate of achieving the best solution is high. Indeed, the proposed method provides an efficient way to solve huge UA-FLPs. The algorithm is tested on benchmark data gathered from the past literature and a comparison has been made with other result algorithms proposed in previous research. This proposed method can be beneficial for solving complex, as well as dynamic problems. For future study, this work can be enhanced in various ways, as it can be extended to have more specific constraints, for example, the input/output points for all facilities may be without having fixed manufacturing plant size. It is also recommended that other heuristic and meta-heuristic algorithms can be tried.

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# ROLE OF PERSONAL WEARABLE TECHNOLOGY AS COPING MECHANISM IN MANAGING PSYCHOLOGICAL DISTRESS AMONG MALAYSIAN EMPLOYEE'S WORK FROM HOME DURING COVID-19 (MCO) PERIOD

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***Abstract***

This study investigates the role of personal wearable technology as a coping mechanism in managing psychological distress among Malaysian employees who have been requested to work from home during the COVID-19 Movement Control Order (MCO) period. This study shall take place in a non-contrived setting with unit analysis of Malaysian workers that required to work from home during the COVID-19 period. Relevant sample sizes will be derived using G Power. A questionnaire will be used to attain data using Google Form which will be distributed using social media platforms. Then data will be analyzed using Statistical Package for Social Sciences (SPSS). In obtaining personal wearable technology, the employee can reduce their stress and manage their routine accordingly. Hence, an employee can also increase their well-being as well as productivity and job performance.

***Keywords – Psychological distress, Personal Wearable Technology, Work from home, COVID-19, wellbeing***

## I. INTRODUCTION

The COVID-19 pandemic is a serious crisis that has occurred in Malaysia and has led to various cases of mortality and morbidity (Shanmugam, Juhari, Nair, Ken, & Guan, 2020). Due to the World Health Organization's (WHO) instructions to impose mandatory lockdowns and to enforce social distancing, many Malaysians have experienced numerous psychological distress problems such as fear, anxiety, grief and depression(Ambikapathy & Ali, 2020) (Shanmugam, Juhari, Nair, Ken, & Guan, 2020) (Lal, et al., 2020) (Druss, 2020). The psychological distress model was derived from Pearlin, Lieberman, Menaghan & Mulan Stress Process Model of 1981, describing types of distress experienced by work from home employees such as job-related stress, family-related stress and health issues (Turner & Lloyd, 1999) (I.Pearlin, 1999). Personal wearable technology such as smartwatches can act as a coping mechanism in achieving better well-being among Malaysian employees (Carter, 2016). The necessity to conduct this research was definite, as no research has been previously done on personal wearable technology as a coping mechanism in managing psychological distress while working from home in Malaysia. This research can be useful to any individuals who are required to work from home during the MCO period, as they will be able to manage their distress in a better and more convenient manner. In personal wearable technology usage, employees could solve several psychological problems such as feeling anxious, restless and weary during long working hours and with less sleep and rest, due to an overwhelming workload and distraction by the presence of family members while working at home (Marimuthu & Vasudevan, 2020). Besides that, using personal wearable technology in managing health issues during home-based workouts might be a substitute to feelings of fear, anxiety and psychological pain of being unable to perform physical activities outdoors (Hasan & Hatta, 2020).

## II. METHODOLOGY

The purpose of this study is to conduct a hypothesis testing and correlational study between the type of stress (independent variable), role of wearable technology (mediator) and employee's wellbeing (dependent variable). In order to be able to address each issue, this study approaches the working population in Malaysia that is required to work from home during the COVID-19 period. For a successful approach, a questionnaire was constructed and distributed through social media platforms such as Twitter, Instagram, Facebook, WhatsApp and Telegram. Total respondents will be derived using G Power and analyzed using Statistical Package for Social Sciences (SPSS).

## III. CONCLUSION

Working from home may seem convenient at first for many employees due to be able to manage work and non-work domain's tasks. However, the sense of convenience had changed when the whole world affected by COVID-19. Due to many types of psychological distress faced by work from home employees, it is crucial for them to obtain technology in monitoring each of their wellbeings. By using wearable technology, distress is in control hence increase productivity and employee's job performance.

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# THE ADOPTION OF BLOCKCHAIN BY MSMEs IN INDONESIA: AN INITIAL EXPLORATORY RESEARCH

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***Abstract***

Blockchain tends to be known as one of the technologies that support the Go Digital concept of business for Micro, Small and Medium Enterprises (MSMEs) in Indonesia. Blockchain technology predicted useful and offers high benefits for MSMEs, while there is no certain study regarding the intention of MSMEs to adopt blockchain in Indonesia. This study qualitative wants to explore the behavioral intention of Indonesian's MSMEs in adopting blockchain technology in their business by interview 10 owner of MSMEs who comes from 6 MSMEs in Indonesia all is nonuser of blockchain technology, with an open question this study observes the perception about the factors considered blockchain adoption. It is revealed that the reasons for not using blockchain are they get less information about how and where they can access and get the technology as well as they tend to think that this technology is expensive. More data on other adoption variables, such as business expectations, social influences, hedonic motivation, and habits, is essential for future study.

***Keywords—Blockchain, SME, technology, transaction, secure***

## I. INTRODUCTION

Based on the conducted survey by the Central Bureau of Statistics, the population of Micro, Small Medium Enterprises (MSMEs) in Indonesia has reached 64 million which indicated that the 99,9% of the overall operating enterprises in Indonesia was MSMEs (Santia, 2020). It is irresistible that the MSMEs in Indonesia is the main actor of the economic sector. The government through the State Minister for Cooperatives Small and Medium Enterprises has been working hard on pushing the MSMEs to take advantage in the middle of the COVID-19 pandemic through Go-Digital.

The Go-Digital concept will function better if it is not only using the digital platform, but also is combined with a system that does the recording of every transactions and data management digitally, transparent, and secure (Arif, 2020). Blockchain is one of the technologies that supporting the Go Digital concept (Fenwick and Vermeulen, 2019), it is a distributed ledger technology, regulated by a consensus process and protected by cryptography (Nakamoto, 2008). Blockchain has the potential to displace trust-based intermediaries and applied to generate value for businesses (Tapscott & Tapscott, 2016). Nowadays the blockchain technology is known as very effective in terms of data recap on every process in business activity, the blockchain technology is known for its advantage of increasing the performance and data security of MSMEs without having any intermediation by implementing the four main systems that are being offered by Blockchain like cloud storage, smart contracts, payment solutions, supply chain management, and some other systems and features that can be adopted by MSMEs (Yaqub, 2018).

Blockchain tends to be known as a new technology which is predicted to be useful for business including MSMEs, while there is no certain study regarding the intention of MSMEs to adopt blockchain in Indonesia, yet. The variables of the adoption technology model such as are Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Condition, Price Value, Hedonic Motivation, and Habit (Venkatesh et al, 2003; 2012) have not been identified.

This paper describes the initial exploratory study regarding the behavioral intention of Indonesian's MSMEs in adopting blockchain technology in their business.

## II. METHODOLOGY

As stated in the introduction, this study intended to explore initially the behavioural intention of MSMEs in Indonesia to adopt blockchain in their business. Therefore, the objectives of this study are: 1) know whether the MSMEs in Indonesia want to adopt blockchain, 2. To determine the factors that affect the behavioural intention of MSMEs in Indonesia toward adopting blockchain.

To accomplish the objectives, this research managed an interview with MSMEs in Indonesia. The interview was conducted to observe the perception of MSMEs in Indonesia regarding the factors considered blockchain adoption. The semi-structured interview involved 10 conveniently chosen Indonesian MSMEs.

## III. RESULTS/FINDINGS

The interview conducted with 10 resource people from 6 MSMEs revealed that none of them had used the blockchain technology though 70% of them ever heard about blockchain and 30% of them slightly know about blockchain as well as understand the benefit that is being offered by blockchain.

Blockchain itself is offering unique features that MSMEs find attractive, 80% of them believe that blockchain is having a high-security level and minimise the level of fraud and they believe that this is the latest technology. 60% of them believe that blockchain will help them do the data recap and recording in a good way, also all of them believe that blockchain is increasing their social status while offering a great integrated system.

Nevertheless, the reason why they have not adopted the blockchain technology is because 80% of them think that new technology is always expensive to get and 60% of them said that they did not have supporting facilities and 40% of them said that it is hard for them to find further information about blockchain, such as where and how they can get the technology.

## IV. CONCLUSION

Based on the finding from the initial exploratory study it is founded that the resources people thought that blockchain was useful, had a good performance expectancy, and trusted. The main reason of the resources people did not use blockchain in their business was lack of information about this technology and they believe that blockchain was expensive or had low price value and they did not have to facilitate condition to implement blockchain in their business. It is important to explore more detail regarding other adoption variables such as Effort Expectancy, Social Influence, Hedonic Motivation, and Habit.

The next process to be done in the research is conducting interviews with more segmented resources people based on a certain industry, such as food and beverage which need a clear and trusted supply chain process. A set of question for semi-structured interview and the detailed interview protocol will be prepared for the interview process. The interview result will be verbatim and go through the coding process, therefore the collected data will be more comprehensive and detailed hence all the adoption variable will be explored.

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# THE IMPULSE PURCHASE AMONG YOUNG MILLENNIALS VIA MOBILE SHOPPING

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***Abstract***

The growth of mobile shopping lately has boost up the spending power of Malaysians and the millennials spent 23.1% of their waking lives on the screen. They are also the highest contributors for mobile purchases in Malaysia. The objective of this study is to provide a contribution to the understanding of the concept of mobile shopping and the factors that affect the millennial's impulse purchase via mobile phone. The result shows that the influence of digital marketing, mobile application functions, perceive ease of use and social integration will impact millennials to purchase constantly.

***Keywords— impulse purchase, millennials, mobile shopping, mobile purchase***

## I. INTRODUCTION

Averagely, the young millennials spent more than 3.7 hours per day on their phones, which brings a total of 23.1% of their waking lives on screen. They are also known as digital natives and love spending their time online (Lad et al., 2020). Thus, after the global pandemic of covid-19, the usage of mobile shopping increase dramatically and shopping through mobile phones becomes the new norm. According to Katrina & Benedict (2019), 58% of Malaysians purchase online via mobile phone and majority of the users are millennials. The millennials are also known as Gen-Y that born in the years 1981-1994 (Lad et al., 2020). This group of millennials has contributed 49% in total for online purchase in Malaysia and they also have the highest spending power in this industry (Lim et al., 2015). Previous researchers highlighted the causes of online purchases, the factors affecting online purchases and the impacts of online purchases. The study of impulse purchases has started to be the major concern of marketers lately. According to Lau et al., (2018), the growth of technology impacts the closure of many brick-and-mortar retails. To survive in this competitive world, many physical stores have started to move online and developed their own online apps. Despite paying thousands of ringgit to develop apps, it may not guarantee all the physical retails are able to capture the target audiences' attention. Therefore, studies on impulse purchase could help the business grow and identify the factors affecting consumer purchase behaviour via mobile phone. Despite the importance of impulse purchase in the context of consumer behaviour, Lau et al. (2018), added that studies on customer impulse purchase intention still remain scant in the existing literature especially in Malaysia. Therefore, this study would like to identify the factors affecting impulse purchase among millennials through mobile shopping. The variables absorbed in this study are the influence of digital marketing, mobile application functions, perceived ease of use and social integration as the independent variables after thorough reviews from past researchers (Tan et al., 2017; Chen, 2009).

## II. METHODOLOGY

The researchers used a survey questionnaire to obtain the data from the millennials. Purposive sampling was being selected in this study by sending google forms to university students in several public and private universities in Malaysia. The researchers used G -Power to determine the sample size (Memon et al., 2020). In using the G-Power software, a minimum of 138 samples required in this study. The researcher will choose a 95% confidence level to provide strong and very conclusive results. Nevertheless, this research managed to collect 201 respondents, mainly focusing on the millennials in Malaysia. Various data analytics were conducted to interpret the data from various aspects, such as descriptive statistics, reliability analysis, and Multiple Linear regression (MLR) tests using SPSS version 25. According to Hanafi & Fadilah (2017), with respect to correlation analysis objectives and regression, the SPSS statistical software could easily perform the Pearson's Correlation tests and the MLR test. Therefore, SPSS statistical software is considered as an optimal statistical tool for performing this two statistical analysis for this study.

## III. RESULTS/FINDINGS

The findings revealed that most of the respondents in this study are comprised of female respondents (61.2%), which is approximately twice the number of male respondents (38.8%). Based on the correlation analysis, all the independent variables (digital marketing, mobile application functionality, perceived ease of use and social integration) have correlations with the dependent variables (impulse purchase on mobile shopping among young millennials). The multiple linear regression shows a significant influence (p-value below 0.05) for all the independent variables. Social integration or social influence has the strongest influence on impulse purchase in this study. The $R^2$ value is 80.1 percent with is relatively high.

## IV. CONCLUSION

The findings acquired from this study would be contributing to various associated parties related to e-commerce platforms. These include the Malaysian government, mobile shopping services provide, e-marketers as well as e-consumers. Through realizing how the young millennials purchasing behaviour, especially quick impulse purchase, is a good opportunity for the e-service providers to target more potential consumers and seize the chance to broaden the existing customer base. For instance, through realizing the importance of digital experiences and mobile application functionality, the e-services providers will be reminded to put more effort into enhancing the overall features of their system. In addition, ever since the occurrence of Covid-19, mobile shopping platforms would become an essential substitute for brick-and-mortar shops, and it is believed that mobile shopping platforms might completely replace physical shops in the future, considering the transformation of digital trend in the whole world including Malaysia. As the world is evolving to embrace more advanced technology, Malaysia shall be forced to move forward and catch up with the development pace to stay abreast with other countries. From the perspective of e-marketers, this study provides opportunities for the e-marketers to view the overall perceptions of the millennials of Malaysia towards the mobile shopping platform. By knowing the consumers in a more accurate manner, allows the e-marketers to formulate a more effective digital marketing strategy to capture the interests of the consumers to browse through and navigate their online shops in mobile shopping platforms for doing the purchase. While from the perspective of e-consumers, the knowledge in this study will definitely create a new vision to them on the mobile shopping topics, so that they will become wiser shoppers that conduct better decisions during the online shopping

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# THE ROLE OF BEHAVIOURAL ANTECEDANTS ON EMPLOYEES' INVOLVEMENT IN GREEN INFORMATION SYSTEM

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***Abstract***

This study intends to examine the role of behavioural antecedents for employees' contribution in the Green Information System (Green IS). The purpose of this research is to report the intention on how attitude and behaviour played a noteworthy fragment on ICT employees' attitude in Green IS implementation in MSC companies in Malaysia. The study focused on employees in MSC status ICT companies in Malaysia. Purposive sampling was used to identify the target respondents who fit a predefined criterion. A total of 183 responses were analysed using SPSS and SmartPLS to uncover the results. The results indicated that four constructs (Optimism, Innovativeness, Insecurity and Discomfort) of the technology readiness index (TRI), had a statistically positive relationship with attitude, insecurity with a significant negative relationship with attitude except for discomfort which showed no significant result in the findings. The results indicate that subjective norms have a better impact compared to perceived behavioural control on ICT employees in Malaysia.

***Keywords—green information system, behaviour, attitude, intention***

## I. INTRODUCTION

Over the year, the use of information technology (IT), has gone through a significant revolution in quite a few zones. This includes our lives being enhanced with technology, work and providing ease along with other imperceptible paybacks. Nevertheless, there is a lack of realization among most people that IT in some way contributes to eco-friendly environmental problems (Seidel, et. al. (2017). The extensive use of electricity to power up computers, high-end servers and IT equipment plays a significant role in environmental effects. Green Information Systems (Green IS) was defined by Brooks et al. (2012) in two ways: "as the initiatives to utilize IT set-up to transform administrative procedures and/or practices to improve efficiency in terms of energy conservation and condense the conservational effects. Thus, this initiative leads to introduce environmentally healthier products and/or services". IT and IS key differences were summarized by Boudreau, Chen, and Huber (2008): "An information technology (IT) transmits, processes, or stores information, whereas an information system (IS) is an integrated and cooperating set of software using information technologies to support individual, group, organizational, or societal goals." This delineation is relevant to Green IT and Green IS in this study. Green IS/IT are interconnected notions, but they have their own center of attention and function. This study aims to investigate the behavioural antecedents for employees' involvement in Green Information System (Green IS) and further it will reveal if information and communication technology (ICT) employees' in Malaysia have a clear intention in the implementation of Green IS to address the problems emphasized above, consequently guaranteeing that we have a sustainable Green environment. The study purposes to scrutinize the intention on how attitude and behaviour played a significant part on ICT employees' attitude in Green IS implementation in MSC companies in Malaysia.

## II. METHODOLOGY

The study focused on employees from multimedia super corridor (MSC) status ICT companies in Malaysia. The study employed the individual members of selected companies as the unit of analysis. Hence, the unit of analysis for the study was individual responses. In this study, the purposive sampling method was used to determine and locate the sample population. Surveys were sent out to 500 employees holding various positions with a total of 218 responses returned, out of which 183 were usable. This study employed SPSS and SmartPLS3.0 for data analysis.

## III. RESULTS/FINDINGS

The results of the study suggest that out of four constructs (Optimism, Innovativeness, Insecurity and Discomfort) of technology readiness index (TRI), optimism and innovativeness have a statistically significant positive relationship with attitude, insecurity with a significant negative relationship with attitude except for discomfort which showed no significant result in the findings. The results indicate that subjective norms have a better impact compared to perceived behavioural control on ICT employees in Malaysia. The outcome significantly showed that attitude had a full mediating effect on the relation between the TRI constructs and the intention towards Green IS. It correspondingly observed the probable extension to the body of knowledge as there was inadequate research done on the Technology Readiness Index model on Green IS enactment using the four dimensions with the behavioural model.

## IV. CONCLUSION

The contribution of this study on the role of how attitude mediates significantly capitulated positive results and new findings for future studies. Finally, the study has also illustrated that attitude has an indirect effect on actual intention towards Green IS among ICT employees in Malaysia. The product of this study is subjected to deepen Green Technology Implementation, as well as to encourage and produce greater public mindfulness towards Green initiatives.

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# ENTREPRENEURSHIP

# AGROPRENEUR PASSION AND PERSONALITY INVENTORY (APPI) FOR YOUNG AGRICULTURE ENTREPRENEURS

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***Abstract***

Despite an impressive grant opportunity of RM20 million by the Ministry of Agriculture and Food Industry (MAFI) to produce 1,200 young agropreneurs in 2020, the scarcity of the grant still poses a challenge to MAFI. Currently, the selection is based on business plan submission and participation in training programs under MAFI and its agencies. However, not all grant recipients were successful in sustaining their business venture. This posts the need for a more scientific approach in the assessment and selection process, with the literature suggesting that it can be improved with traits theory, social identity theory and passion theory. However, the evidence for and discussion of this new model is limited. This study aims to develop a robust framework to assess and select young agropreneurs to receive the limited grants. Due to the lack of a specific assessment and selection model, this study draws from the core theories with key components including entrepreneurial passion, motivation, and personality. The newly developed model of the Agropreneur Passion and Personality Inventory (APPI) measurement would provide another (behaviour) dimension to the assessment and selection process, thus allowing the selection of the best candidates to receive the grants and assistance.

***Keywords—agropreneur, passion, personality, agriculture, behaviour***

## I. INTRODUCTION

The seriousness of the Malaysian government in making the country a truly entrepreneurial nation by the Year 2030 is evidenced by the numerous initiative in the Malaysian Budget 2020 and 2021. The re-establishment of the Ministry Entrepreneur Development (MED) in 2018 or now known as the Ministry of Entrepreneur Development and Cooperatives (MEDAC) serves as a catalyst to the launching of the Dasar Keusahawanan Negara (DKN) 2030, which aims to rationalise the roles and functions of various entrepreneur development programs in pursuit of the national economic agenda. Thus, entrepreneurship and agropreneurship have the potential as the catalyst for income development of low income (B40) and middle income (M40) groups. Under Strategy 2 of the Eleventh Malaysia Plan (EMP) that is linked to the agricultural sector, the government is committed to promoting training and youth agropreneur development via collaboration across agencies and the private sector to modernise farming techniques and nurture agrobusiness start-ups under the Agropreneur Muda (Young Agropreneur) and agriculture as business programmes. As of 2020, MAFI has targeted to provide grants totalling up to RM20 million for 1,200 young agropreneurs Young agropreneurs can also take advantage of the National Agrofood Policy (NAP4), 2011 — 2020, particularly the new sources of wealth programme as an action plan to increase income and improve the welfare of farmers (Abduludin, 2020).

However, due to the limited number of grants that are available for agropreneurs under the MAFI's Young Agropreneur Programme, there is a need to develop a more thorough and scientific process of selecting suitable candidates for the grants. Currently, the selection process is done based on the submission of a business plan and participation in training programmes conducted by the various agencies under MAFI. Thus, the underpinning question of this research is how can we improve the selection process of potential grant recipients? To answer this question, the proposed model development of the Agropreneurs Passion and Personality Inventory (APPI) measurement would provide another dimension to the assessment and selection process, thus allowing the agencies under MAFI to choose the best candidates to receive the grants and assistance.

## II. LITERATURE REVIEW

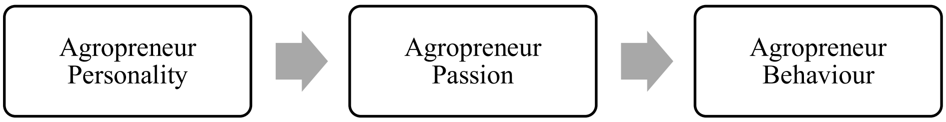
It is suggested that entrepreneurial passion plays an important role in influencing entrepreneurial behavioui Entrepreneurial passion is hence viewed as a decisive factor that drives individuals to decide whether an opportunity acted upon (Brännback et al., 2006). As an intense type of feeling that is experienced from an interplay between tl person and activity, entrepreneurial passion is also susceptible to the social context. Entrepreneurial passion concerned with activities associated with roles that are meaningful and central to the self-identity (identity centralit of individual respondents that is held within the situated social context by practicing entrepreneurial roles such inventing, founding and developing (Cardon et al., 2012) and in getting emotional feedback from these activiti

(Gielnik et al., 2015). Although it is known to be very capable of influencing positive entrepreneurial behaviour (Cardon et al., 2009; Jennings, 2012; Thorgren & Wincent, 2013), entrepreneurial passion can also reversely be experienced through the emotional feedbacks that individuals receive after performing an entrepreneurial-related activity. Drawing from Baumeisteret al.'s (2007) theory of emotion as feedback, Gielnik et al. (2015) posit that entrepreneurial passion may not only drive entrepreneurial behaviour but that there may also be a reverse effect of entrepreneurial effort on entrepreneurial passion. They found that during the entrepreneurial learning activity, the results in outcomes and subsequent appraisal processes of the outcomes lead to entrepreneurial passion being experienced by the people either positively or otherwise.

## III. CONCEPTUAL FRAMEWORK

Based on the review and synthesis of work of literature, a conceptual framework linking agropreneur personality, agropreneur passion and agropreneur behaviour is proposed for this study (Figure 1). This serves as the basis for the following propositions:
*Proposition 1: Agropreneur personality is positively associated with agropreneur passion.*
*Proposition 2: Agropreneur passion is positive associated with agropreneur behaviour.*
*Proposition 3: Agropreneur passion mediates the relationship between agropreneur personality and agropreneur behaviour.*

Figure 1: Agropreneur Passion and Personality Framework




## IV. CONCLUSION

The newly developed model of the Agropreneurs Passion and Personality Inventory (APPI) measurement would provide another (behaviour) dimension to the assessment and selection process, thus allowing the selection of the best candidates to receive the various grants and assistance and assistance ministries and government agencies.

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# ANALYSIS OF LEARNING PROCESS IN BUSINESS INCUBATORS CASE STUDY IN THE GREATER HUB SBM ITB

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***Abstract***

The stage in The Greater Hub incubator is pre-incubation, main incubation, and post-incubation. In a batch, tenants run an incubation period of 4 months, which includes from the initial registration, learning program, then the closing activity of the incubation, namely "Pitching Day". The learning programs and activities are expected to produce various kinds of startups that can create the latest innovations to bring big changes to the Indonesian economy. This study aims to examine the incubation process at The Greater Hub and to see best practice programs in tenant mentoring which include criteria, stages, learning process, facilities, graduation, after graduation programs and their impact. This research is a cross-sectional study and performs data collection by interview. The speakers include 3 managers, 3 tenants, and 1 expert. Based on the analysis of all these aspects, The Greater Hub focuses more on the networking aspect, which bridges tenants with venture capitalists and investors. Tenants are no longer involved in programs, facilities and there is no special funding for tenants when completing the incubation period. The conclusion is that The Greater Hub incubator still has shortcomings in the incubation process. The results of this study are expected to be a measuring tool for process evaluation in the incubator.

***Keywords— Business Incubator, Incubation Process, Start Up***

## I. INTRODUCTION

The concept of entrepreneurship is an important factor in Indonesia's economic growth in facing global competition. University is expected to be the first step in shaping and instilling an entrepreneurial spirit. The presence of an incubator business at the university has a role in developing business interests and abilities so that it can create new start up. Currently, the main problem is, they are difficult to survive. Because start up also needs assistance in their business, someone who is expert and experienced. However, there is no ideal standard for an incubator, so it is often found that the process in the incubator is not effective. The Greater Hub is an incubator business unit initiated by the School of Business Management (SBM) ITB, for ITB students in particular and the younger generation. The Greater Hub aims to increase innovation, develop businesses, and help small businesses in the SBM ITB community by providing an entrepreneurial ecosystem. The Greater Hub's mission is to be able to educate students to become innovative leaders with an entrepreneurial mindset. According to BEKRAF (2018), there are 5 common problems associated with incubators such as facilities, human resources, markets, capital, and regulations.

So through this research, it will describe the learning process in the incubator business, especially universities so that it can examine what is related to the incubator in order to create an efficient and effective ecosystem in the incubator. It is hoped that the start-up alumni from the incubator university will be able to be a solution to problems for society and a solution to problems in the future.

## II. METHODOLOGY

Based on the research focus, this type of research is qualitative and exploratory in nature, because it wants to identify the patterns and features that exist in The Greater Hub. The paradigm in this study is post-positivism which monitors the ability to directly observe the object under study. Observation of research by visiting directly to the field, namely the School of Business Management Bandung Institute of Technology to conduct interviews and build interactive relationships.

In processing data, the researcher transforms the object into the form of field notes, summarizes the results of interviews, interviews with informants which are then processed or what is called quantifying through the verbatim process. It aims to study the overall incubation stages applied to The Greater Hub. Based on the time of implementation, it belongs to the Cross-Sectional. Where researchers process data in only one period, then perform data processing, data analysis, and make withdrawals to answer research questions.

Triangulation is a multimode approach that researchers take when collecting and analyzing data. Starting from the phenomenon under study it can be understood well so that high-level truths can be obtained if approached from various angles which are expected to produce reliable truths. Therefore, triangulation is a technique of checking the validity of data that makes use of something else in comparing the results of interviews with the object of research.

The triangulation used in this research is Methodological Triangulation, which is an interview with various related parties, as well as observing documents and data available from the official website of The Greater Hub.

The steps to Establishing the Evidence Chain Begin with research questions, study protocols, case study evidence, case database studies, and case study reports. The purpose of creating this chain of evidence is to increase reliability, then external researchers who can check both ways, produce clues in the report to the relevant section, show actual evidence and circumstances, and consistency with the protocol.

## III. RESULTS/FINDINGS

In the pre-incubation stage, in general, the tenant criteria already include the criteria applied in several articles, but the criteria that are still not fulfilled are the criteria for the impact of future start-ups and the impact felt by the wider community. Because usually start-ups do not have a consistent vision and mission and planning to be able to survive in the long term. According to Gerlach & Brem (2015), in the incubator registration stage, training activities and processes are needed, while The Greater Hub does not carry out the training process at the initial stage.

Then the main incubation stage, in this incubator the learning program is carried out effectively. Managers have conceptualized curriculum and prepared expert mentors to assist tenants during the incubation period so that the learning program runs optimally. In addition, there are also supporting programs such as seminars and workshops that are regularly held. However, the incubator did not provide funding to tenants because campus regulations were not allowed to provide funding. Although there is no funding program, the incubator has good networking. The networking program carried out is bridging tenants with investors and venture capital as well as community links. Networking is done by holding a Pitching Day where the incubator will invite investors and venture capitalists. The Greater Hub also provides facilities that can be used by tenants to support their business effectiveness. Between the incubator and the tenant, each other produces positive feedback because they feel the good impact. For example, the incubator of increased human resource value and TGH performance, then the impact on tenants, namely networking, knowledge gain, and exposure.

Then post-incubation, in this incubation, there are no specific criteria for tenant graduation. In addition, the incubator also does not absolutely issue proof of graduation in the form of certificates or graduation letters. Tenant was simply released when it had finished completing the 4 month incubation program. And after that, there were no more special programs dedicated to tenants. Likewise with the facilities and sustainable targets. After completing the incubation period, there are no more facilities that can be accessed by tenants, and the incubator does not have a target for sustainable tenants. This is because what the incubator emphasizes for tenants is how to understand start-up before setting goals for growth.

## IV. CONCLUSION

In this study, the results of research and analysis of verbatim coding were obtained from interviews with 7 sources including 3 incubator managers, 3 tenants and tenant alumni, and one expert. The conclusion that can be drawn is that the pre-incubation process at The Greater Hub is carried out directly by selecting based on the criteria set by the incubator, namely by the stages of open submission, selection, pitch deck, and interviews.

At the main incubation stage, tenants receive learning programs and services provided by The Greater Hub. The learning programs provided are mentoring, coaching, seminars, and workshops. The services provided are in the form of collaboration that includes networking and Pitching Day activities, then there are also physical and non-physical facilities that can be accessed by tenants to support the effectiveness of the learning program.

In the post-incubation stage, when tenants have completed the incubation period, traces of the tenants are recorded in The Greater Hub database and exposed because the tenants will be known as alumni of The Greater Hub. After completing the incubation program, tenants no longer get facilities, special programs, and the incubator does not set specific targets for tenants who are sustained or directly absorbed by the market. The incubation program closes with a Pitching Day activity, where tenants will present a pitch deck in front of venture capitalists and investors. This has a good impact on tenants, The Greater Hub as a place to learn about the business world and to develop start-ups. In addition, tenants will get a large exposure and partnership chance.

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# ANALYSIS OF MICROFINANCE ON EMPOWERING SELF SUFFICIENCY AND SUSTAINABILITY

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***Abstract***

Microfinance Institutions (MFI) are urged to meet the challenge of achieving social and financial objectives. In the long run, many Microfinance Institutions are facing the problem of financial sustainability with increasing outreach. Therefore, this study intends to examine the relationship between Outreach and Sustainability of Microfinance Institutions in the Sub-Saharan Africa region. Canonical Correlation analysis is used to study the relationship between two groups and the study tries to find a canonical correlation between five variables of outreach and five variables of sustainability. Canonical Correlations Coefficients (all functions) of Microfinance Institutions in sub-Saharan Africa regions are significant and high positive correlation (relationship) between outreach and sustainability in the region of Sub Saharan Africa.

***Keywords— Microfinance, Outreach, Sustainability, Self-sufficiency, Sub Saharan Africa***

## I. INTRODUCTION

This study intends to examine the relationship between the indicators of Outreach and Sustainability of MFIs in the sub-Saharan Africa region. The prime objectives of MFIs are providing financial services to the economically weaker section of the society (loan outreach to the poor). Microfinance at present is confronted with the challenges of meeting the dual objectives of reaching poor clients i.e., a social objective and being sustainable i.e., financial objective (Mordich 2000, Haratkha 2004). To achieve the social goal, MFIs must expand outreach to the poorer as much as possible and, they seek self-sufficiency without depending upon any subsidies to achieve the financial goal.

## II. METHODOLOGY

The objective of the study is to ascertain the relationship among outreach indicators, sustainability indicators and Efficiency. Canonical Correlation analysis is used to study the relationship between two groups with a different number of variables. This study tries to find a canonical correlation between five variables of outreach and five variables of sustainability.

The hypothesis statement is as follows:

H0 = 0: The null hypothesis is that the canonical correlations are zero i.e., there is no significant linear relationship between the two groups of outreach and sustainability variables.

## III. RESULTS/FINDINGS

In the region of Africa 126 MFIs are taken for the study of the association between outreach indicators and sustainability indicators. The commonly used test is Wilk's Lambda and all these test statistics are significant @ 5% level of significance. It shows the fitness of the total model. The canonical correlation coefficient of the first pair of variates is 0.43663 and it shows a moderate value. It is a linear combination of outreach and a linear combination of sustainability. The first root is significant $p < .05$ ($f = 2.073$). The correlations of the first and second canonical root and covariate set are highly correlated. Hence, the association between outreach and sustainability is good in the region of Africa.

## IV. CONCLUSION

Canonical Correlations Coefficients (all functions) of MFIs in sub-Saharan Africa regions are significantly based on widely accepted statistics of Wilks'Lambda, Pillai's trace, Lawley-Hotelling trace and corresponding F-test @5% level of significance. The correlation Coefficients of the first pair of variates is 0.437 and it shows a moderate correlation between a linear combination of outreach and sustainability. It is concluded that there is a high positive correlation (relationship) between two indicators groups i.e., Outreach and Sustainability in the region of Sub-Saharan Africa.

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# ASSESSING THE RELATIONSHIP OF SKILLS AND PERFORMANCE: A STUDY OF RELIGIOUS-BASED COOPERATIVES' BOARD MEMBERS

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***Abstract***

The National Co-operative Policy 2 (2011-2020) intends to transform the cooperative sector as the third economic engine of the nation. To realize the aspiration, responsible agencies organize retraining, upskilling, and reskilling for cooperatives' board members, management teams, employees, and members. With Islam as the official religion of the federation, mosque cooperatives contribute importantly to the economic and financial stability of mosque institutions. With the steady stream of revenue, mosques host religious and educational programs and support community socioeconomic aspects. Hence, the board members of mosque cooperatives must possess skills to execute the responsibilities towards the achievement of underlying objectives. The study aims to ascertain the set of skills required by mosque cooperatives' board members, then to examine the relationship of the skills with mosque cooperatives' performance. Using a cross-sectional research design, the study deploys a survey to gauge the perspective of mosque cooperatives' board members towards the underlying issues. The results reveal that there are two sets of skills essential for board members, and both significantly influence the financial performance of mosque cooperatives. The outcomes of the study shall benefit strategic stakeholders in the cooperative sector, as Malaysia aims to build a back better society, revitalize the economic and social sector during the post-pandemic covid-19 recovery. (200 words)

***Keywords—skills, cooperatives, performance, board, mosque***

## I. INTRODUCTION

The National Co-operative Policy 2 (DKN 2: 2011 – 2020) is a continuation of National Co-operative Policy I (DKN 1: 2002 – 2010). The DKN 2 aims (i) to increase the cooperatives' contribution to gross domestic product (GDP) by 5% in 2013 and by 10% in 2020, (ii) to improve the socioeconomic status of members, (iii) to concern for the environment, and (iv) to be responsible corporate citizens (SKM and KPDNKK, 2010). The objectives are achieved through five strategic thrusts viz. (i) stimulate the participation of co-operative in the high-value economic sector, (ii) strengthen the capacity and capability of co-operatives, (iii) create and develop the capability of human capital in co-operatives, (iv) to improve public confidence in the co-operative movement, and (v) strengthen co-operatives through effective supervision and enforcement (SKM and KPDNKK, 2010).

In addressing the third strategic thrust, various forms of upskilling and reskilling training, retraining, even to some extent a formal education process have been carried out (Hafizah Hammad et al., 2016). Stakeholders in a co-operative sector such as the Malaysian Co-operative Societies Commission (SKM) conducts a basic compulsory course which is also known as ML100 for cooperatives' board members (SKM, 2015). The National Co-operative Movement of Malaysia (ANGKASA) – the apex co-operative in the country also organizes three compulsory training for cooperative' board members viz. basic management, finance and accounting, and strategic management on annual basis. In addition, the Co-operative Institute of Malaysia (IKM) carries out formal and informal education for co-operators in Malaysia. Formal education involves an offering of Diploma Course and Certificate Course (Sushila et al., 2009). IKM also engages in informal education such as short-term training, conferences, seminars, and workshops.

With Islam as the official religion of the federation, and Muslim is the biggest population in Malaysia (Aziz, 2019), mosque co-operatives play essential roles in strengthening the mosque institutions economic and financial position (Ismail et al., 1990, Ahmad Raflis et al., 2017). Therefore, in achieving co-operatives' financial and non-financially sound performance (Sushila et al., 2010), like other cooperatives, mosque co-operators are also expected to acquire several sets of essential skills. Such skills enable mosque co-operators to overcome difficulties, venture into new ways to meet organizational goals, expanding business, and managing human capital in a comprehensive manner. The absence of those essential skills may cause difficulties to mosque co-operatives in progressing steadfastly, thus limiting full potential achievement. Hence, this study aims to answer two research questions. First, what are the skills required by mosque co-operatives' board members? Secondly, how those set of skills related with the mosque co-operatives' performance? Therefore, this study has two research objectives. First, to determine the skills required by the board members of mosque co-operatives. Secondly, to examine the relationship between the skills and mosque co-operatives' performance.

## II. METHODOLOGY

This study uses a cross-sectional research design to achieve the underlying objectives. It deploys survey to gauge respondents' perspective on the essential skills required for mosque co-operators and the influence towards mosque co-operatives' performance. The respondents consist of mosque co-operatives' board members. For data analysis, the study employs factor analysis to determine the underlying skills associated with the performance of mosque co-operatives. The study also examines the relationship analysis of skills and mosque co-operative performance. The study also checks for the convergent and discriminant validity.

## III. RESULTS/FINDINGS

The results show that the essential skills load into two factors. Both factors significantly influence mosque co-operatives' financial performance. However, there is no significant relationship between both factors towards mosque co-operatives' non-financial performance.

## IV. CONCLUSION

The evidence shows that two types of skills are essential for mosque co-operatives' financial performance. This study will benefit co-operative practitioners, scholars, policymakers and oversight bodies such as Ministry of Entrepreneur Development and Co-operatives (MEDAC), Malaysian Co-operative Societies Commission (SKM), Co-operative Institute of Malaysia (IKM), Islamic Religious Council, Islamic Religious Department, and Department of Islamic Development Malaysia (JAKIM), especially during the post-pandemic Covid-19, as we are revitalising all economic and social sectors of the country including the co-operative sector in building back better society.

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# FOSTERING ENTREPRENEURSHIP AMONG FOUNDATION STUDENTS IN THE PRIVATE HIGHER LEARNING INSTITUTION

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***Abstract***

Entrepreneurship has been one of the new directions to many universities in Malaysia. There are series of events and initiatives taken to encourage and embed entrepreneurial skills in students in higher learning institutions. Foundation students are those who enter the university after their SPM or STPM and the duration of the course normally 1 year. The paper will show the evidence that entrepreneurship can be introduced to students as early as their foundation year who managed to come out with a reliable business plan taking into consideration the pandemic situation. The students then conducted the project after a thorough evaluation from the lecturer. The business events took place for 4 weeks. The real project was given to individual students and had been performed according to the business plan and the business canvas model. The students managed to perform the business transaction and were very much experienced the entrepreneurial journey. The project was a successful event that promotes the first step of the entrepreneurial experience to the Foundation year students.

***Keywords—entrepreneurship education, experiential learning, foundation students***

## I. INTRODUCTION

Students from higher learning institutions need entrepreneurship education to develop their entrepreneurial skills, self-behaviour, and self-efficacy. Students responding to the entrepreneurial culture by changing their ability to think, seek knowledge as well as their behaviour. The culture outlines the availability of business opportunities, looking into the strengths, and starting the new business (Eisenhardt et al. 2000). Entrepreneurship education enhances the capability of students for starting their business ventures by creating a culture of innovation, reactiveness, and risk-taking tolerance which important to develop the motivation to go further. These types of entrepreneurial-focused education create an entrepreneurial culture and motivation within students in the higher learning institution. (Kuratko 2005). Entrepreneurship education should not only in-class activities but need to focus on real-world experience. This will lead to greater entrepreneurial abilities. (Kassean, et al. 2015). A common goal of entrepreneurship education is to strengthen entrepreneurs with value orientation for a sustainable society. (Lindner, J 2018). Foundation in management is a one-year programme offered by the Faculty of Management, Multimedia University, Cyberjaya. The objectives of the programme are to equip the students with the broad knowledge of management as the foundation before student choose their major in their undergraduate year. Students entering the programme were the fresh school leavers. At a very young age, the students were introduced to entrepreneurship by having to perform a group project under the subject Introduction to Business. Students were to come out with a good and doable business proposal based on their business canvas model. The students were challenged on their idea and execution plan during the pitching session with the lecturer. Lecturers will advise and monitor the overall running of the students' project. The projects involve the organization of a business from planning, execution, monitoring and control. Students were given 4 weeks duration for the execution. Students then presented the execution and outcome of the business and the lesson learnt from the overall project. The project varies from creating their product brand or becoming a re-seller to the existing product brand. They did the production, marketing, logistics and accounting treatment alongside their project.

## II. METHODOLOGY

An effective entrepreneurial ecosystem is a solution to deal with the challenges of teaching or developing entrepreneurial intention in the realm of higher education. Factors that promoting entrepreneurial culture can be through the development of a good curriculum and content. Other factors that foster entrepreneurial culture and entrepreneurial intention within students are role models, hands-on experience, mentoring support to foster an entrepreneurial culture and entrepreneurial intention within students. (Srivastara and Thomas, 2017).

During the planning, stage students were divided into groups. The first stage was individuals did their SWOT analysis followed by group SWOT analysis. Based on the result from both SWOT analysis groups were then moved to the next stage - brainstorming of ideas. Then the students were doing the business canvas model before they came out with their business proposal. Lecturers were involved at all stages of the process to evaluate risk, support the ideas and giving the necessary advice. After the business proposal presentation and the project has been approved the business project came to the next stage – execution. In the execution, stage students were facing the real-life challenge in the production, marketing, logistics and finances of the whole business. Technology comes in handy for them to execute their business plan where social media marketing is their core marketing tools. The students were given 4 weeks for the execution of their business venture. After the end of the project duration, the students close the account and report to the class on their success/failure during the execution.

## III. RESULTS/FINDINGS

There were 5 projects successfully executed with challenges and lesson learnt from all the projects. The challenges that students faced and the solutions during the execution of the project:

1. Students were from all over Malaysia thus difficult to communicate, Students used all the communication tools for example google meet and social media platform to communicate.

2. Inability to identify their strength and weaknesses. SWOT analysis performed by an individual as well as a group gave a clear direction of who will be responsible for the function in the project. For example head of marketing, head of finance, head of a production.

3. Promotion of products. The students used social media tools as their major promotion campaign.

4. Catching up with productions/stocks. Students used their ability to plan - some of the projects hired helper ad some of the projects used the made to order strategy.

The finding from the projects are the followings:

1. Students were motivated to learn more on how to become an entrepreneur after executing the business venture

2. Students learnt their capabilities and creativity in entrepreneurship skills

3. Instilling the business idea which leads to entrepreneurial venture was possible to start at the early year of the tertiary education.

4. Students learnt best on business communication and business management.

## IV. CONCLUSION

Entrepreneurial education is essential to foster an entrepreneurial culture amongst students in an institute of higher learning. The curriculum in entrepreneurial education must be developed to give students real experience in conducting business. As early as the students in their foundation year they can be exposed to the real mini project for them to explore their potential as well as opportunities. In a conclusion, students with more experience handling the mini venture of business on their own will be motivated to explore more entrepreneur skills in the near future when they entering their degree year.

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# IKIGAI AS A TOOL TO AMPLIFY AN ASPIRING ENTREPRENEURIAL INTENTION

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***Abstract***

Entrepreneur intention and well-being are associated with the business owner and the ventures that cost organizations considerable resources. Youth as aspiring entrepreneur may not be interested in any business idea, because they can't find the ideal passion, mission, vision or purpose for them to pursue the business idea. They are also unsure, hesitate and uncertain about their intention that does not translate to actual action. Hence, the country loses a number entrepreneur that has interest just they are not clear. Recent studies have mentioned about life-balancing or state of equilibrium to be reached, however, we tend to discount the importance of quantifying the elements of drive, passion and motivation. We likewise undervalue the incredible meaning, purpose, and impact that could give better impact to the entrepreneur and ventures well-being. The purpose of this study is to help the aspiring entrepreneur to identify their business idea that meets their interest and to amplify their passion. In Japanese culture, there is a term called Ikigai that means to find fulfilment that follows when an individual pursues their passions. The main objectives of this study to use the Ikigai as a compass to pursue a business idea that meets their passions.

***Keywords— ikigai, entrepreneurial intention, aspiring entrepreneur, passion, effectuation***

## I. INTRODUCTION

Another way of looking at this study is to help the aspiring entrepreneur from not knowing which area they should focus on, to knowing where they are supposed to do, and from various options of interest to a specific domain that meets their interest and follows the correct path. This study could have saved their time, cost, and energy. Emerging evidence on aspiring entrepreneurship differences in implications that fit their interest, i.e. accordance with and associated with better business domain and intention. However, the mechanisms underlying the links between passion, interest, and intention are not clear/uncertain. The role of Ikigai is proposed as an approach to guide the aspiring entrepreneur in this area.

## II. LITERATURE REVIEW

Entrepreneurial intention is one of the most crucial stages before an individual can decide to become an entrepreneur. The intention of an entrepreneur to create new ventures falls in the pre-decision stage (Volery et al., 1997). Having behavioural intentions toward entrepreneurship is also defined as the likelihood of owning one's own business (Crant, 1996). Having an entrepreneurial intention directs a person’s attention, experience, and action towards a specific association to achieve something (Bird, 1988). The entrepreneurial intentions’ aims are twofold: creating a new venture or creating new values in existing ventures (Krasniqi et al., 2019).

The term of Ikigai is a Japanese Philosophy for finding a reason for being. Ikigai means, reasons of being, or the reason for why you’re waking up in the morning. There is no specific word that can define the meaning of Ikigai. It carries the meaning of having a purpose in life or having the sense that life is worth living (Lomas, 2016). Ikigai is taken as a tool for building a more purposeful life, specifically through meaningful work. This approach aims to showcase a paradigm of entrepreneurship shifted such that every business is a combination of what we are good at, what we can be paid for, what the world needs and what we love.

Prior research has shown that personal goal setting and goal attainment plans help people gain a direction or a sense of purpose in life. Hence, this research is an important contribution to the literature on the meaning and purpose of life in the aspiring entrepreneur. Formulating clear goals or purpose of life has been shown to contribute to youth well-being and academic success (Schippers & Ziegler, 2019). However, this has been often neglected in education and entrepreneurship resulting in a lack of evidence-based tools. The effects of finding the purpose of life on the well-being of young entrepreneur have hardly been tested. Hence, this research is an important contribution to the literature on youth entrepreneur well-being.

## III. CONCEPTUAL FRAMEWORK

The purpose of life, or Ikigai has a high impact on the entrepreneur and their ventures and is expected to be able to give the best result on the business model and to contribute to the world. Besides that, experts and research scholars in the entrepreneurship field have recommended the use of the Ikigai framework to help entrepreneurs and aspiring entrepreneurs realized their potential and business interest and purpose. It is also suggested that the Ikigai framework can be used as an entrepreneur's personal compass and drive entrepreneurs to create a successful business (Kacy Qua, 2018).

Recent studies on the entrepreneurial domain, suggest that the process of effectuation is the most appropriate for entrepreneurs whose ventures faced with uncertainty (Quiroga et al., 2017). There are some context can be the match in the 4 elements of Sense and Ikigai and the theory of effectuation method approach that will be used in this study. Thus the theory of effectuation is the best underlying theory to be used, to explore the aspiring entrepreneur's intention with the role of ikigai. Figure1 show how the sense of Ikigai is the mediator effect for this study.

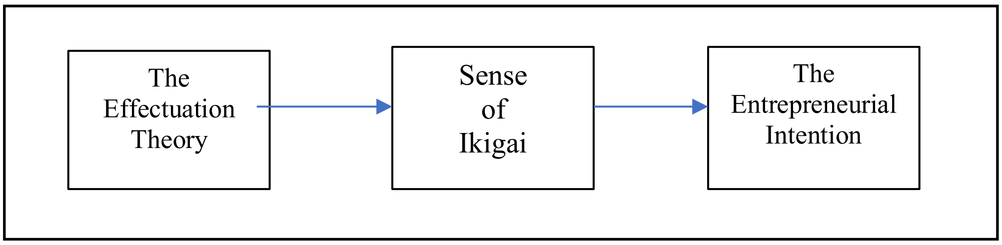


Figure 1: Conceptual Framework

## IV. CONCLUSION

Entrepreneur needs to do what they love to do, something that they passionate about, that cultivate and enjoy doing it all the time. From there is will resulting something truly remarkable. Everything happens in the lifetime, directly or indirectly to something related to the things that an individual love to do and close to their heart. To start, an individual will look into something that can be paid of and something that a world needs. The element to look at is something that you're good at; so, we have something within us, purpose, meaning, values.

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# MODELLING THE ADOPTION OF SMART URBAN FARMING TO CULTIVATE SUSTAINABILITY: AMONG THE ELDERLY

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***Abstract***

Urban farming has recently garnered attention because it improves social harmony and provides eco-friendly food to urban elderly. While smart technologies, such as the Internet of Things, might play a significant role in achieving greater eco-efficiency in urban farming, critics have suggested that the consideration of social implications has been side-lined and the notion of social innovation has not been broadly considered. Understanding the association between population ageing and urban change, and the need to develop sustainably and support urban communities are key issues for public policy. The purpose of this research is to discover the impact of social innovation and social entrepreneur on social and economic sustainability of urban farming. The main output of the research is to produce the comprehensive adoption model that enhances the social and economic well beings of elderly. Interviews were conducted with elderly. This research is to recommend the Government a policy framework to enhance the well-being of elderly to accomplish the sustainable development goals in ensuring that country's farming industry can accommodate current demand and self-sustain old age.

***Keywords— social entrepreneur, social innovation, urban farming, sustainability, elderly***

## I. INTRODUCTION

Malaysia is slowly becoming an ageing nation and the number is anticipated to grow to 5.5 million in 2021. The National Population and Family Development Board (LPPKN) highlighted that 30% of 2 million senior citizens, have been abandoned by their children. Hence the government is planning to assist these forgotten seniors through their own sustainable gardens in order to promote their economic, social and physical well-being (Cindy, 2019). Currently, although some elderly are actively involving in smart urban farming but they do not have support from society and are not familiar with the latest technology and innovation.

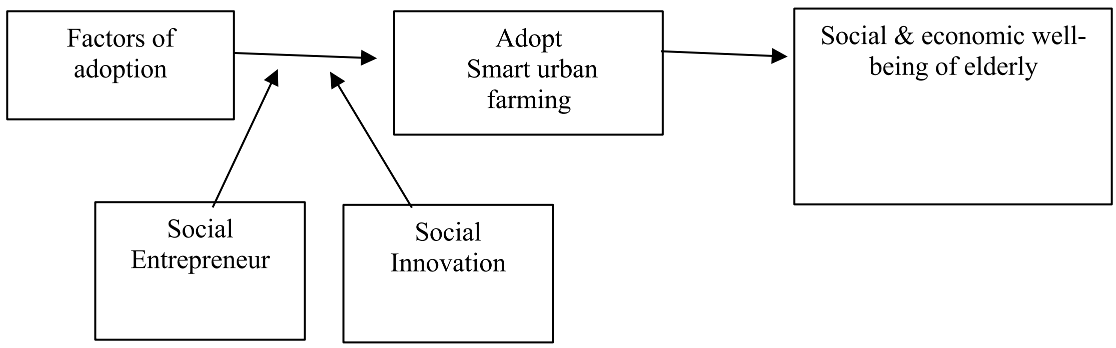
## II. LITERATURE REVIEW

Urban farming offers innovative, sustainable solutions for improving food security in cities, while at the same time helping to mitigate the environmental challenges facing cities. One way toward sustainable smart urban farming is through social implications, which is an irreplaceable function for problem-solving of sustainability. However, the question is whether a social innovation can be a sustainable model to meet the needs of urban farmers (Wang, 2017). Whereas, there is evidence that social entrepreneur plays an important role in achieving in social and environmental goals, the academic discourse on how this process will actually unfold has been scarce (Sanchita et al., 2019).

Agriculture 4.0 has already started and technological innovation is not new to agriculture (Frankelius et al., 2017). The idea of social innovation and social entrepreneur is therefore becoming increasingly popular in research and policy. In the light of increased policy attention, we should consider how smart urban farming can be socially responsible towards the fourth agricultural revolution. In order to do, it requires to develop, investigate and enhance responsible innovation framework that guides the adoption of smart urban farming among the elderly community.

## III. CONCEPTUAL FRAMEWORK

Framework: Adoption of smart urban farming Among elderly




## IV. CONCLUSION

This research paper examines the factors that impact the adoption of Smart Urban Farming among elderly and also to investigate the role of social innovation & social entrepreneur on the adoption of smart urban farming among elderly. This research contributes Government Policy implications from Elderly perspectives on smart urban farming that can be adopted as national wide successfully. This research output will enhance the social and economic the Well-beings of elderly.

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# PSYCHOMETRIC INVENTORY FOR ARTS CULTURE ENTREPRENEURS

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***Abstract***

Entrepreneurship training programmes (ETPs) are constantly seen as one of the potent ways in providing both upcoming and existing entrepreneurs with the essential entrepreneurial expertise. While various established segments of the entrepreneurs' community have successfully undergone such ETPs, there is also a greenhorn segment from the community of arts culture entrepreneurs (ACEs). However, the current ETPs training needs analysis (TNA) instruments are found to be too mainstream, overlooking the unique psychometric inventory of the ACEs; which makes the training process becoming less desirable. Therefore, this proposed research is going to updates and improvises the current entrepreneurial psychometric assessment by capturing the psychometric inventory of ACEs that are known to be distinctive as compared to the other entrepreneurs' community. This research is going to employ a mixed-method approach. The proposed main research output is the ACE-Psychometric Inventory test, which could be used as an additional TNA instrument before the ETP for ACEs.

***Keywords—arts culture entrepreneurship, psychometric inventory, mixed-method, entrepreneurship training, psychology***

## I. INTRODUCTION

Entrepreneurship training programmes (ETPs) are constantly seen as one of the potent ways of providing both upcoming and existing entrepreneurs with the essential entrepreneurial expertise. While various established segments of the entrepreneurs' community have successfully undergone such ETPs, there is also a greenhorn segment that coming from the creative industry community known as the arts culture entrepreneurs (ACEs). ACEs post a unique challenge for the ETPs provider as they are regarded as entrepreneurs community of a different breed. It is suggested that ACEs are mostly protean careerists who subscribe to the personal construction of career and possess strong intrinsic motivations for personal identification with career. Besides, they are more abstract-oriented, aesthetically driven, and often 'pushed' to entrepreneurship through necessity, and in many instances have a minimal natural inclination towards business ownership or commercial endeavours as compared to entrepreneurs from other fields.

Although, many efforts are recently made in conducting ETPs to the ACEs by the Ministry of Tourism, Arts and Culture (MOTAC) through Makmal Usahawan Seni and Young Arts Entrepreneur! it seems that advanced training modules should be put in the pipeline in helping the ACEs to sustain their business venture by considering the present volatile business climate. However, the current ETPs which are mostly based on the mainstream training framework have somehow overlooked the unique psychometric inventory of the ACEs as part of the trainees' profiling analysis. As such, there is a critical need to advance the current TNA instruments by the inclusion of the ACEs' psychometric inventory assessment into the TNA, so that the trainers could customise the training modules to be more purposeful and effective.

## II. LITERATURE REVIEW

The contemporary entrepreneurship training pedagogical practice needs to reflect on the concept of action (and being active) to stay relevant to its original cause (Hägg and Kurczewska, 2016). This can be done by keep improving the entrepreneurship training ecosystem, which includes empowering the unique community that pursues business ventures because of their passion for preserving the nature and environment. Particularly, the ACEs blend their artistic attitudes with a deep sense of business, which allows them to become economically sustainable yet in concordance with their cultural vision (Marinova and Borza, 2015). ACEs acknowledge arts as their mission (Klamer, 2011) and employ the entrepreneurial and managerial tools as a means to sustain the process of artistic creation. ACEs usually work in a constant tension between the artistic and economic logic of their life (Eikhof and Haunschild, 2007), thereby facing dilemmas that need to be resolved through a balancing act (Lampel et al., 2000). ACEs seem to retain the artist's integrity and protect themselves from the perceived negative influences of the business strategies by addressing their choices carefully. As a result, while managing their activity, they make choices that preserve the artistic sphere and its related values. Although this act seems to not immediately convenient in economic terms, as artists, they relinquish the need to work for the evolutionary development of the world of art by proposing new creations as a result of their artistic growth and consciousness. Meanwhile, as entrepreneurs, they must consider what the audience wants, but without deluding artistic morality.

Besides, the creative industry is known to have its business ecosystem, which focuses on the business networks that would constantly assemble and re-assemble its value chains to create new products and services. ACEs are often likely to be self-employed, and/or employed on a short-term contractual by project basis. In short, ACEs have a distinctive nature of career, which encompasses evolving patchwork as well as additional concurrent work activities as a supplement income option (Bridgstock, 2013). Best described as *"protean careerists*", ACEs' careers are typified by personal construction of career and strong intrinsic motivations for personal identification with a career, which resulted in a minimal opportunity for stable employment or progression as an employed careerist. Job is usually obtained via *"whom you know*" – through the informal social and professional contacts, because the offers are made on the idea of the prior job's quality and success, rather than formal application and interview processes (Throsby and Zednik, 2010).

## III. CONCEPTUAL FRAMEWORK

Calcagno and Balzarin (2016) postulate that ACEs psychological composition resides in the midpoint between the conditions deriving from the external context (push factor) and the embodied legacy of their artistic language (pull factor). In the former, caused by a persistent situation of crisis, leads by a combination of inadequate public funds and financial failure of unsuccessful management of enterprises, the external conditions then act both as limitations and as strengths; as limitations, they discourage the entrepreneurial attitude; while as strengths, they push ACEs to find a sustainable solution, contributing to the natural selection of the most motivated among them. In the latter, on the intrinsic viewpoint, the urgency to be creative, the desire of being independent and to be in total control of their own work, ACEs are pushed to learn how to sustain their artistic goals assuming an entrepreneurial and managerial habitus. While walking on the ambiguous borderlines between artistic vision and economic awareness, ACEs act to preserve the language of their artistic project both directly and by controlling their work in which they collaborate. Consequently, they would embrace the challenge as their usual condition of life, artistically and entrepreneurially. Therefore, by considering this unique psychological composition and put it in the context of TNA as well as being open about the other complementing factors, it seems clear that ACEs do have their own viewpoint on entrepreneurship as a career choice. More importantly, it differentiates the ACEs from the other entrepreneurs' community. A proper psychometric inventory that encapsulates the ACEs' unique attributes would firstly, allow the trainers to better understand the ACEs as their trainees and secondly contributes to the body of the literature of ACEs and entrepreneurship psychology.

Therefore, this research is going to employ a mixed-method approach of exploratory sequential design. The qualitative phase employs the Hybrid Delphi Method to source for unique ACEs personality items and the quantitative phase used the survey method to test the reliability of the new personalised psychometric inventory.

## IV. CONCLUSION

In conclusion, ETPs are here to stay in assisting various entrepreneurs' communities to develop and grow their business ventures. To advance, ETPs need to move away from the mainstream template and focus on developing a more customised template to tailor the unique need of a particular entrepreneur's community. As a start, TNA tools can be expanded. In the meantime, ACEs are known to be one of the communities that possess such distinctive psychological inventory and by looking at the emerging popularity of the gig economy in the career realm, it is timely to train them better. In improving the training deliverable, the inclusion of ACEs psychometric inventory assessment is suggested.

## ACKNOWLEDGEMENT

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# QALB ENTREPRENEURIALISM TOWARDS COLLECTIVE WELL-BEING

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***Abstract***

Many Muslim countries are among the poorest in the world and it was highlighted that there should be increased concerted efforts to drive entrepreneurialism so that they can leapfrog out from poverty towards a better quality of life. Locally, it was reported the number of poor among the muslim community is increasing. In Selangor alone, it was reported that asnafs of the fakir and miskin categories had increased from 2,207 families in 2016 to 46,500 families in 2017. The implication was that RM700 Million of zakat collection is needed to enable for the projected needed distribution of RM670 Million. Thus, call had been made by the leaders for new methods to enable the asnafs to climb out of the grips of poverty. What should leading muslim country such as Malaysia do to provide exemplary replicable solutions? Given the recently completed study that confirmed the determinacy of Qalb behavioral traits towards inclusive entrepreneurial intention. It is thus proposed that a key to the situation is to introduce Qalb Entrepreneurialism among the B40 asnaf in order to improve the resilience to enable the betterment of their situation and thus decrease the burden imparted on the Ummah; ultimately improving the collective well-being. This paper shares the preliminary findings on Qalb Entrepreneurialism amongst Muslim entrepreneurs.

***Keywords— Qalb, Entrepreneurialism, Asnaf, Resilience, Well-Being.***

## I. INTRODUCTION

When studying poverty among the muslim community Richards (2015) hypothesize “.there maybe something about the religion, not just the ethnic group, that is associated with poverty." Many Muslim countries in Asia and North Africa are among the poorest in the world and it was highlighted that there should be increased concerted efforts to drive entrepreneurialism so that they can leapfrog out from poverty towards a better quality of life.

Entrepreneurship is an important missionary in Islam. Islam encourages its believer to get involved in entrepreneurship because almost all prosperities come from a business. A Muslim entrepreneur is asked to always obey Allah, follow His orders of what has been stated in the Quran and Hadith. The strength of a Muslim is depending on the relationship between human beings and Allah (Hablu min Allah) and also all the honorable traits (Mahmudah) in an individual’s to reach the Al-Falah and not to mention, the relationship amongst human beings (Hablumin naas). The relationship between human beings and Allah is the most important and must come first before anything else as it is essential for a Muslim.

Hassan and Hippler (2014) compared entrepreneurship between the Islamic perspectives compared to Western perspectives. The difference can be gleaned from the understanding that the objectives of entrepreneurship in Islam are guided by the Maqasid Al-Shariah (Shehu, Ahmed, and Al-Aidaros, 2015). The salient traits are knowledge, initiative, risk-taking, customer orientation, employee involvement, strategic thinking, fear of Allah, hardworking, innovativeness, excellence, honesty and truthfulness, morality, vision, optimism, patience, social welfare, Halal earnings, and economical. (Hoque, Mamun, and Ahshanul, 2014).

The word heart holds meaning for a number of different things. To name a few, it could mean the organ that pumps blood in humans and animals, personality, intellect, compassion, love, affection, courage, or the most essential part of something. Some say that the centre of spirituality is the heart. The word heart in Arabic is often referred to as QALB. Literally, qalb means heart. It is a mudghah a physiological unit, a lump of flesh, an organ. Prophet Mohammed (SAW) describes it as an organ in the breast of man which if it is well, the entire being is well, and if it is not, the entire being is not. Based on the prophet's indication, the qalb is not just a physical organ but it is something like an electromagnetic field whose center is the heart. Furthermore, Qalb is also more than mere affection and emotion (Abdul Mutalib, Mohd Jailani, and Mahyuddin, 2015). Qalb should be anchored to the 4 principal virtues; justice, wisdom, courage, and temperance (Abdul Razak, 2016a). According to Mohd Jailani and Abdul Rahman (2016), Qalb values for leadership are; 1) Right and clear direction, 2) Visionary and foresight, 3) Wisdom and intelligence, 4) Openness and tolerance, 5) Trust and justice, 6) Transparency and integrity, 7) Accountable and responsible, 8) Loving and caring, 9) Transforming and collaborating, and 10) Balanced and sustainable. Researchers at the Centre for Academic Leadership, AKEPT (http://akept.mohe.gov.my/main/?event=al-101-qalb-based-leadership), has developed the Qalb behavioral traits using the Maqasid al-Shariah framework where there are 3 levels namely, necessities (daruriyyat), needs (hajiyat), and luxuries (tahsiniyyat) (Abdul Mutalib et al, 2015). According to Abdul Razak (2016b), Qalb is also applicable beyond the muslim world as Qalb is towards being balanced; justice is supported by wisdom, courage, and temperance. As leadership is an element of entrepreneurship, thus Qalb is also applicable for entrepreneurship studies.

Locally, it was reported the number of poor among the muslim community is increasing. In Selangor alone, it was reported that asnafs of the fakir and miskin categories had increased from 2,207 families in 2016 to 46,500 families in 2017. The implication was that RM700 Million of zakat collection is needed to enable for the projected needed distribution of RM670 Million[1]. Thus, call had been made by the leaders for new methods to enable the asnafs to climb out of the grips of poverty[2]. Generally, the government is placing emphasis towards transforming Malaysia into an Entrepreneurial Nation. For example, the Ministry of Higher Education launched the Entrepreneurship Action Plan 2016-2020 aiming to produce more job creators instead of just job seekers from the graduates coming out from the universities. Also, the government provides micro-credit facilities through TEKUN Nasional and Amanah Ikhtiar Malaysia together with entrepreneurship training to build the local entrepreneurship capital. More recently, the government had re-emphasized the commitment to this agenda when the Prime Minister envisioned Malaysia as a true entrepreneurial nation by 2030 in his speech during the launch of National Entrepreneurship Policy (Dasar Keusahawanan Nasional 2030) on 11 July 2019.

However, the earlier highlighted reports indicate a worrying trend not only locally but also globally. Thus, one questions what should leading muslim country such as Malaysia do provide exemplary replicable solutions? Given the recently completed study[3] that confirmed the determinacy of Qalb behavioral traits towards inclusive entrepreneurial intention. This study proposes that a key to the situation is to introduce Qalb Entrepreneurialism among the B40 asnaf in order to improve the resilience to enable the betterment of their situation and thus decrease the burden imparted on the Ummah; ultimately improving the collective well-being. This in line with the call made by the Department of Islamic Development Malaysia (JAKIM, 2016) and recent studies (Haq and Wahab, 2019; Yusof, Budiman, Mohd Amin and Abideen, 2019). In order to emphasize the merit of this argument, a preliminary study exploring Qalb Entrepreneurialism amongst Muslim entrepreneurs is discussed in this paper.

## II. METHODOLOGY

In this research, a case-study methodology is adopted (Eisenhardt, 1989; Yin, 1994). The case study methodology used can be traced back to the early 1900s when it was popularly used by the University of Chicago, Department of Sociology (Tellis, 1997). Zonabend (1992) stated that a case study is done by giving special attention to completeness in observation, reconstruction, and analysis of the cases under study. The case study is done in a way that incorporates the views of the "actors" in the case under study. A case study is a research strategy used when attempting to understand complex organizational problems; in essence allowing one to focus on something which is sufficiently manageable and can be understood in all its complexity (Moore, 1987). Yin (1994) also highlighted that the reasons for conducting case studies include explaining linkages between causes and effects, to describe a phenomenon in its own context, exploring an issue or a question, etc. The main methods for analysis in conducting case studies include triangulation and pattern matching. Triangulation for this study is achieved via methodological triangulation where multiple sources of data are used. This is done via the usage of several common types of case study sources of evidence as recognized by Stake (1995) and Yin (1994), namely; documents, archival records, interviews, direct observation, and participant observation. Face-to-face interviews using a semi-structured format will be the main data collection method to be used for this study along with document search and observation. Specifically, the preliminary study approached known muslim entrepreneurs via university entrepreneurship centres. Through a guided survey and interview sessions each entrepreneur was profiled in terms of their Qalb traits and entrepreneurship aspects. The aim is to generate findings on the importance of Qalb Entrepreneurialism in affecting resilience and shared or collective well-being.

1 https://www.malaysiakini.com/news/384323

2 https://selangorkini.my/2019/10/lzs-perlu- cari-kaedah-bantu-asnaf-keluar-daripada-kemiskinan/

3 Fundamental Research Grant Scheme Project No. FRGS/1/2017/SS03/MMU/02/10, Ministry of Higher Education, Malaysia

## III. RESULTS/FINDINGS

A total of 10 Muslim entrepreneurs took part in the preliminary study. 7 females and 3 males. Their Inclusive Entrepreneurial Intention score was determined as an indicator towards the overall propensity to contribute back to the community. Furthermore, the individual scores for their Darurriyyat, Hajiyyat, and Tahsiniyyat entrepreneurial traits, and Inclusive Innovativeness were determined. The Inclusive Entrepreneurial Intention score of the 10 cases range between 2.17 to 5.00. In terms of the independent variables, the maximum score for Darurriyyat is 4.88, Hajiyyat is 4.91, Tahsiniyyat is 4.80 and Inclusive Innovativeness is 5.00. Meanwhile, the minimum scores are 3.96 (Darurriyyat), 3.78 (Hajiyyat), 3.73 (Tahsiniyyat), and 3.00 (Inclusive Innovativeness). 7 out of the cases identified their Darruriyyat Traits as the main trait they identify with, 2 cases identified Hajiyyat Traits and the other case identified Tahsiniyyat Traits. All 10 cases indicated that they have moderate to high Qalb Behavioural Traits and Inclusive Innovativeness as none of them rated less than 3.00 mean scores for those dimensions. 9 out of the 10 cases indicated moderate to high Inclusive Entrepreneurial Intention. In the interview, the 1 case which showed low Inclusive Entrepreneurial Intention, when probed further actually showed rather high inclusiveness and expressed the desire to help "those unfortunate people as what NGOs do. Like producing jobs for them or something related to service more than products." In order to understand their motivations better, the line of inquiry was explored according to the 9 Islamic Entrepreneurial Traits. The 10 cases can be said to reinforce the earlier findings on the determinacy of Qalb Behavioral Traits towards the Inclusive Entrepreneurial Intention.

## IV. CONCLUSION

The findings suggest that when entrepreneurialism is not general entrepreneurialism but Qalb in nature, where increasing intensity means the movement from Darruriyat in nature towards Hajjiyat and ultimately Tahsiniyyat. The orientation or focus then will accordingly move from own self to become more inclusive of a close social circle to one's community and beyond (Mergaliyev, Asutay, Avdukic and Karbhari, 2019). Thus, we postulate that if acculturation of Qalb Entrepreneurialism is carried out with the asnafs, it will lead to them having high behavioral intentions to contribute back to the very community that had helped them. They will transform from being a burden that the rest of the Ummah need to assist, into becoming contributors towards the enhancement of the Ummah's well-being.

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# REVITALIZING STRATEGIES FOR ENTREPRENEURS DURING THE ONGOING COVID19

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***Abstract***

Entrepreneurs are facing enormous challenges before the pandemic took hold globally, and COVID-19 only exacerbated them. The Entrepreneurship Development and Cooperation Ministry (Medac) shared that a total of 32,469 small and medium enterprises (SMEs) have been forced to shut down their business during the first phase of the MCO from 18 March to 9 June 2020. Meanwhile, data provided by Entrepreneurship Development and Cooperation Ministry shows that micro-entrepreneurs were the most affected by the current economic condition. The purpose of this research is to develop efficacious strategies that can help entrepreneurs to survive and rebuild. Thus, on the theoretical framework researchers review the literature to focus on three areas; Respond, Rethink and Redraw. This research will adopt Dynamic Capabilities Theory (DCT) as the basis of the study's conceptual framework to explore effective strategies in developing and rebuilding plans for entrepreneurs during the ongoing COVID-19. As COVID-19 continues to impact business around the world, entrepreneurs have to embrace the 'new norms' of doing business. Supporting entrepreneurs to take recovery steps will be crucial as we want to rebuild and stimulate the economies. However, there are limited data specifically on the rates of failure of entrepreneurs in Malaysia due to COVID19.

***Keywords— entrepreneurs, strategies, rebuild, small and medium enterprises, and COVID-19***

## I. INTRODUCTION

Movement Control Order (MCO) 2.0 was announced by the government once again hit entrepreneurs which have been struggling since MCO 1.0 was implemented. Even in normal times, entrepreneurs hardly have cash that can help to run their business operations regularly. Hence, entrepreneurs need to adopt an aggressive approach to rebuild their businesses.

### Problem statement

Entrepreneurship is important in driving economic growth (Justin Doran, Nóirín McCarthy & Marie O'Connor,2018). According to the survey conducted by Organisation for Economic Co-operation and Development (OECD), the result shows that 43% of responding businesses are already temporarily closed. Based on several surveys in a variety of countries indicates that between 25% and 36% of small businesses could close down permanently from the disruption in the first four months of the pandemic. If this situation persists, it will adversely affect the national economy.

### Research Objective

1.To develop strategies for entrepreneurs to rebuild stronger business during the ongoing COVID19.
2. To assist entrepreneurs in responding, reviewing, and redrawing their business plans in order to restore it.

### Research Question

1. What strategies do entrepreneurs use to rebuild their business?
How entrepreneurs can respond, review and redraw their business during the pandemic?

## II. LITERATURE REVIEW

### Rebuild

COVID-19 pandemic is the most challenging global crisis with the ongoing rising cases and economic downturn. Entrepreneurs have started to face the possibility of being wound up and the recovery process is extremely important (Ruochen Dai et. al 2020).

### Entrepreneurs survival

Entrepreneurs survival is a fundamental outcome (Ronit, Eli & Susanna, 2020) of performance during COVID19. Challenges and risks in doing business have become an integral part of business activity and action to the issue could make the difference between survival and failure (Susanne, Mariano, and Guido 2020).

**Respond to Modernization**

Enhancing and expanding to digital channels is how entrepreneurs react to survive during the pandemic. Entrepreneurs need to implement changes; offline to online, that will make business more sustainable for the long term.

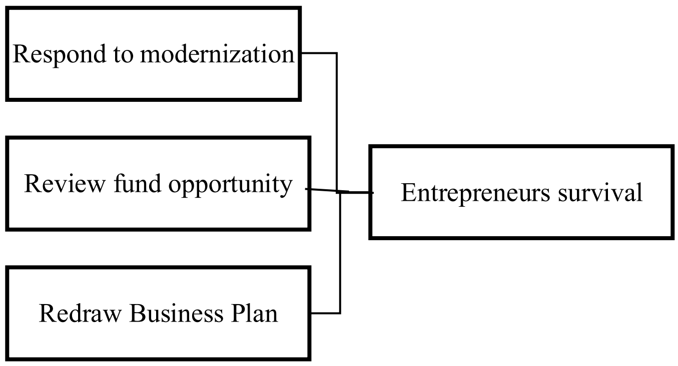
**Review Fund Opportunity**

The government and banking sector has provided a new approach to help broaden the finance options available to entrepreneurs such as Special Relief Facility (SRF) Covid-19, All Economic Sectors (AES) Facility, Micro Enterprises Facility (MEF). All the initiatives produced by Bank Negara Malaysia are to provide greater assistance to entrepreneurs in sustaining business as well as to support growth in current economic conditions.

**Redraw business plan**

In order to develop an agile business plan, Chris, Alex, Dawn and Eseoghene (2021) stated that planning has more benefits for experience entrepreneurs because they occupied with real data and history to support both the new business plan and the recovery process. The act of writing a business plan is correlated with success. Therefore, entrepreneurs need to revisit the budgeted amount for spends and revise the existing business model based on COVID-19 trend.

## III. CONCEPTUAL FRAMEWORK




## IV. CONCLUSION

To overcome entrepreneur's failure, effective recovery strategies can help entrepreneurs to rebound stronger.

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# SUCCESS FACTORS OF MICRO-FRANCHISE BUSINESSES IN MALAYSIA

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***Abstract***

The traditional franchise business normally requires a huge amount of investment that will only provide the opportunity to the middle and high-income group. However, micro-franchise which is based on the traditional franchise has proven to be a successful method of owning a business and contributes to positive economic growth for the low-income group. Malaysia has replicated the concept and launched the micro-franchise business in the year 2012 with the aim of giving low-income and poor people the opportunity to own a business with affordable start-up costs. Since then, the low-income group has embraced the micro-franchise business model as the source of income generation. While micro-franchising has been around in other parts of the countries for so many years, remarkably, very few studies on the micro-franchise business model have been published, let alone in Malaysia. Therefore, this research attempts to identify the success of micro-franchise business in Malaysia, particularly in the state of Selangor. This research employed an explanatory case study method, using the semi-structured interview to collect the data on 11 micro-franchise enterprises. The findings of this research have shown that low-income people are able to keep up and embrace the model successfully. Among the success factors highlighted were strategic location, brand reputation and credibility, strong marketing and advertising, a proven business model and standardization of products and services.

***Keywords—business, franchise, micro, model, success*** *(include up to 5 keywords)*

## I. INTRODUCTION

Micro-franchise has helped the low-income and poor people to climb out of poverty and it was suggested that micro-franchising could help people with a low educational background to get out of poverty much easier than the traditional business approach (Hürlimann, 2011). In Malaysia, The Ministry of Domestic Trade and Consumer Affairs has been actively promoting the micro-franchise business to B40 and even to M40 groups (Bernama, 2020). Micro-franchise is a subset or replication of the franchising concept, that distributed standardized products and services but on a small scale (Runde, 2016). Similarly, the franchise is "characterised by an ongoing business relationship between franchisor and franchisee which includes not only the product, service and trademark but the entire business format itself like a marketing strategy and plan, operating manuals and standards, quality control and continuous two-way communications. Micro-franchises exist within Bottom of Pyramid (BOP) rather than developed markets (Fairbourne, 2007) and the meaning of "micro" indicates the social environment of the business model that includes an ambitious objective on well-being and welfare of the micro-franchisee community in the rural area (Fairbourne et al., 2007).

Micro-franchising is a phenomenon that inspires the entrepreneurs at the bottom of the pyramid to have a greater opportunity in the business sector. It is a business model that meets the needs of small and medium-sized enterprises and is well accepted as a replicable business model (Christensen et al., 2010; Lehr, D, 2008) and have a systematic system such as a mentoring system and efficient operational concepts to be followed by those who want to engage in entrepreneurship especially those who live in subsistence market. While micro-franchising has been around in other parts of the countries for so many years, remarkably, very few studies on the micro-franchise business model have been published, let alone in Malaysia. Therefore, this research attempt to identify the success of micro-franchise business in Malaysia, particularly in the state of Selangor

## II. METHODOLOGY

This research employed an explanatory case study approach, with an in-depth semi-structured interview method for data collection. The research participants consisted of 11 micro-franchise business owners who have been involved in the food and beverage business for more than 2 years. Food and beverages are a highly demanded sector in Malaysia with almost 60% making up the majority of the franchise business model (Malaysia Franchise Association, 2019). This justified the selection of the research participants, all of whom were from food and beverage background. The interviews are audio-recorded and transcribed verbatim for analysis. Content analysis is used to interpret, code, and assign a theme to the data.

## III. RESULTS/FINDINGS

Research has shown that there are several factors that contribute to the success of the micro-franchise business. Successful factors include strategic location, brand reputation and credibility, strong marketing and advertising, proven business model and standardization of products and services.

## IV. CONCLUSION

The success factors of the micro-franchise business show the business owner's ability to embrace the micro-franchise business model even though the fact that the model is still new in Malaysia. The ability to adopt the micro-franchise business model among the entrepreneurs also indicates that the government of Malaysia is supporting the micro-businesses by providing them with the opportunity to run and own a business through a replicable business model. The success factors implied that the micro-franchise business model is simple to operate, easy to understand, feasible and able to generate profits for the business.

## ACKNOWLEDGEMENT

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# STRATEGIC MANAGEMENT AND ECOSYSTEM BUSINESS

# A STUDY ON THE LEVEL OF COMMITMENT TO CHANGE AND CHANGE-RELATED BEHAVIOUR AMONG ACADEMICS OF MALAYSIAN ISLAMIC HIGHER LEARNING INSTITUTIONS

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***Abstract***

Implementing change in higher learning institutions is very much needed in today's challenging environment. The purpose of this paper is to determine the link between the academics' level of commitment to change and change-related behaviour. It explores the basis of reciprocity through the application of the Social Exchange Theory (SET). The study was conducted among academics of selected Islamic higher learning institutions in Malaysia. Data obtained from the survey were analysed using PLS-SEM. The results of the study indicated that the academic level of affective commitment to change has an impact on all three dimensions of change-related behaviour while continuance commitment to change only impacted compliance and cooperation. Results also indicated that normative commitment to change did not have an impact on the academics' change-related behaviour. The application of SET would be able to provide the universities' management teams with strategies on how to facilitate changes in the organisations. Based on the results obtained, it can be seen that the commitment to change among academics' is the basis of change-related behaviour and knowledge of this would be able to enhance the management teams' in managing change.

***Keywords—commitment to change, change-related behaviour, Social Exchange Theory, academics, higher education***

## I. INTRODUCTION

Change is no longer a choice in organisations if they want to continue to survive and sustain in this competitive world. Organisational change has affected many industries and the education industry has not been spared. The need for change in Malaysian public universities has become unavoidable as universities struggle to compete in the ever-changing environment and the pressures to remain relevant. Generally, one of the major concerns of organisations in ensuring successful change implementation is obtaining employees' commitment to change (Gigliotti, Vardaman, Marshall, & Gonzalez, 2018; Hechanova, Caringal-Go, & Magsaysay, 2018) as this has been proven to have influenced positive behaviour towards change (Allaoui & Benmoussa, 2020). Employees who are committed to change will less likely resist change subsequently resulting in positive behaviour towards change as a whole (Zappalà, Toscano, & Licciardello, 2019).

Realising the importance of commitment to change in facilitating the desired outcome of change, this paper studies how the three different dimensions of change: affective, continuance, and normative, affect change-related behaviour of academics in selected higher learning institutions. This study specifically looks at the three dimensions of change-related behaviour as determined by Herscovitch and Meyer (2002).

## II. METHODOLOGY

Questionnaires were distributed to academics from various faculties in three Malaysian Islamic public universities. Survey links were sent via email to 300 academics. Out of the 300, a total of 167 answered the questionnaire with a total of 55.6% response rate. However, 38.3% of the respondents did not meet the criteria of being in the university for above five years. The responses from these participants were therefore excluded from the study which resulted in the final sample size of 103. Since the questionnaire was conducted online, there were no issues with missing data.

The survey made use of the 5-point Likert scale (1=strongly disagree; 5=strongly agree). Measurements for commitment to change was adapted from Adil (2016) and Herscovitch and Meyer (2002) while measurements for change-related behaviour were adapted from Herscovitch and Meyer (2002). Data collected was analysed using PLS-SEM.

## III. RESULTS/FINDINGS

Based on the analysis of the results, it was discovered that only two out of the three dimensions of commitment to change had an impact on the academics' change-related behaviour. Both affective and continuance commitment to change was discovered to have relatively significant impacts on change-related behaviour. Normative commitment to change however was discovered to have not had an impact on change-related behaviour. Results indicate that when academics truly believe that change will benefit them, they will display positive behaviour towards change and project behaviours that are directed towards championing, cooperation and compliance. Academics who believe that the cost of changing is greater than the cost of resisting change would display behaviours that are associated with compliance and cooperation only. Normative commitment to change however did not have any significant impact on all the three dimensions of change-related behaviour.

## IV. CONCLUSION

All in all, this study provides researchers and practitioners with an insight into the importance of ensuring the employees remain committed during the process of organisational change to obtain positive change related behaviour. Specifically, this study looked at the three individual dimensions of both commitment to change and change-related behaviour. The understanding and application of the framework provided in this study would enable employers to develop extensions on how to better prepare and strategize for change in future. This study also provides an insight into how change is managed in higher learning institutions in Malaysia. It would also equip universities with the information needed to successfully implement change in the higher learning education industry in general.

## ACKNOWLEDGEMENT

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# ADOPTION INTENTION OF FINTECH PRODUCTS AND SERVICES IN KSA.

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***Abstract***

This study attempted to find out the factors that affect bank customer adoption of financial technology (FinTech) products and services by extending the technology acceptance model (TAM) in the Kingdom of Saudi Arabia context. The online survey was conducted to collect information on demographic factors and their intentions to adopt FinTech product and services. 300 responses were gathered and their intention to adopt FinTech product is measured by using five Likert Scale to which respondents were required to indicate their agreement or disagreement on perceived ease of use (PEoU), perceived usefulness (PU), social influence (SI), and security concern (SC). The result shows that PU and SI are significant and have a positive relationship towards the consumer acceptance of FinTech products and services. The findings from this would be valuable to policymakers in Saudi Arabia by helping them to determine the variables that have a significant effect on the process of adoption and establish some future potential guidelines for FinTech firms to boost their intention to embrace FinTech in the Kingdom of Saudi Arabia.

***Keywords—FinTech, TAM, Saudi Arabia, adoption, attitude.***

## I. INTRODUCTION

The main motivation driver for innovators in the FinTech space in Saudi Arabia is the government's efforts to move toward a cashless economy and to ensure a diversified economy. In fact, through its Vision 2030 initiative, the government's target achieving 70% non-cash transaction by 2030. However, FinTech is quite new in Saudi Arabia and the adoption of FinTech products such as mobile money wallet and digital payment is still low with only around 20 per cent of the country's total transactions. This means that the country's Fintech industry is still young and to succeed the bank and other organisations need to define a clear FinTech strategy that aligns with the government Vision 2030 initiative.

Therefore, this paper aims to examine and understand the factors that affect customer adoption of financial technology (FinTech) products and services in the Kingdom of Saudi Arabia. In this study, the technology acceptance model (TAM) was employed to determine attributes affecting the adoption of Fintech in Saudi Arabia perspective. TAM is chosen to use in this study because it has been the most widely researched theoretical framework used to predict and explain the individual adoption of new information technology or an information system. The result of the study will help IT vendors and policymakers to better understand the FinTech usage pattern and determine the variables that have a significant effect on the process of adoption. The study will also contribute to the understanding of FinTech adoption and usage in the Kingdom of Saudi Arabia.

## II. METHODOLOGY

The data for the study were collected from bank customers through online questionnaires. The survey collected data on the respondents' demographic factors such as gender, age, academic achievement level, monthly income and use of the FinTech. Intentions to adopt FinTech were measured using five Likert scales to indicates their agreement with the statement on perceived ease of use (PEoU), perceived usefulness (PU), social influence (SI), and security concern (SC). Data collected were analysed using a statistical package of the social sciences (SPSS) for doing various statistical analyses such as descriptive analyses, reliability analysis and regression analysis.

## III. RESULTS/FINDINGS

Out of the 300 respondents, the majority are male 74.3%, aged between 18 – 25 (44%), bachelor's degree holders (60.7%) and monthly income more than SAR 6000 (33.3%). The reliability analysis was tested using the Cronbach Alpha Model. The result overall value is 0.715, which is higher than 0.6 indicates an acceptable level of reliability used in this study (Sekaran 2000). The regression analysis result discovered that only two out of four independents variables had a significant impact on intention to adopt FinTech product. Both SI and PU were discovered to have a positive relationship on FinTech product and services adoption, whereas PEoU and SC are not significant with the intention to adopt and use FinTech.

## IV. CONCLUSION

The objective of this study is to examine the factors that affect customer adoption of FinTech products and services in the Kingdom of Saudi Arabia by using TAM. The findings of this study indicate that social influence and perceived usefulness are found to be the key determinant that affect the intention to adopt FinTech. This result refers to the fact that social influence will affects the adoption of FinTech because an individual is easily influenced by people around them especially towards the new or unfamiliar technology. In the absence of own experience, people will seek the opinion from others about the characteristic and the advantage of the technology (Shubhangi Singh et al, 2020). Perceived usefulness is significant and positively influences the intention to the adoption of FinTech was based on the assumption, that the better understanding of the system; the more probably they will be using the system (Selamat et al, 2009). The findings from this study would be of valuable to policymakers in Saudi Arabia by helping them to determine the motivation for the adoption of FinTech and establish some future potential guidelines for FinTech firms to boost their intention to embrace FinTech in the Kingdom of Saudi Arabia

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Shubhangi, S, Marshal, M.S, Raj, K.K (2020), What drives FinTech Adoption? A Multi-Method Evaluation Using an Adapted Technology Acceptance Model Management Decision Vol. 58 No. 8, 2020. p. 1675-1697

# AN ANALYSIS OF PERCEIVED QUALITY, BRAND IMAGE, AND CUSTOMER SATISFACTION TOWARDS REPURCHASE INTENTION AND CUSTOMER LOYALTY OF Z GENERATION IN INDONESIA

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***Abstract***

PT Standardpen Industries always conducts product development and innovation, this is done to expand the market and product segmentation. In 2015, PT standardpen Industries launched a product called Twillo, twillo is a marker writing tool category that has the characteristic of having 2 nibs (dual tip) which adjusts the desires of consumers with various and attractive color variants. This research examines the extent to which Z Generation has responded to perceived quality, brand image, and customer satisfaction on repurchase intention and customer loyalty to Twillo products from PT Standardpen Indutries. This study used 400 respondents chosen through the purposive sampling technique. The valid and reliable data were analysed by Smart PLS 3.5.3. The results revealed that perceived quality and customer satisfaction have positive effect on repurchase intention and customer loyalty. However, Brand Image has no significant influence on Customer Loyalty. Based on the results of this study, to make Z Generation more loyal toward Twillo products, PT Standardpen must increase its online and offline marketing activities. Created social media content about twilio products and choose the right influencers who can attract engagement on social media aimed at increasing repeat purchases.

***Keywords— perceived quality, brand image, customer satisfaction, repurchase intention, customer loyalty***

## I. INTRODUCTION

During the last 4 years after launching products from Twillo, PT Standardpen Industries has been very massive in creating activities and campaigning for products from Twillo. Researchers try to see the extent to which consumers see Twillo's products in terms of the PT Standardpen Industries brand, the following can be mapped and seen how consumers choose and have the intention to buy Twillo products from Standardpen.

The selection of objects with the Z generation group segmentation is considered to be the basis of the company's current goals. Generation Z has unique characteristics and can greatly help companies, especially PT Standardpen Industries, to always develop and innovate. In addition, the characteristics of generation Z which are very attached to gadgets can help and influence other consumers to be interested in using and recommending products coupled with massive brand marketing activities, supported by an online campaign and offline activities that support the brand. Especially for Twillo from PT Standardpen Industries.

## II. LITERATURE REVIEW

During the last 4 years after launching products from Twillo, PT Standardpen Industries has been very massive in creating activities and campaigning for products from Twillo. Researchers try to see the extent to which consumers see Twillo's products in terms of the PT Standardpen Industries brand, the following can be mapped and seen how consumers choose and have the intention to buy Twillo products from Standardpen.

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## III. CONCEPTUAL FRAMEWORK

The test results obtained were dominated by significant positive results. The variable that has the lowest proportion of respondents' responses is the brand image variable on customer loyalty. This relationship can indicate that although the image shows a good coefficient value, it does not necessarily show a significant causal relationship between brand image and customer loyalty. Researchers have found that the aspects regarding consumer loyalty to brand image of Twillo from 5 cities the loyalty representation is formed on demographics, product availability, and online and offline marketing activities held by each city have not been maximized. This is also supported by the brand supervisor from Twillo itself, who stated that Twillo's products should increase online and offline marketing activities more massively so that Twillo can improve its brand image to build consumer loyalty. Although customer loyalty may not reflect customer loyalty (actions), based on the journal of Godfrey, et al (2005) stated that "*The decision to repurchase represents of customer's loyalty decision to engage in continuous consumption of the product".* And surprisingly for this test results have found that repurchase intention indicates the loyalty of the product with a path analysis value of 0,405.

## IV. CONCLUSION

The model in this study produces an R Square of 0.68. These results indicate that the model has strong explanatory power. Based on the results of these findings, further research can use this model on stationary objects with other stationery products. Furthermore, it can also use a more varied expansion of variables as well as an extension of the subject and object of research that can be relied on to measure the consistency of answers.

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# AN INVESTIGATION INTO THE ADOPTION OF INTERNET BY THE ELDERLY IN IRAN: IMPLICATIONS FOR INTERNET MARKETING COMPANIES

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***Abstract***

The usage of the internet by the elderly has been linked to several positive impacts which all lead to an improvement in their daily lifestyle however, the usage of the Internet among the elderly people is few. In Iran population is increasing with estimates projecting more than 20% to be above sixty years of age by 2050. This study aimed to survey 218 elderly users and non-users of the internet in Iran to explore which factors act as barriers to use the internet while which ones act as motivation factors to use the Internet among the target population. The 6Cs framework was employed to further understand the dynamics of internet use while a modified model of UTAUT in the Iranian context is determined. Internet adoption and use of technology among elderly people is a topic of intense interest for marketers, policymakers and researchers. Adoption rates in the group of elderly consumers, understanding how they adopt technology and use digital content is becoming important to marketers. The findings are presented in a new conceptual model to help policymakers, Internet provider companies, businessmen, and researchers to understand the motivations behind internet use to encourage further usage.

***Keywords— Elderly, Iran, UTAUT, Internet Use, Policy market, Marketing***

## I. INTRODUCTION

The use of digital content facilitated by the use of the internet can improve the quality of elderly life and help the elderly to feel engaged and be employed in mentally and socially stimulating activity and make them feel useful (Mellor et al., 2008). This study aims to assess the barriers and facilitators for the use of the internet for the elderly in Iran to help policymakers and Internet provider companies. The ultimate aim of this study is to create a conceptual model based on the Unified Theory of Acceptance and Use of Technology (UTAUT) by Venkatesh, Morris, and Davis (2003) which is one of the most popular and widely applied theoretical models to assess the adoption of technology among an identified population.

## II. METHODOLOGY

This research has used a mixed methodology where both quantitative and qualitative results were analysed to explore the factors found pertinent by the elder population in Iran for influencing their choice to use the internet. The 6Cs framework Glaser (1978) was employed to explore the relationships between variables to understand why and how of the factors that are contributing to the use and non-use of the internet.

## III. RESULTS/FINDINGS

The results of the quantitative questionnaire survey revealed the factors that are significantly related to internet use by the elderly population of Iran. These factors included the affordability of services, effort and performance expectancy, and social influence. The 6Cs framework by Glaser (1978) was employed to further explore that have indicated the relationship between the identified causes of using or not using the internet is complex as it takes certain variables like social influences and facilitating conditions to be given while focusing more on effort expectancy and affordability.

## IV. CONCLUSION

Behavioural intention to use the Internet and digital content by the elderly people in Iran does follow the UTAUT model's variables. By showing that performance expectancy, effort expectancy, social influence, affordability of devices and services, and the facilitating conditions and knowledge sharing are all related to their behavioural intention whether through quantitative results found significant or through a majority opinion seen in the interviews, this study has reiterated that multiple factors affect the decision to use the internet among the elderly. The wider impact of this study is that Policymakers and marketers must consider the effort of service and having knowledge are the factors that influence the behavioural intention to use the Internet among the elderly. Policymakers and internet service providers are recommended to use the insights of this study for educating the non-users about the ease of using the internet, the affordability of devices and services, and the uses that it can be put to.

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# ANALYSIS OF THE USE OF SOCIAL MEDIA ON THE PERFORMANCE OF WEST JAVA MSMEs

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***Abstract***

With social media, micro, small and medium enterprises (MSMEs) can disseminate information at a relatively low cost. The ability to share, communicate and access information can affect business performance, but currently, there are only a few studies on social media usage on business performance, especially MSMEs. This paper aims to present a quantitative examination to further study the factors that have effects in the use of this social platform in MSMEs in West Java and their effects on company performance. This study uses a TOE framework that combines elements of technology, organization and the environment that affect MSMEs in the usage of social media. This research will be conducted on 300 respondents who are MSMEs business in West Java. Questionnaires will be distributed to obtain data from respondents, then the data obtained will be processed, analyzed using SPSS software with the path analysis method. The use of social media has an effect on the performance of MSMEs. These findings will serve as assistance as the managers and decision-makers in the MSMES sector in following studies on social media latest trends and providing them benefits to be known widely.

***Keywords— social media, business performance, small and medium enterprises (MSMEs), technology adoption***

## I. INTRODUCTION

Nowadays, social media has become a communication trend. Social media can be defined as an online platform used by users with easy access, interaction and share. According to data obtained by We Are Social, from 2015 to 2016 there was an increase of around 15% of internet users in Indonesia. This increase was dominated by the use of social media which is now very commonly used. According to research by Tajvidi and Karami (2017), in the last two decades social media has played a very important role in business performance.

This research was conducted to determine whether the use of social media can affect business performance in MSMEs in West Java. It is hoped that in the future this research can provide an overview of MSME actors in utilizing social media.

## II. LITERATURE REVIEW

According to Van Dijk (2013), the use of social media is an activity through online platforms used by each other where users can easily interact, share, virtually without limitation of space and time. To measure a technology adoption by a company, it can use the Technology Organization and Environment framework or widely known as TOE Framework. In 1990, Tornatzky and Fleischer developed this structure. Technological aspects, organizational aspects, and environmental aspects are the three aspects that will be assessed through the TOE framework. Almajali (2012) defines that company performance as a measure of what the company has achieved which shows the condition of the company at a certain time.

According to research by Rienda et al. (2020) stated that the fashion industry MSMEs in Ireland can improve their performance by using social media. Similar results were obtained from the research conducted by Tajvidi et al. (2017) who introduced that social media usage has a constructive and significant impact on the business performance of MSMEs in the industry in the United Kingdom. Akmese et al. (2016) conducted research on the use of social media with the results which stated that the utilization of social networks in tourism companies had a positive effect on the company's financial performance. In addition, Ainin et al (2015) stated performances of MSMEs in Malaysia, both financially and non-financially, have increased with the application of the Facebook platform.

## III. CONCEPTUAL FRAMEWORK

This study uses the TOE framework to identify things that affect social media usage. Also measures the influence of social media use on the performance of MSMEs in West Java. Measuring the use of social media will apply the TOE framework which includes technological aspects (compatibility, relative advantage, trialability, observability, complexity,), organizational aspects (management support), environmental aspects (competitive industry, bandwagon pressure, competitive pressure). Performance measurement will be measured from two aspects, namely financial aspects (profitability, growth, market value) and strategic aspects (employee satisfaction, and social performance, environmental performance, customer satisfaction).

## IV. METHODOLOGY

This research uses quantitative research methods with descriptive research types. This study has an unlimited population because the population is erratic and continues to increase from time to time. The population in this study were MSMEs in West Java. The sampling technique used in this research is nonprobability sampling using incidental sampling. This study has a very large or unlimited population with an error rate of 10%, so based on Isaac and Michael (1981) the required sample is 272 respondents, then rounded to 300 respondents. A total of 30 respondents have been tested for validity and reliability before the commencement of this study, respondents agreed that this survey is understandable and not difficult to fill out, so there is no need for additional revisions. The method used in this research is path analysis. To test the hypothesis using the t-test.

## V. CONCLUSION

This research studies the influence of using social media on the performance of MSMEs in West Java. The results showed that this social platform usage has an impact on business productivity. Technological and environmental aspects significantly determine the use of social media in MSMEs in West Java. Meanwhile, the organization has little control over the use of social media at MSMEs in West Java. In the future, this research is expected to provide an appropriate background for additional research.

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# BRIDGING HOUSEHOLD INCOME GAP

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***Abstract***

Malaysian household is categorized into three groups of households, which is the bottom 40%, middle 40%, and top 20% of the household income distribution. These groups are cut-off points of the household income levels for the 7.3 million households. The mean household income gap between these three groups has increased over the past 20 years. This study attempts to bridge the gap between the groups of households (B40, M40, and T20) with mean income disparity. The panel data for each household income group for every state in Malaysia is estimated using the Fully Modified Ordinary Least Square (FMOLS) model. The findings suggested that physical capital, human capital, and technological progress would positively relate to the income gap of the B40-M40 and B40-T20 groups of households.

***Keywords—*** *Household Income, B40, M40, T20, FMOLS*

## I. INTRODUCTION

The income gap between groups of households has led to slow and weak economic growth, weakens the progress in education and health, and raise economic and political instability that will lead to investment reduction (KRI Report, 2014). Furthermore, the income gap also has an impact on children's quality of life, the psychological state (low self-esteem and depression) among children will increase in a community (Ho, Li, & Chan, 2015). The influence of the income gap has immersed into households' decisions and planning system as well. In other words, the household becomes pessimistic about the economic condition and unable to have a well-organized spending plan (Mahdzan, Zainudin, Sukor, Zainir, Wan, 2019). The purpose of this study is to examine the effect of physical capital, human capital, and technological progress on household income.

## II. METHODOLOGY

This study employed the panel data for each household income group for every state in Malaysia to estimate the Fully Modified Ordinary Least Square (FMOLS) model. The FMOLS estimation model investigated the long-run and short-run relationship between physical capital, human capital, technological progress, and household income gap in Malaysia for the period from 1999 to 2019.

## III. RESULTS/FINDINGS

The result shows that a short-run and long-run relationship is running from physical capital, human capital, technological progress towards the income gap across 3 groups of households.

## IV. CONCLUSION

All of the independent variables influence the household income gap in the short run and long -run. A policy recommendation to promote investment in human capital is the most crucial part of all. A policy that creates an awareness program on the importance of the pursuit of higher learning education and as well as raising a high-quality standard of education is essential. This is one of the means of reducing the household income gap from a macro level point of view.

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# BUMIPUTERA EQUITY OWNERSHIP AND VALUE RELEVANCE WITHIN THE INTEGRATED REPORTING FRAMEWORK

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***Abstract***
This study aims to examine the effect of the disclosure of information about Bumiputera equity ownership on the value relevance of the Malaysian companies' corporate information within the Integrated Reporting Framework. Data were collected from 2012 and 2015 annual reports of 603 companies that were listed on the Main Market of Bursa Malaysia. The results demonstrate that for 2012, the organizational overview and external environment, total assets, EPS and BV have significant effects on the value relevance of corporate information of the companies. On the other hand, for 2015, the disclosure of information regarding Bumiputera equity ownership, organizational overview and external environment, company's outlook, the basis of presentation, total assets and BV are found to significantly affect the value relevance of the companies' corporate information. The findings offer evidence pertaining to the potential impact of information related to the integrated report content elements and Bumiputera equity ownership on the value relevance of corporate information in Malaysia.

***Keywords— Bumiputera ownership, Integrated Report Framework, Integrated Report Content Elements, Value Relevance, Malaysia.***

## I. INTRODUCTION

Companies are facing an evolution in corporate reporting where a more effective mode of communicating relevant corporate information to the stakeholders is required. In this new form of corporate reporting a more comprehensive information is required. This information should be not only financial but also non-financial information. The International Integrated Reporting Council (IIRC)(2013) recommends an integrated reporting to fulfil the needs for such inclusive information. The IIRC had taken the initiatives to promote the adoption of an integrated report (IR) by establishing The International Integrated Reporting Framework (IR Framework) in 2013. The IIRC (2013) states the aim of an IR, among others, is to encourage a more cohesive and efficient method to corporate reporting. This method draws on different reporting strands and communicates information that materially affects the ability of an organization to create value over time. The IR Framework presents eight content elements of an IR, namely, organizational overview and external environment; governance; business model; risks and opportunities; strategy and resource allocation; performance; outlook; and basis of presentation. In Malaysia, the number of companies adopting IR is still low. In some instances, although information associated with the IR content elements are reported by the companies, however, they are not integrated (PwC, 2014; Balasingam, Arumugam & Hui, 2019). The Eleventh Malaysia Plan (2016-2020) aims at achieving 30 per cent Bumiputera corporate equity ownership by 2020. Although the objective is not yet achieved based on the current reported data as per 2015 (Seksyen Penyata Rasmi, 2020), this study aims to investigate does the information on Bumiputera corporate equity ownership play a significant role within the IR Framework in enhancing the value relevance of corporate information.

## II. METHODOLOGY

A secondary data collection was adopted where an examination was made on 2012 and 2015 annual reports of companies listed on the Main Market of Bursa Malaysia. After excluding companies in the financial sector and those with incomplete information, a total of 603 companies were used in this study. Although the IR Framework was issued in late 2013, the IR work had already started in 2010. Hence, there may be a few companies that have taken the initiatives to report some information associated with the IR Framework content elements. Therefore, the annual reports for 2012 served as data source prior to the issuance of the IR Framework, while the 2015 annual reports served as data source post-issuance of the IR Framework. The exclusion of 2014 because a normally one-year transitional period is given to companies for adopting the new standard. The same rule was applied in this study assuming that a grace period of one year is specified for companies to be familiar with the requirements of the IR. Two-panel data, i.e. (i) pre-issuance period of the IR Framework; and (ii) post-issuance period of the IR Framework were established in this study.

## III. RESULTS/FINDINGS

Results of the multiple regressions for 2012 shows that the variables (BUMI, Element 1, Element 2, Element 3, Element 4, Element 5, Element 6, Element 7, Element 8, LOGTA, LEV, ROE, EPS and BV) statistically significantly predicted VALUEREL at $F(14,588) = 25.976$, $p = 0.000$, $R^2 = 0.382$, adjusted $R^2 = 0.367$. The variables explain 36.7% of the variability of the VALUEREL and the model is a good fit for the data. The coefficients results indicate that for 2012, Element 1 (organizational overview and external environment), LOGTA, EPS and BV are statistically significantly affected the VALUEREL at p = 0.075, 0.018, 0.000 and 0.015 respectively. Nonetheless, the effect of Element 1 on the VALUEREL is at beta = -0.095 denoting that the higher the level of disclosure of information related to organizational overview and external environment, the lower would be the value relevance of the corporate information. Meanwhile, BUMI, Element 2, Element 3, Element 4, Element 5, Element 6, Element 7, Element 8, LEV and ROE are not statistically significantly affect the VALUEREL. The positive effects of the control variables; LOGTA, EPS and BV; on the value relevance of the companies' corporate information are consistent with the literature (e.g. Kargin, 2013).

For 2015, results of the multiple regressions shows that the variables (BUMI, Element 1, Element 2, Element 3, Element 4, Element 5, Element 6, Element 7, Element 8, LOGTA, LEV, ROE, EPS and BV) statistically significantly predicted VALUEREL at F (14,588) = 10.417, p = 0.000, $R^2 = 0.199$, adjusted $R^2 = 0.180$. The variables explain 18% of the variability of the VALUEREL and the model is a good fit for the data. The coefficients show that for 2015, BUMI (Bumiputera equity ownership), Element 1 (organizational overview and external environment), Element 7 (company's outlook), Element 8 (basis of presentation), LOGTA and BV are statistically significantly affected the VALUEREL at p= 0.041, 0.023, 0.085, 0.079 and 0.000 respectively. However, the effect of Element 8 on the VALUEREL is at beta = -2.159 denoting that the higher the level of disclosure of information related to the basis of presentation, the lower would be the value relevance of the corporate information. Meanwhile, Element 2, Element 3, Element 4, Element 5, Element 6, LEV, ROE and EPS are not statistically significantly affect the VALUEREL. The positive effects of the control variables; LOGTA and BV; on the value relevance of the companies' corporate information are consistent with the literature (e.g. Kargin, 2013).

## IV. CONCLUSION

Results show that after the establishment of the IR Framework, the disclosure of information on Bumiputera equity ownership and information related to two IR content elements namely organizational overview and external environment, and the company's outlook have significant positive effects on the value relevance of corporate information. These findings offer some insights about the potential positive impact on the companies' value if IR is adopted. Further, the positive effect of the disclosure of Bumiputera equity ownership information is expected to encourage possible action from relevant parties to attain the government's policy in increasing Bumiputera corporate equity ownership, which subsequently enhances the companies' value. When companies' value is enhanced this may attract more investors. This study recommends that the adoption of IR may be enhanced by promoting and enlightening the corporate reporting community by means of a professional seminar by the relevant professional accounting bodies. Future research may be conducted to examine the possible need for assurance services on IR.

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# CAN IT PROJECT SUCCEED THROUGH THE AGILE PROJECT MANAGEMENT PROCESS?

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***Abstract***

The agile project management process (APMP) is replacing the conventional development process and has become an important contribution to the IT industry. The aim of the current research study is to assess the roles of APMP on IT project success. While doing so, the intermediatory roles of the collaborative team and the project size are also taken into consideration. This quantitative research proposes to collect data from around 250 IT project stakeholders spread throughout Malaysia, using a systematic proportionate non-random sampling. The research framework has been formulated and the instrument design to collect data is in progress. The data so collected will be analyzed using descriptive statistics and path modeling. The latest versions of SPSS and PLS-SEM will be used to analyze the data. The absence of the research will be theoretically contributing to the project management domain. The practical contribution will make the IT companies understand the importance of moving towards the APMP and the role of collaborative teams.

***Keywords— agile project management practices, project success, collaborative team, project size, IT industry***

## I. INTRODUCTION

Globalization, advancement in technology, innovative products, and services, new rules and policies offer the organizations the to venture into a project-based organizational structure (Elham Soltani, 2020). Projects become the strategic options for the organization in the rapidly changing business environment. Past research proved that despite the developments in project management processes, the managers were still finding it difficult to finish the project successfully. The introduction of the agile approach in the IT industry has played a major role in increasing success rates, especially in software development projects. However, there is a lot of scope for improvements in studying the agile process in detail with a focus on project success (Carlos Tam, et al, 2020).

The main aim of this research is to investigate the relationship between the agile project management process and project success. Nevertheless, the studies which studied the role of a collaborative team towards project success are very few. Therefore, the main contribution of the research is to get empirical evidence for the conceptualization of the relationships between agile project management process, collaborative teams, and IT project success.

## II. LITERATURE REVIEW

The development of information and communication technologies integrates many processes which are managed by ICT architecture. Proper implementation of the processes decides the success of the projects (Iwona Kolasa et al, 2020). An IT project is considered successful if it is able to meet its goals. It is vital for all IT projects. The project's success is a multidimensional dependent work. Many research undertaken has increased the success rate of software projects using agile management practices. Still, there is a need for improvement and to adopt for organizational use (Carlos Tam et al, 2020).

Software may be developed by several alternative paths. Many of the paths may be more complex than the others. If there are future upgrades and/or modifications required to the software, the chosen path affects and will continue to affect the development. Agile software development practices are said to be capable of withstanding and mitigating the effects of technical inefficiency (Johannes Holvitie et al, 2018). These agile practices lead to higher chances of project success.

Complex and dynamic interactions among multiple users working together force the collaborative team to function cohesively (Alec Ostrander et al, 2020). Frequent interaction between the team members enables them to go for knowledge integration which is directly contributing to the quality of results (Carolin Haeussler et al, 2020), in this case, it is project success.

Past research results show that APMP is not appropriate for small development efforts whereas APMP is suitable for larger projects, based on the reasoning that cost and schedule play important roles in larger projects (Lior Fink et al, 2014). Agile practices are contributing more to success compared to traditional methods when project size increases (Jørgensen M. 2018). So, the project size matters for the success of the projects.

## III. CONCEPTUAL FRAMEWORK

The detailed review done has given the researchers to formulate a framework to measure the IT project's success when the project adopts agile project management processes. The framework measures the IT project's success. It will be measured by (i) Stakeholders' satisfaction, (ii) Cost compliance (iii) Time compliance (iv) Scope compliance, and (v) Quality compliance. The agile project management processes will induce IT project success. It will be measured by (i) Agile velocity (ii) Lead time (iii) Cycle time (iv) Code coverage and (v) Quality intelligence. The collaborative team is expected to play a mediating role between the agile project management process and IT project success. It will be measured by (i) Team cohesion (ii) team viability (iii) Team performance and (iv) Team practices. It is also expected that the project size will have a moderating effect on agile project management practices. It will be measured by the size (i) Small (ii) Medium and (iii) Large. Accordingly, five hypotheses are framed.

## IV. CONCLUSION

This research is expected to provide evidence to the practicing IT project managers, consultants, and IT organizations to move to agile management practices to ensure project success. The need for a collaborative team in the agile environment is stressed. Theoretically, this research is expected to add knowledge in the project management domain, the importance of agile project management practices.

## ACKNOWLEDGEMENT

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# CHEMICAL COMPANY SHARE VALUATION IN INDONESIA STOCK EXCHANGE FOR FORECAST

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***Abstract***

This research estimates the intrinsic value of shares in chemical companies listed on the IDX 2019 using the DCF FCFF method and RV PER and PBV method. Sample companies are the highest market capitalization in industry BRPT, TPIA, and UNIC. The source of data obtained from historical data for 2015-2019 was used as a reference for the 2020-2024 projection year. DCF method results showed that in the optimistic scenario (above industrial conditions), the moderate scenario (most potential conditions), and the pessimistic scenario (average industry conditions). Whereas in the RV method with the PER approach, in the optimistic, moderate, and pessimistic scenarios, the PER values of BRPT were 18.31, 16.66, and 14.7; the PER values of TPIA were 22.85, 21.72, and 21.13; and the PER values of UNIC were 12.61, 11.73, and 10.78. In the PBV approach, in the optimistic, moderate, and pessimistic scenario, the PBV values of BRPT were 1.61, 1.42, and 1.2; the PBV values of TPIA were 1.52, 1.42, and 1.37; and the PBV values of UNIC were 0.42, 0.38, and 0.34. This research concludes that the shares were undervalued, and it is recommended to buy BRPT, TPIA, and UNIC shares.

***Keywords— Discounted Cash Flow, Valuation, Relative Valuation, Intrinsic Value, Chemical Sector***

## I. INTRODUCTION

Damodaran (2006) states that capital market investment has a high risk because these financial instruments have high risk and return. Each investor can assume a different risk, but of course, they expect an appropriate return (Deviyanti et al., 2017). Investors always act to maximize profit, and minimize risk (Puspita & Yuliari, 2019). This risk and return condition have a positive relationship, namely, the greater the risk, the greater the benefits that must be compensated for (Deviyanti et al., 2017).

A large market capitalization is generally one of the attractions of investors in choosing stocks. Market capitalization is the market value of the shares issued by an issuer. According to Silviyani et al. (2014) large capitalized stocks are the investors' target for long-term investments because of their impressive growth potential and relatively low-risk exposure. Based on financial report data on the IDX, there are three companies in the basic industry and chemicals sector and the chemical sub-sector that have the highest market capitalization value in the sector of similar companies as of 31 January 2019, namely PT. Barito Pacific Tbk. (BRPT); PT. Chandra Asri Petrochemicals Tbk. (TPIA); and PT. Unggul Indah Cahaya Tbk. (UNIC). Overall, these three companies represent market capitalization weighing 98.30% for the industry. Also, the three companies are listed on the Indonesian Sharia Stock Index (ISSI)

Fluctuations of stock price and risk and return level are shown in the initial analysis of the three sample companies' stock prices, namely BRPT, TPIA, and UNIC. The sample was selected based on purposive sampling criteria: they are listed on the IDX in the basic industrial sector - chemical subsector; they are listed on the ISSI index; and they have never been suspended, but active in transactions on the IDX at least until December 2019.

The Indonesia Stock Exchange (IDX) report from January 2015 to December 2019 showed stock returns for the BRPT, TPIA, and UNIC tend to decline. Based on the phenomenon previously mentioned, the stock return trend of BRPT, TPIA, and UNIC tends to decrease. On the contrary, ISSI stock returns tend to increase quite well. As a result of this condition, there are inconsistencies between both of them.

This study aims to determine the prediction of share price values from historical financial statement data on three chemical sub-sector companies listed on the IDX, namely BRPT, TPIA, and UNIC, using the DCF method with the FCFF approach and the Relative Valuation method with the PER and PBV approaches using three scenario conditions, namely (pessimistic, moderate, and optimistic scenarios). These approaches can be used as a measurement to determine three companies' stock prices and serve as an appropriate recommendation for investors. Then, recommendations will be provided to investors on whether the shares are worth buying, selling, or owned after comparing the value of shares in the market with the intrinsic value obtained from this research.

## II. METHODOLOGY

This research used a quantitative research method, namely calculating data with certain methods to get the desired results. This research's variable is the intrinsic value of shares based on the company's fundamental value (firm value). This research aims at obtaining the fair value of stock prices using the DCF method with the FCFF and the RV with the PER and PBV. The ratio measurement scale is to measure the research variable

This research used the purposive sampling technique. The technique of purposive sampling is a technique that can provide the desired information of the sample because it can represent or follow established criteria (Sekaran and Bougie, 2016).

Based on the specified purposive sampling criteria, the samples of this research were Barito Pacific (BRPT), Chandra Asri Petrochemical (TPIA), and Unggul Indah Cahaya (UNIC). The secondary data from published and historically audited financial reports from January 2015 to December 2019. The data is taken from IDX and IDN Financials.

## III. RESULTS/FINDINGS

In an optimistic scenario, the value of intrinsic shares of chemical subsector companies listed on the IDX using the DCF resulted in BRPT of Rp697, TPIA of Rp2,097, and UNIC of Rp2,659. Based on calculations using the RV approach with the PER method, BRPT had 18,113 times, TPIA had 23,183 times, and UNIC had 12,368 times. Meanwhile, the calculations using the PBV resulted in BRPT with a value of 1.614 times, TPIA 1.523 times, and UNIC 0.422 times.

In a moderate scenario, the value of intrinsic shares of chemical subsector companies listed on the IDX using the DCF resulted in BRPT of Rp614, TPIA of Rp1,959, and UNIC of Rp2,403. Based on calculations using the RV approach with the PER method, BRPT had 16,473 times, TPIA had 22,041 times, and UNIC had 11,503 times. Meanwhile, the calculations using the PBV resulted in BRPT with a value of 1.421 times, TPIA 1.423 times, and UNIC 0.382 times.

In a pessimistic scenario, the value of intrinsic shares of chemical subsector companies listed on the IDX using the DCF resulted in BRPT of Rp519, TPIA of Rp1,888, and UNIC of Rp2,136. Based on calculations using the RV approach with the PER method, BRPT had 14,539 times, TPIA had 21,441 times, and UNIC had 10,573 times. Meanwhile, the calculations using the PBV resulted in BRPT with a value of 1.201 times, TPIA 1.371 times, and UNIC 0.339 times.

## IV. CONCLUSION

From the results in this research, there were differences in the results obtained using the DCF method and the relative valuation method. DCF method referred to the company's historical financial data. In contrast, on the relative valuation method, the PER approach referred to the company's earnings compared to the industry, and the PBV approach focused on the value of the company's equity compared to the industry.

From the relative valuation calculations results, all scenarios resulted in the company values of BRPT, TPIA, and UNIC that are still in the range of industries. It means that the calculation of the DCF method is reliable and precise. Therefore, it concludes that this research recommends selling the shares of all companies, namely BRPT, TPIA, and UNIC.

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# CONSUMER PRODUCT EVALUATION AMONG MALAYSIAN CONSUMER

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***Abstract***

Globalisations have been a phenomenon globally and have played an influential role in the emergence of multinational companies. It indirectly led to an increase in the variety of products available in the market that originated from a different country for global consumers and affected their product evaluation. A significant share of foreign products in the marketplace has not been received well by local customers, including Malaysia. Despite being exposed to many information through social media and mass media, specific product categories are preferred and evaluated vary depending on the manufacturing countries. This study aims to examine the factors influencing consumer product evaluation among Malaysian consumer. A sample of 130 questionnaires being distributed throughout Malaysia by email and social media. Collected data were analysed using the Statistical Package for Social Science (SPSS) software version 27. Therefore, it can be concluded that both consumer social status and product brand have a significant impact on consumer product evaluations among Malaysian consumers. At the same time, country competencies appear to have no effect

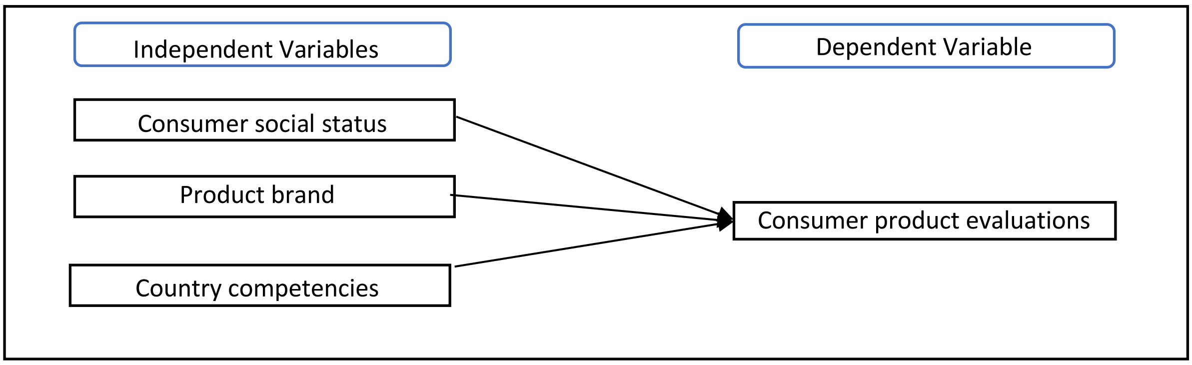
***Keywords: consumer product evaluations; consumer social status; product brand; country competencies; consumer***

## I. INTRODUCTION

Product evaluations have been a go-to consumer strategy before making purchasing decisions whereby they take a lot of considerations in the form of cue or signal so that the product is worth to be purchase while fulfilling their needs and demands. Cues could be separated into extrinsic and intrinsic, where intrinsic cues solely focusing on the direct aspect that will appeal to the customer, like colours, smell and size. Meanwhile, extrinsic cues are more intangible in the approach, such as brands and price (Manrai et al., 1998). Although consumers often suggest that intrinsic cues are enough, when it comes to high profile purchases like cars, customers will depend solely on extrinsic cues rather than intrinsic cues. On the other hand, the consumer also tends to evaluate products differently according to their class. We can see products like smartphones and automobiles from China are highly regarded worldwide. In contrast, products from the same countries got a contrast treatment.

Social status has been among the prominent factors for consumers in deciding what kind of product they want to consume. This is due to a social being where we tend to be influenced by our surroundings. It could be our close ties or within ourselves, such as the need for recognition. Other than that, brands are often viewed as a variable that could influence consumer product evaluations as brands can be observed from multiple perspectives, allowing consumers to express themselves. To do that, the brand needs to have its personality that will mirror the consumer personality. Hulland (1999) also suggests that consumers tend to purchase the product from a certain country tally with their perceptions about the country. Nowadays, each of the countries has been regularly associated with the products that the country manufactures, which will help consumers evaluate the products' quality. Therefore, this study aims to discuss whether consumer social status, product brand and country competencies affect consumer product evaluation.

## II. METHODOLOGY




Based on the above research framework, three hypotheses are developed based on the stated variables:

H1: There is a significant relationship between consumer social status and consumer's product evaluations;
H2: There is a significant relationship between product brand and consumer's product evaluations; and
H3: There is a significant relationship between country competencies and consumer's product evaluations.

A quantitative research method would be utilised to test the relationship between research variables. The questionnaire items were adopted from prior researchers. Google form would be used for collecting data. It distributed through social media and email due to the author's mobility being restricted by the implemented movement control order (MCO) because of the COVID-19 pandemic. The survey's collected data would be analysed based on the developed hypothesis using Statistical Package for Social Science (SPSS) software version 27.

## III. RESULTS/FINDINGS

| **Independent Variables** | **Beta** | **Significance** | **Results** |
|---|---|---|---|
| Consumer Social Status | 0.190 | 0.017 | Supported |
| Product Brand | 0.254 | 0.001 | Supported |
| Country Competencies | 0.142 | 0.082 | Not Supported |

Table 1: Summary of the analysis

Based on Table 1 above, there is a significant relationship between consumer social status and product brand towards consumer's product evaluations. However, there is no significant relationship between country competencies towards consumer's product evaluations. The H3 is being rejected since the significant value is 0.082 ($p<0.05$). Previous studies are found to have similar conclusions on H1, but Semeijn et al. (2003) argued that only product such as cars, wine and clothes are found to be heavily influenced by social status. Past studies also found a similar conclusion about the H2. Chovanová et al. (2015) exhibited that consumers tend to associate a product brand with quality. However, for H3, past studies found contradicts results where Wilcox (2015) suggested that consumers tend to purchase a product from a country that is classified as warmth rather than a non-warmth country.

## IV. CONCLUSION

The research has confirmed the hypothesis that there is a significant relationship between consumer social status and product brand towards consumer's product evaluation. This research particularly would insist managers build up their brand instead to incite trust among customers. While the research accuracy can be argued due to limitations, future researchers could opt for more respondents by utilising the multiple distributions method, which could be key in obtaining far more accurate results.

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# CORPORATE GOVERNANCE MECHANISMS: IMPACT ON EARNINGS MANAGEMENT PRACTICES IN THE INDUSTRIAL SECTOR PRE- AND POST-COVID-19 PANDEMIC (EVIDENCE FROM MALAYSIA)

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***Abstract***

The focus of this study was on the relationship between corporate governance mechanisms and earnings management pre- and post-Covid-19 pandemic in the Malaysian industrial sector. Most corporate governance mechanisms can affect the accounting choices and operating decisions of industries. This research aims to study the effectiveness of corporate governance (internal control) in Malaysian industrial firms, and how they detect and prevent earnings management practices particularly during the covid-19 pandemic. This study has selected two internal corporate governance mechanisms, namely, the characteristics of the board of directors and audit committee, which can highly affect earnings management practices, and was considered as independent variables. As part of the quantitative analysis, three accruals models were selected, namely, the Standard Jones model (Jones, 1991), the modified Jones model (Dechow, Sloan, & Sweeney, 1995), and the Peasnell, Pope, and Young model (2005). These models were used to determine earnings management values, which were used jointly with corporate governance factors. Data on corporate governance characteristics were extracted from the 2017 to 2020 annual financial reports published by Bursa Malaysia. Such information can be used to fortify sustainable development goals and revitalize global partnership to achieve these goals. A new approach to assess company earnings will enable Malaysian firms to make a better decision on creating and maintaining value. High earning firms will contribute to the growth and wealth of the shareholders.

***Keywords: Earnings Management, Corporate Governance, Covid-19 Pandemic, Internal Control***

## I. INTRODUCTION

The first reported case of COVID-19 has since grown to more than 4 million cases worldwide, with the World Health Organization (WHO) declaring this disease as pandemic on 11 March 2020. This pandemic has ravaged human health, as well as the global financial market, including Malaysia.

This study, however, differs from other research: first, by evaluating the earnings of corporates before and after the crisis. The relationship between corporate governance mechanisms and earnings management was also evaluated, using a recent dataset as the current widespread pandemic is unfortunate but unique and offers a rare opportunity to assess governance response and performance of corporates, indicating that managers tend to increase the firm's cash level to cope with the operational risks caused by COVID-19 and ensure that the firm can smoothly survive the pandemic.

## II. LITERATURE REVIEW

The inability of numerous scholars in this field to agree on a specific meaning of corporate governance has caused Donaldson (1990) to define it as a "structure whereby managers at the organization apex are controlled through the board of directors, its associated structures, executive initiative, and other schemes of monitoring and bonding". On the other hand, the definition by the Cadbury Report (1992) emphasizes the functions of the key players of an establishment which comprises the auditor, the board of directors and the shareholders. The Cadbury Report defines corporate governance as "a system by which companies are directed controlled".

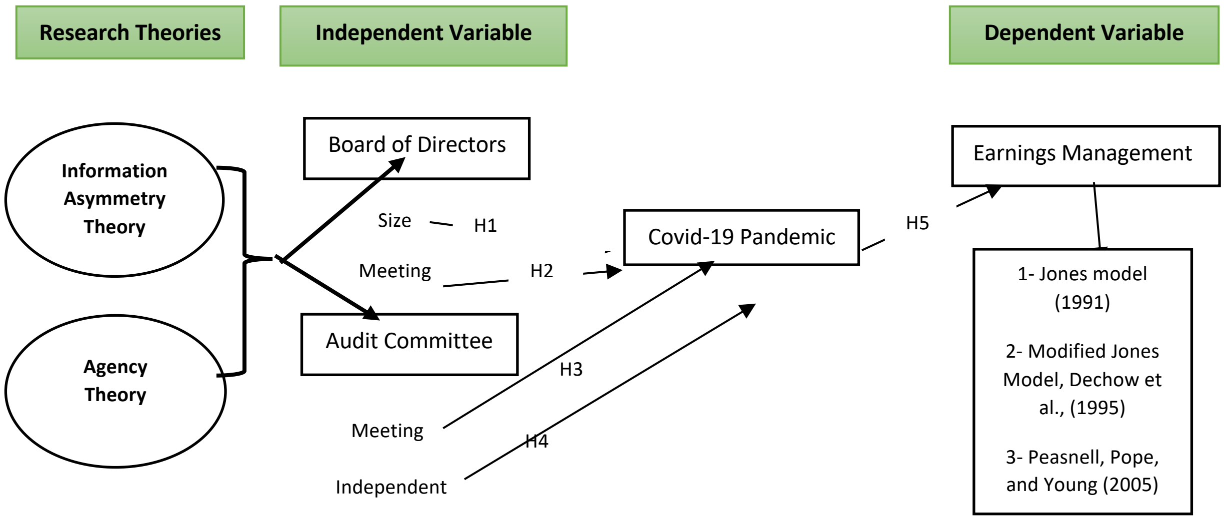
Based on some of the definitions from the prior literature, Schipper (1989), had therefore defined earnings management as "an intervention to prepare and control the external monetary reporting process and obtain some special benefit (facilitating the operation process)".

Of late, the GLOBAL financial markets have been experiencing significant pressure and uncertainty. Investors are finding it hard to look for a bright spot due to the widespread social and economic disruptions caused by the Covid-19 pandemic. However, in the present difficult environment, asset reallocation enables investors to pay attention to the protection of their portfolios.

With reference to that matter, in terms of percentage, an allocation of approximately 45%, 30%, 20%, and 5% in bonds, equities, gold, and cash, respectively, has been recommended by the bank. In response to Covid-19, investors of contracting economies are advised by the regional banking group to look beyond the current and future period of weak fundamentals and engage in a longer horizon of investment time of a minimum of one to two years to see returns, for both bonds and equities. CGS-CIMB, the group's research arm, has projected 2.7% contraction of this year's gross domestic product (GDP) before an economic rebound could be seen by this country with an increase of 6.1% in the subsequent year and 4% in 2022.

## III. CONCEPTUAL FRAMEWORK

The following Figure shows the framework applied in this study.




## IV. CONCLUSION

This study aimed to find The impact of COVID-19 on the effectiveness of corporate governance mechanisms in detect and reduce earnings management practices in the Malaysian industrial sector. To do so, two theories were applied in this study that has the biggest influence on the employment of earnings management practices are the asymmetry theory, agency theory. Accruals based earnings management models were selected to estimate the earnings management value of each company. As well the data will extract from annual reports which already published in Bursa Malaysia during 2018-2020.

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# DIGITAL TRANSFORMATION CHALLENGES IN TELKOMSIGMA

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***Abstract***

The current research study aims to explore the challenges in digital transformation in the Telkomsigma unit of Telecommunication Digital Solution Management Services. Data collection and data sources for this study using questionnaire strategies against the intended objects, namely telecommunication companies (Telkomsigma IT Manage Services) and reference journals or articles related to challenges in digital transformation. The collected data will be analysed using CFA (Confirmatory Factor Analysis). The data will be analysed using the SPSS tool. The results showed that using factor analysis made the factors items grouped, and then the group was labelled as an identified challenge.

***Keywords— Digital Transformation, Challenges, Telecommunication Digital Solution Management Services, Confirmatory Analysis Factor, Data Analysis***

## I. INTRODUCTION

Telkomsigma's key business is to provide technology solutions such as integrated systems, data centres, cloud solutions, and managed services. Telkomsigma established in 1987, and since then Telkomsigma is committed to being the leader in providing innovative end-to-end ICT (Information and Communication Technologies) solutions for companies, both in Indonesia and abroad. With Telkomsigma's vision to become the preferred Digital Transformation Partner in Indonesia, Telkomsigma has a mission to become a trusted partner in providing and implementing the benefits of ICT solutions to accelerate the growth of its customer's businesses. To support the company's business development and sustainability in line with the growth of digital transformation, the focus of this research is to find the factors that challenge digital transformation at Telkomsigma.

Digital transformation is the radical use of technology to increase the performance or reach of an organization. In digitally transformed businesses, digital technology enables better processes, talent engagement, and new business models (Deloitte, 2018). Digital transformation is inevitable if organizations are willing to survive and compete. The rapid development of technology in the future makes digital transformation must be handled wisely. Organizations must prepare well and the implementation of digital transformation must be in line with the organizational strategy. The strategies that are and will be carried out when performing digital transformations must be adjusted. This means that the organization must rethink existing strategies to adapt to the changes that will be implemented. The principal purpose of this research is to explore the challenges in digital transformation in the Telkomsigma unit of Telecommunication Digital Solution Management Services. This research utilizes various research and reference journals or articles to be used as a reference for the selection of items or variable factors.

## II. LITERATURE REVIEW

The phenomenon of digital transformation has been conceptualized as the use of new digital technologies to enable the improvement of large businesses, such as improving the customer experience, streamlining operations, or creating new business models (Warner and Wager, 2019). These new digital technologies include, for example, social, mobile, analytics, cloud, and Internet of Things (IoT) technologies (Sebastian et al., 2017). The term "transformation" reveals the completeness of actions that need to be taken when the ruling organization is faced with new and evolving technologies (Singh and Hess, 2017).

It can be concluded that digital transformation is an acceleration of business activities, processes, competencies, and models to fully utilize the changes and opportunities of digital technology. Organizations need to evolve to cope with the changing business landscape. Organizations need technology that focuses on results, innovation, and continuous improvement. Ideally, the use of technology is driven by business needs. Therefore, digital transformation is a business transformation. Some organizations usually call digital business transformation, which is more in line with the business aspect. Digital transformation requires an understanding of what an organization needs.

Looking at the above issues, we are working to find solutions that can provide information to organizations regarding the challenges of digital transformation. Information obtained from various sources such as research and journals or articles on digital transformation. Previous research did not group the various challenge factors of digital transformation, only explaining the impact of digital transformation on an organization. The flow of this research seeks as much information as possible in the form of variables or items from various references such as journals or articles, then grouped and concluded to be challenging factors in Telkomsigma companies.

## III. METHODOLOGY

References from various sources such as journals and articles will be used as variable samples that are then developed to be used as a benchmark as a questioner, the questioner will be distributed to all Telkomsigma employees for the Unit Manage Services Telecommunication Digital Solution. Data obtained from questioners will determine the value of variables that greatly affect digital transformation. From the question item asked, using factor analysis makes the item grouped, and then the group is labelled as an identified challenge.

## IV. CONCLUSION

The results of this study are expected to be reference materials that can be used to provide an overview of the challenges of digital transformation. The importance of the amount of data from various reference sources as factor analysis material is very useful in grouping items or variables so that it can be used as a reference in determining digital transformation factors in a company.

## ACKNOWLEDGEMENT

Not applicable.

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# EFFECTIVENESS OF INTERNAL AUDIT THROUGH INTERNAL AUDITORS' COMPETENCY

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***Abstract***

To ensure strong corporate practices, companies need to ensure their internal audit function is effective. Therefore, understanding the factors that affect internal audit effectiveness is important. This paper investigates the effectiveness of internal audit through internal auditors' competency. Internal auditor' competency is investigated from two variables namely professional qualification and their experience. This study applies an experimental approach with multiple 2x2 between-subjects' designs with one subject variable (gender) and two independent variables. A total of 56 people participated and responded to the questionnaires, which are distributed using hardcopy printout and online platforms. The experimental results indicated that internal audit is perceived to be effective when internal auditors are competent. This finding should assist the management in allocating their yearly funding for staff development.

***Keywords—competency, experience, professional qualifications, internal audit effectiveness***

## I. INTRODUCTION

Companies that practice good corporate governance are expected to portray great integrity culture and will lead towards long-term business sustainability. Therefore, being one of the corporate governance pillars, internal audit needs to be effective (Karragiogos et al., 2010). Many studies have utilised various approaches to understand the factors that influence the effectiveness of internal audit practice (Endaya & Mohd Hanefah., 2013; Alzeban & Gwilliam, 2014).

Past studies reveal that competency examined through experience and professional qualification is important to assist auditors in getting good audit findings (Alzeban & Sawan, 2013). This is necessary as experience and expertise indicate that a person's knowledge changes in line with the increase in the person's overall experience (Knapp & Knapp, 2001). In addition, Al-Matari et al. (2014) highlighted that a person with many years of experience is in a better position to make the right decision in dealing with any situation. A study by Dellai and Omri (2016) applied professional qualification in measuring internal auditors' competency towards the effectiveness of internal audit, even though they did not find any significant relationship there. This paper, therefore, examines the effectiveness of internal audit through internal auditors' competency focusing on their professional qualifications and years of experience.

## II. METHODOLOGY

This paper applies an experimental study with multiple 2x2 between-subjects' designs. Every design utilises gender as the subject variable, which means responses from male and female internal auditors were compared.

The first independent variable that is manipulated in the first case is the professional qualifications of the internal auditors. It is hypothesised that internal auditors with the professional qualification will lead to more effective internal audit. This is expected to be more prominent in female respondents. The second independent variable used in manipulating the second case is then the years of experience of the internal auditors. It is hypothesised that internal auditors with more experience will lead to more effective internal audit. Again, this is expected to be more prominent in female respondents. The dependent variable in both cases requires all participants to indicate the likelihood of the auditors providing strong recommendations towards each assignment of the case.

The hardcopy survey containing both manipulated cases were distributed to the members of the Institute of Internal Auditors Malaysia (IIAM) attending three of their training sessions in Kuala Lumpur. Only 18 responses were usable for the study. The survey was later converted to an online platform and distributed to the final year accounting students in Multimedia University who enrolled in the Internal Auditing subject; 38 usable responses were captured.

## III. RESULTS/FINDINGS

The results show that internal audit is effective when the internal audit staff are competent. This is particularly so when the staff possess professional qualification because they are perceived to be able to suggest strong audit recommendations in their final report. In addition, internal auditors with more experience are also perceived to be able to produce stronger audit recommendations too. However, there appears to be no gender difference between male and female respondents in the study.

## IV. CONCLUSION

Internal audit staff competency is important to ensure that internal audit is effective in organisations. This is particularly observed when internal auditors' have professional qualifications as well as those with more experience in performing internal audit responsibilities. Findings in this study will assist the management in allocating more funds towards staff development, particularly professional qualifications.

## ACKNOWLEDGEMENT

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# EFFECTIVENESS OF INTERNAL AUDIT THROUGH MANAGEMENT SUPPORT

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***Abstract***

Effective internal audit is crucial to ensure strong corporate governance practice. This paper examines the effectiveness of internal audit by way of management support. The management support is analysed through two variables namely training and resources. Data has been collected using an experimental approach with multiple 2x2 between-subjects designs, with one subject variable (gender) and two independent variables. Results revealed that there is partial evidence that management support is important toward the effectiveness of the internal audit. Only when internal audit staff is allowed to attend training will they be perceived as effectively capable to carry out their duties. This is more prevalent to be observed in female respondents. This finding indicates that the management should be sending their internal audit staff to attend more training.

***Keywords—management support, internal audit training, internal audit effectiveness***

## I. INTRODUCTION

The internal audit function is one of the four pillars that strengthen an organisation's corporate governance. Therefore, having an effective internal audit function is crucial for good corporate governance practice (Karagiorgos et al., 2010). Various studies used different approaches in investigating the factors that lead towards the internal audit effectiveness (Arena & Azzone, 2009; Endaya & Mohd Hanefah., 2013; Alzeban & Gwilliam, 2014).

It is advocated that internal auditor receiving more resources in performing their daily tasks would sufficiently improve their capabilities (Alzeban & Sawan, 2013). According to Mihret and Yismaw (2007), they argued that there is a positive relationship between management support and internal audit effectiveness. This is similarly supported by Alzeban & Gwilliam (2014) when they emphasised internal audit effectiveness is associated with gaining management support. Previous studies further indicated that management support could be in the form of staff training and availability of resources (Ahmad et al., 2009). This paper, therefore, examines the effectiveness of internal audit through the support given by the management and the support is focused on two aspects namely the staff training and availability of resources.

## II. METHODOLOGY

This research applies experimental study with multiple 2x2 between-subjects designs. Each design has the same subject variable (gender). In both cases, all response received from the males' internal auditors were compared to female internal auditors. The first independent variable encompasses the training granted to the internal auditors while the second independent variables are the manipulation of the resources availability (more staff) across departments. The dependent variable requires all participants to indicate the likelihood of the auditors providing strong recommendations towards each assignment given in both cases. A total of 18 internal auditors and 38 final year accounting students participated in this research.

## III. RESULTS/FINDINGS

The results show there is a significant effect when management supports their internal auditors by sending them to training. The internal auditors are perceived to be more effective in providing strong recommendations in their audit report but there is no difference in perceptions between both genders. The results further show that there is no significant effect when the management supports their internal auditors by providing them more resources and this perception is regardless of either gender.

## IV. CONCLUSION

Management support is partially significant to ensure the internal audit is effective in organisations. This is particularly observed when internal auditors are equipped with the necessary training as compared to when they received sufficient resources. This study contributes towards assisting the management in their yearly training allocation by sending their internal audit team to yearly internal audit training and this need to be spread across among their team members. Furthermore, since providing more resource (more staff) to the internal audit team is not perceived as leading them to produce better audit recommendations, it shows that having more people does not guarantee a better quality of output.

## ACKNOWLEDGEMENT

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# EMPLOYEE RETENTION STRATEGIES: GENERATION Z

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***Abstract***

Employees are a valuable resource to an organization; by contributing their knowledge, talents, and skills, they contribute significantly to the success and efficiency of the company. If the company fails to retain its employees, it will incur extra costs. Retaining these employees would ensure that an organization's success is sustained and more competitive in the marketplace. Hence, when designing retention plans the organization needs to recognize the employees' needs. Generation Z, also known as Gen Z, iGen, or centennials. This generation was born from 1995-2012 preceded by millennials. Generation Z (Gen Z) will shortly make up the majority of the workforce group in a variety of sectors. A total of 217 responses are collected through convenience sampling and further analysed using SPSS version 23 and Smart PLS 3.0. Findings of the study revealed that compensation, work-life balance, working environment and job satisfaction significantly influence employee retention among Generation Z. This study will help the organizations improve their current recruiting and retention practices to address the needs of the new workforce.

***Keywords—Generation Z, Employee Retention, Compensation, Work-life balance, Working Environment***

## I. INTRODUCTION

Today's labour market is made up of multiple generations. The presence of different generations in the labour market will give more challenges to the manager, human resources professionals and the organisation in the management (Dolot, 2018). Currently, with the retirement of the Baby Boomer from the workplace, the number of Generation Y and Z has started to increase. It is projected that Gen Z will make up 36% of the global workforce by 2020 and within five to ten years the number of this generation will continue to grow by double (Link, 2020). In Malaysia, based on the Department of Statistics Malaysia from Q1 2020 to Q4 2020 on the number of labour participants based on age group, it was recorded that the percentage of Generation Z based on age has increased from 45.9%- 50.6% (Department of Statistic Malaysia [DOSM], 2020). According to the Employer Brand Research conducted by Randstad Malaysia and Singapore, employees are no longer loyal or felt valued as a result of their work with the company and 29% of the employees are planning to work for a new employer (Dass, 2019). Furthermore, based on the research it is also found out that the average tenure of Generation Y is about 2 years, however, Randstad predicted that average tenure will be even shorter when comes to Generation Z (Dass, 2019). Therefore, the organisation needs to look into their policies and strategies to retain this new generation, the same method that is used by the organisation is insufficient to apply to the new generation. Many studies have been conducted on the factors influencing the retention of employees among generation Y (Koh, 2018; Ozcelik, 2015; Thompson & Gregory, 2012). Although some research on generation Z has been undertaken, the majority of these studies have little to do with employee retention within generation Z (Christina, 2016; Cloutier et.al 2015; Scheuerlein, 2019). Nevertheless, there are limited studies on generation Z concerning the factors influencing employee retention in Malaysia. Herzberg's two-factor motivation theory (1959) has provided a theoretical foundation for this study to examine and explain how different motivational factors correlate with the employee retention of Generation Z in the organisation. The motivational factors chosen for this study include compensation, training and development, work-life balance, working environment and job satisfaction.

## II. METHODOLOGY

This study employed a quantitative method through a cross-sectional survey to investigate the determinants of employee retention among generation Z workers in various sectors. In this study, non-probability sampling methods such as convenience sampling and snowball sampling techniques were used as they are more approachable and able to reach the respondent in a short period. This questionnaire employed several Likert scales as one of the statistical ways to reduce the common method variance. A total of 37 validated measurement items were adopted from works of literature (Demo et al., 2012; Kyndt et al., 2009). In this study total of 350 questionnaires were distributed, only 217 responded and yielded 62 per cent of the response rate. The data were entered into the Statistical Package for Social Sciences (SPSS) program version 23, and the hypotheses were then analysed using the Partial Least Square method by Smart PLS 3.0 software. The measurement model and the structural model were included in the two-step approach. Furthermore, the significance levels for loadings and path coefficients of the construct were examined using the bootstrapping approach with a resample of 5000 (Hair et.al, 2017).

## III. RESULTS/FINDINGS

The female employee made up 53.2 per cent of the study and the majority were single (83.4%) at their age of 22-25 (73.2%). About 46.1 per cent of respondents were degree holders and holding a permanent position in the organisation (59%). A clear majority of respondents (81.1%) attached to the current organisation less than 2 years and 70.9 per cent of them earning a monthly income of less than RM3000. The respondents were from various industries such as manufacturing (18.4%), food and beverage (18%), healthcare (12.9%) and financial services (10.1%). The findings reveal that compensation, work-life balance, working environment and job satisfaction are significantly influenced generation Z employee retention, except training and development does not have enough evidence to support its significant influence on employee retention among generation Z. The $R^2$ value of 0.634 implies a substantial model as suggested by Cohen (1988).

## IV. CONCLUSION

In a nutshell, among all the motivational factors, job satisfaction appeared to be the most important determinant in fostering employee retention among generation Z. Job satisfaction can be achieved when social relations of the working group and social conditions developed by the organisation are met (Prockl, Teller, Kotzab, & Angell, 2017). Therefore, the organisation should formulate an equitable compensation plan, promote work-life balance practices and develop a conducive working environment to retain their talents.

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# EXPLORING HOUSEHOLD FINANCIAL EFFICACY AMID MCO 1.0

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***Abstract***

Economic lockdown due to the outbreak of the covid-19 pandemic had caused household income shock. The purpose of this study is to gauge the impact of movement control order (MCO) on household income and to ascertain the determinants of household financial efficacy (FE) due to the control. A survey was conducted online from 1 April 2020 to 30 June 2020. Data collected were analysed using the KMO sampling adequacy test, Bartlett's test, reliability test and factor analysis. More than 46% of the respondents' income were greatly decreased or somewhat decreased due to MCO. Financial tools, lifestyle adaptation, contingency plan and realization of the impact of MCO had significantly affected household FE

***Keywords—financial efficacy, movement control order, Malaysia***

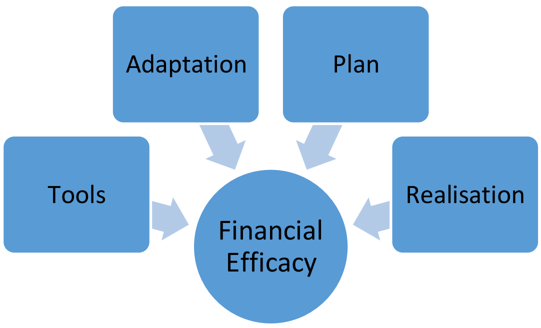
## I. INTRODUCTION

In order to break the cycle of Covid-19 infection, Malaysia started to implement the movement control order (MCO) in March 2020. The economic impact of the MCO has taken its toll on sales revenue due to reduced or total closure to businesses. Malaysia's gross domestic product (GDP) recorded the lowest growth rate of negative 17% for Q2 2020, since the Asian Financial Crisis in 1998. In Q3 2020, Malaysia's GDP declined by 2.7%.

At the micro-level, economic lockdown due to the outbreak of the covid-19 pandemic had caused income shock, food insecurity and worsening of dietary quality (Kansiime et al., 2021), especially in low-income households (Janssens et al., 2021). The motivation of this study is to gauge the impact of MCO on household income and to ascertain the determinants of household financial efficacy (FE) due to MCO 1.0.

## II. METHODOLOGY

The questionnaire was designed using a google form to explore financial efficacy among household in Malaysia. Financial efficacy which measures self-belief of financial capabilities to make correct financial decisions (Tang et al., 2019) forms the basis of the questionnaire design of this study.




Due to MCO, a survey was conducted online using the snowball method from 1 April 2020 to 30 June 2020. Data collected were analysed using the KMO sampling adequacy test, Bartlett's test, reliability test and factor analysis.

## III. RESULTS/FINDINGS

Based on factor analysis, factor loading of more than 0.5 were accepted as factors that affected household FE. Financial tools, lifestyle adaptation, contingency plan and realization of the impact of MCO were found to significantly affected household FE during MCO 1.0

Most households were employed in the private sector which was moderately or highly affected by the outbreak of the covid-19 pandemic. More than 46% of the respondents' income were greatly decreased or somewhat decreased due to MCO.

## IV. CONCLUSION

Almost half of the respondents' income was reduced due to MCO. The household that could use cashless payment, adapt to the change in lifestyle to the new norm, develop a contingency plan and assess their financial position would be financially efficient in managing their income and expenses.

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# FACTORS AFFECTING EMPLOYEES' PERFORMANCE IN THE MALAYSIAN PUBLIC SERVICE ORGANISATIONS

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***Abstract***

The purpose of this paper is to develop a theoretical model to determine the factors that contribute to employees' performance in the Malaysia public service. The study was based on reviews from established researchers' studies in the areas of employees' performance. Several keywords were identified involving ProQuest, Springer, Emerald, and EBSCOhost to search for the materials. Findings indicated that employee engagement, organization commitment, and perceived organizational support are the potential predictors for employees' performance. This study is expected to involve only Malaysia public service organizations. Future research was suggested to look into other propositions and contexts of organizations. Practical interventions for HRD professionals were suggested to guide employees on their job performance. This research yields a conceptual framework in determining the factors that influenced job performance among employees in the Malaysia Public Service organizations.

***Keywords— employee performance, employee engagement, organizational commitment, organizational support, Malaysia public service organization***

## I. INTRODUCTION

The Malaysian government is always determined to ensure effective service delivery that would contribute to better fiscal and policy management in the public sector. Therefore, the government needs to reorganize the public sector in attaining the objectives and organizational goals. The Public Service Department was held accountable for realizing the goals of the transformation of the public service. Generally, such transformation provides guidance for ministries of the Malaysian government in adopting a strategic plan to enhance the utilization, capabilities, competencies of human capital in bringing growth, and improve the public service performance in facing future challenges in the organization. In this era of globalization, job performance is a subject matter of interest to researchers specifically when it is related to employee performance. Hoendervanger et al. (2019) highlighted that the increased performance is the results of organization investment. Hence, it is important to look into job performance because it measures the output of the organization, thus determine its reputation in the era of globalization where the working environment is changed and developed (Jermsittiparsert et al., 2019). However, only a few are related to civil servants (Johari et al., 2016). Most of these studies concern on performance for a specific group of professions and workplaces; academic staff in educational institutions, namely schools, colleges, and universities. Hambuda (2017) stated that job performance is the implementation of capabilities to achieve the quality, quantity, teamwork, trustworthiness, and inspiration of employees because committed employees usually show higher productivity. This paper emphasizes on determining the relationship between organizational-related and job performance among employees in the public service organization in Malaysia.

## II. LITERATURE REVIEW

In Malaysia, maintaining efficiency and performance is a challenge for the public sector. According to Al Omari and Okasheh (2017), job performance is the task accomplishment by an individual or teamwork within the stipulated period to reach the organization's missions. Job performance is a fundamental component in organizations through the reflection of behaviors and contributions of the employees in achieving organizational goals. Many studies show that job performance is influenced by work engagement. Kahn (1990) defines engagement as the existence of employee psychology in performing a job. Yongxing et al. (2017) stated that the effect of engaged workers carries out their jobs more effectively could lead the organization to be a more competitive advantage. Mowday et al. (1979) defined organizational commitment that builds comprehensive to the whole organization by responding in a general effect. A positive association between work performance and organizational commitment occurs due to the aspect of psychological situation. Al Zefeiti and Mohamad (2017) stated that deciding the component of organizational commitment is crucial because it is related to enhance job performance. Amongst other determinants of employee performance is organizational support. Organizational support exists when the employees have the feeling that the organization values their contributions and showing their concern (Sun, 2019). According to Eder and Eisenberger (2008), employees have the tendency to feel the support when the organization fulfills their needs and desires. Based on the past researchers study and findings, this study identified that work engagement, organizational commitment and organizational support predicted employees' performance in the Malaysia public service organization.

## III. CONCEPTUAL FRAMEWORK

In theorizing the model, social exchange theory by Blau (1964) was used to support the conceptual framework of this study. The theory is also about the cost-benefit analysis that brings to the risks and benefits between two parties. This theory is also an important relationship towards job performance through understanding the employee's behavior in the workplace (Dinc, 2017). The first independent variable in the framework is employee engagement. According to Jha and Kumar (2016), employee engagement is vital for any business to improve its performance, mostly through understanding and communication between the management and the employees. The second independent variable is organizational commitment. An employee having high organizational commitment will increase an organization productivity (Qureshi et al., 2019). This study also used perceived organizational support as one of the predictors. Eder and Eisenberger (2008) mentioned that employees tend to develop a positive attitude and perception of the organization when organizational support is highly accepted. In providing adequate organizational support, it will eventually lead to a great working life that could positively affect job performance.

## IV. CONCLUSION

The proposed model was built from previous researchers' empirical study. Based on the literature review, this study identified the importance of those variables in predicting employee's performance. Several hypotheses were also developed. Essentially, this study sheds a fruitful framework in explaining employees' performance in the Malaysia Public Service organisation.

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# FACTORS AFFECTING PURCHASE INTENTION OF HEALTH INSURANCE AMONG YOUNG ADULTS IN MALAYSIA

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***Abstract***

The spread of the COVID-19 pandemic highlights the importance of health insurance, even when employed. Most of the companies in Malaysia usually provide employee benefit plans such as medical coverage to their employees. However, the COVID-19 incident sees an unpleasant after-effect, which causes the loss of a job that abruptly loss of medical insurance coverage for Malaysians. Thus, this study aims to examine the purchase intention of health insurance among young adults, an age in a transitional period of life and could be vulnerable to potentially catastrophic expenses in the case of severe injury or illness. Using a convenience sampling method, a set of self-administered questionnaires is distributed to 200 young adults in Malaysia, aged between 18 to 25 years old. The results show that attitudes, perceived behavioural control, and perceived financial benefits significantly influence health insurance's purchase intention. This study extends our understanding of health insurance purchasing behaviour, identifying the rationales for buying health insurance among young adults in Malaysia. The findings also suggest importance knowledge and managerial implications to the associated parties for reinforcing a positive attitude towards health insurance's purchase intention among Malaysian' young adults.

***Keywords –purchase intention, health insurance, Theory of Planned Behaviour (TPB), perceived financial benefits***

## I. INTRODUCTION

The outbreak of COVID-19, which engulfs Malaysia at the end of December 2019, has had an enormous impact on an individual's health, social, and economical. Health insurance is relatively essential for people to safeguard their future. According to the National Health and Morbidity Survey (2019), only 22 per cent of Malaysians are covered by personal health insurance. Besides, more than two-thirds of the Malaysian population (76 per cent) rely heavily on government healthcare services instead of private healthcare services. One of the factors that Malaysians do not own personal health insurance is insufficient money to pay for the monthly insurance premium (The Star, 2020). To insure or not is an age-old question. Amron, Usman, and Mursid (2018) claim that an individual's attitude and social influence, such as friends and family, will influence the health insurance policy's purchase intention. An individual might feel reluctant to purchase health insurance if they are unknown about future health status or none of their relatives or friends buys the health insurance policy (Azizam et al., 2020). Contrarily, it will be a financial burden to an individual.

Past studies determine the factors affecting health insurance's purchase intention are in general classes society. Notably, young adults (at the age of 18-25) experience life transition at the intersection of demography, psychology, and economics. Besides, young adults might experience several major life events such as labour force entry, partnership formation, getting married, and even the first child's birth might happen at this phase. Hence, young adults need to ensure they could meet their health care needs. The lack of health insurance coverage will increase the risk of inadequate health care and leave young adults vulnerable to high medical expenses in future (Keat, Zakaria, & Mohdali, 2020). Thus, more focuses should be placed on young adults by looking into their purchase intentions of health insurance. This study proposes a framework based on the Theory of Planned Behaviour (TPB), which hypothesise that attitudes (ATT), subjective norm (SN), and perceived behavioural control (PBC) have a significant positive relationship with purchase intention of health insurance among young adults in Malaysia. Furthermore, this study extends the TPB model by including perceived financial benefits (PFB) to examine the relationship with purchase intention of health insurance among young adults in Malaysia.

## II. METHODOLOGY

Using a convenience sampling method, a set of self-administered questionnaires is distributed to 200 young adults in Malaysia, aged between 18 to 25 years old. The questionnaire is designed in a simple way: close-ended questions demonstrated in short and simple sentences for easing the data collection process. Then, the data are entered into Statistical Package for Social Science (SPSS) version 27 for hypotheses testing purpose.

## III. RESULTS/FINDINGS

Descriptive analysis is applied to test respondents' demographic and their purchase intention on health insurance. Among the 200 respondents, 69.5% are female aged 21-23 years old (76.0%), with an undergraduate education background (85.0%). Besides, 71% of the respondents report that they do not encounter any health problems. Out of these 200 respondents, 22% of respondents do not subscribe to any healthcare policy before. Also, they do not have positive attitudes towards the subscription of health insurance in the future. This study also performs the normality test and reliability test. Both of the tests show that all the variables are normally distributed (based on skewness and kurtosis's criteria) and reliable (with Cronbach's Alpha above 0.7). Furthermore, multiple linear regression analysis demonstrates that ATT, SN, and PBC could explain 43.4% of the variability of purchase intention of health insurance among young adults in Malaysia. ATT being the strongest elements ($\beta = 0.472$) to explain the purchase intention of health insurance. Meanwhile, the subjective norm is not significant in explaining the relationship with health insurance's purchase intention, probably because health insurance is still not a social norm among Malaysians.

The findings suggest the importance of knowledge and managerial implications to individuals, health insurance providers, and the government towards health insurance's purchase intention among young adults in Malaysia. Individuals should take the initiative to understand the insurance coverage to recognise the advantage they will gain by purchasing health insurance. Health insurance providers and the government should also reinforce the right concept of how health insurance works and its importance to positively affect Malaysian young adults' attitudes to purchasing health insurance.

## IV. CONCLUSION

In conclusion, the findings indicate that PFB, ATT, and PBC have a significant positive influence on young adults' health insurance purchase intention in Malaysia. This study benefits individuals, health insurance providers, and the government to better understand health insurance's purchase intention among young adults. The findings help address the importance of positive attitudes suggest that government and health insurance providers need to develop effective marketing strategies by creating adequate awareness and conveying useful messages (e.g. financial benefits) about purchasing health insurance. Nevertheless, the limitation of the sample size seems to threaten the study's validity and generalisability. Future studies are recommended to aim at a larger sample size by covering different respondents' demographic characteristics.

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# FACTORS DETERMINING INDIVIDUAL WORK PERFORMANCE: REVISITING THE HUMAN PERFORMANCE SYSTEM MODEL

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***Abstract***

The work performance of individual employees plays an important role to increase the labour productivity of a nation. Past studies have revealed models of work performance factors. However, the human performance system model offers a relatively more comprehensive range of determinants of individual work performance which past studies lack on it. The work performance factors in the model are performance specification, task support, consequences, feedback, skills/knowledge, and individual capacity. A questionnaire was designed to identify research variables from each work performance factor in the model. A pilot study was conducted to finalise it. The seventh research variables in our study are competencies, self-efficacy, career awareness and interests, resources and support, incentives and rewards, performance targets, and performance feedback. Data comes from 3529 respondents and was analysed using the SPSS software. The results show that out of these seventh factors, only incentives and rewards is negatively significant with work performance. Thus, it is important for the organisations to focus on competencies, self-efficacy, career awareness and interests, resources and support, and performance targets to increase labour productivity for the benefit of a nation.

***Keywords—Work performance; human performance system model; competency; self-efficacy; performance targets.***

## I. INTRODUCTION

Labour productivity plays an important role to increase the economic growth of a nation. Policy makers and the government have come out with many initiatives to help increase the labour productivity such as by implementing minimum wage. However, without the help of the organisations in improving employees' work performance, it will be difficult to increase labour productivity and for a nation to aim for the highest growth. Work performance is referred to the effectiveness, quality and efficiency of their output. There is an association between individual jobs within the organisation, the processes which they are a part of, and the results at organisational level (Rummler and Morrill, 2004). Thus, it is important to understand the factors that will determine individual work performance. Although there are many past studies that revealed models of work performance factors, the human performance system model offers a relatively more comprehensive range of determinants of individual work performance.

This study aims to analyse the factors influencing individual work performance in reference to the work of Rummler (1972), which had been referenced by many past studies in this area. Recently, Diamantidis and Chatzoglou (2019), and Selamat and Heryanto (2019) have studied work performance but, the variables they are using are different than the human performance system model. There are also few qualitative studies done by Rummler and Morrill (2004), and Kelly and huff (2007) using the human performance system model but none on quantitative studies. This shows that the model needs to be further explored. This study utilises quantitative research techniques to understand the individual work performance factors based on the model.

## II. METHODOLOGY

A survey approach is utilised in this study by distributing randomly the questionnaires to 3529 employees. The questionnaire is developed by modifying those of Rummler (1972) to suit the focus of this study based on the human performance system model. The number of items for each variable as stated in Table 1. All the variables in the questionnaire are measured on a 5-point Likert scaling ranging from strongly disagree to strongly agree.

Hypothesis Development:

H1: Increase in competencies lead to increase in work performance

H2: Increase in self-efficacy lead to increase in work performance

H3: Increase in career awareness and interests lead to increase in work performance

H4: Increase in resources and support lead to increase in work performance

H5: Increase in incentives and rewards lead to increase in work performance

H6: Increase in performance targets lead to increase in work performance

H7: Increase in performance feedback lead to increase in work performance

## III. RESULTS/FINDINGS

Table 1 presents the regression estimation of individual work performance. With R square 0.548, then approximately half of the observed variation can be explained by independent variables. The model shows a statistically significant association between factors determining individual work performance and overall work performance. Specifically, competencies, self-efficacy, career awareness and interests, resources and support, and performance targets were positively significant with work performance at a 1 percent significant level. Surprisingly, incentives and rewards, on the other hand, were negatively significant with work performance at a 5 percent level. However, performance feedback was not significant with work performance. In summary, hypotheses H1, H2, H3, H4 & H6 are significantly supported but not for hypothesis H5.

**Table 1: Results of regression Analysis**

| **Independent variables** | **No. of items** | **Cronbach α** | **Mean** | **Standardized Coefficients B** | **t** | **Sig.** |
|---|---|---|---|---|---|---|
| Competencies | 4 | 0.830 | 4.1009 | 0.170 | 9.567 | 0.000*** |
| Self-Efficacy | 3 | 0.919 | 4.0879 | 0.246 | 13.998 | 0.000*** |
| Career Awareness & Interests | 3 | 0.804 | 4.1575 | 0.258 | 15.179 | 0.000*** |
| Resources & Support | 6 | 0.894 | 3.8533 | 0.083 | 4.258 | 0.000*** |
| Incentives & Rewards | 4 | 0.912 | 3.5558 | -0.034 | -2.109 | 0.035** |
| Performance Targets | 3 | 0.881 | 3.7669 | 0.158 | 8.630 | 0.000*** |
| Performance Feedback | 3 | 0.937 | 3.6271 | 0.020 | 1.019 | 0.308 |
| | | | | | | |
| **Dependent variable** | | | | | | |
| Work Performance | 3 | 0.934 | 4.1556 | | | |
| **R Square = 0.548** | | | | | | |

*** and ** indicate significant at 1% and 5% respectively

## IV. CONCLUSION

The results of this study to some extent conform to the human performance system model. Competencies, self-efficacy, career awareness and interests, resources and support, and performance targets were positively significant with work performance whereas incentives and rewards were negatively significant with work performance. These findings indicate that incentives and rewards do not contribute to high levels of work performance. Although incentives and rewards have a negative significant relationship with work performance, it still plays an important factor for firms to motivate their employees to increase labour productivity.

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# FACTORS INFLUENCING COUNTERPRODUCTIVE WORK BEHAVIOR AMONG PRIVATE-SECTOR EMPLOYEES IN MALAYSIA

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***Abstract***

Counterproductive work behavior refers to any work behavior, which is against the interest of the organization. It is shown to have severe negative impacts on business performance as well as on society. The research question is: 'what are the factors influencing counterproductive work behavior in organizations?' Factors investigated in the study fall into two categories, i.e. organizational- and work-related factors. The study's underlying theories are a general strain and the social exchange theories. Respondents are 141 Malaysian private sector employees. Data is collected using an online survey questionnaire and analyzed using the Statistical Package for the Social Sciences (SPSS) software. The study's findings serve as a valuable reference for organizations as they enable human resource management professionals to have a better understanding of factors influencing counterproductive work behavior. Based on the study's findings, relevant strategies can be implemented to lessen or eliminate this negative behavior in organizations.

***Keywords—Counterproductive work behavior, social exchange theory, general strain theory, organizational-related factors, work-related factors.***

## I. INTRODUCTION

Workplace negativity is a critical topic in management and organizational behavior research (Schilpzand, De Pater & Erez, 2016). Counterproductive work behavior refers to activities and intentions that negatively affect the organization (Zubaidah, Ng, Ho & Murali, 2019). In Malaysia, the problem of counterproductive work behavior is also in the limelight. Among the most common cases in Malaysian organizations include bribery, insubordination, theft, and fraud (Rahim, Noranee, Othman, Shabudin & Anis, 2018). However, Alias, Chew, Ahmad, and Abdul Mutalib (2018) highlight that existing research is focused on counterproductive work behavior in western countries, thereby producing an extensive gap in studies on non-western environments.

Hence, this study focuses on the problem that despite the negative impacts of counterproductive work behavior in organizations, there is limited research data on the matter from the Malaysian private sector as well as from non-western countries. The main question for this study is: What are the factors impacting counterproductive work behavior in private sector organizations in Malaysia? The significance of the study's findings is that relevant strategies can be implemented by organizations to lessen or eliminate counterproductive work behavior towards improving individual and organizational performance.

The organizational-related factors under study are organizational justice, organizational ethical climate, trust, and perceived organizational support while work-related factors are job autonomy and work stress. Underlying theories used are the social exchange and the general strain theories. The social exchange theory highlights that a person tends to be dissatisfied and engage in counterproductive behavior when they receive unfavorable treatment from their superiors (Alias, Rasdi, Ismail & Samah, 2013; Chernyak-Hai & Tziner, 2014). The General Strain Theory (GST) argues that individuals who experience stress and become strained have a higher likelihood of engaging in counterproductive work behavior (Shadmanfaat, Cochran, Muniz & Kabiri, 2019).

## II. METHODOLOGY

While the research population is employees in the Malaysian private sector, respondents are required to be employed on a permanent and full-time basis with their organizations, and also have been in service in the organization for at least one year. The required characteristics are adopted from a study by Paul and Anatharaman (2003) which also focus on employee perception and behavior. Convenience sampling is used to derive the research sample, and an online questionnaire is used to collect data. The questionnaire items are adapted from a study by Alias and Rasdi (2015) which had studied counterproductive work behavior in the Malaysian public sector. A total of 141 participants from various organizations in the Malaysian private sector are involved in the study.

## III. RESULTS/FINDINGS

In the context of Malaysian private sector organizations, the study's multiple regression analysis results indicate that in terms of organizational-related factors, among the four factors tested, only two factors, i.e. perceived organizational support and organizational ethical climate have significant impacts on counterproductive work behavior, whereas trust and organizational justice have no significant impacts. As for both the work-related factors tested, neither job autonomy nor work stress have any significant impacts on counterproductive work behavior.

## IV. CONCLUSION

This study adds to the limited literature on counterproductive work behavior among Malaysian private sector employees. Even though employees in the study report that they did not engage in counterproductive work behavior during for the past one year prior to the study, they may have done during other times throughout their working years. The study's findings would help managers understand the types of counterproductive work behavior happening at their workplaces as well as and the influencing factors. Hence, proper plans can be developed to reduce or eliminate counterproductive work behavior.

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# FACTORS INFLUENCING USERS' BEHAVIOUR CHANGE IN E-PAYMENT

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***Abstract***

This study examines the factors influencing the users' behavior change in e-payment. The study focuses on digital payment which is mainly made up of e-wallet and payment applications that have been made widely available by merchants nowadays. The method used is a survey questionnaire and structural equation modeling is utilized for data analysis. In total, 80 random individuals aged between 18 and 70 with a basic level of reading literacy are selected as the respondents to answer the questionnaire. The age group that frequently uses e-payment services is in the 25 to 34 years old group, which is 32.5% from the pool of the respondents and most of them are underemployment. The data collected shows three factors that influence user's behavior are ease of use, security and trust, and usefulness. In addition, the most significant relationship is the ease of use towards user behavior which has the highest magnitude. However, social influence does not induce any significant influence on user behavior. The findings from this study could be used to design and develop the financial technology industry in the future in order to reach more users with better satisfaction.

***Keywords—e-payment, behavior change, structural equation modeling***

## I. INTRODUCTION

The payment system plays an important role in daily life around the world as it has been happening every day since the occurrence of early human civilization until today. According to Bank for International Settlements (BIS), a payment system consists of instruments, bank procedures, and typically interbank funds transfer systems that ensure and facilitate the circulation of money. Alternatively, it facilitates corporations, businesses, and consumers to transfer funds to one another (Bank Negara, 2019). The economy could not run properly without a payment system as everything is highly involved with payment. In this 21st century, with the use of Finance Technology (FinTech), people can no longer require to make payment via a piece of shell or paper notes only; In turn, it can be made with just a "tap" movement. Money can even be easily handed over to another individual from hundreds of miles away with just a blink of an eye. Though there are many types of financial services leveraged on financial technology nowadays, people are still hesitating to deploy the services.

Malaysia was having 54% smartphone penetration by 2018 (Statista Research Department, 2019). Meanwhile, internet banking was at 94.5% penetration of the population and mobile banking was at 34.4% penetration of the population by the end of August 2019 as stated in the Bank Negara Malaysia Statistics website. In comparison, mobile banking is still not widely used by the population in Malaysia especially the banking system using mobile devices. E-payment could bring pros and cons to the users too. If the e-payment is used in the right way, advantages like preventing over-spending (every transaction is recorded) and constantly monitoring in preventing online theft can be executed. Pilfering will occur if precautionary steps are not carried out properly. Besides, e-payment could benefit the government sector as well. This is because every single transaction would be recorded which helps to reduce financial crimes. Tracking of every transaction can subsequently avoid tax-run. Therefore, the objective of this study is to examine the effect of ease of use, social influence, security and trust, and usefulness on the behavioral change in e-payment with the aim to understand the user's behaviors and promote e-payment services.

## II. METHODOLOGY

This study uses a survey questionnaire to collect feedback from the respondents and in total 80 usable responses were collected. Figure 1 presents the research framework for e-payment.

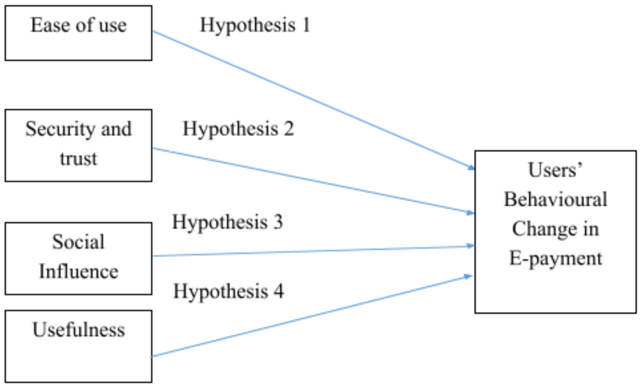


Figure 1: The research framework of users' behavioral change in e-payment.

For data analysis, the respondents' demographics, frequency analysis is used to present the profile of the respondents. Then, the data were analyzed using structural equation modeling techniques via SmartPLS software. The measurement and structural models were employed and path analysis which shows the relationship among the variables understudied was conducted. In total, there are four hypotheses (H1, H2, H3 & H4) which are shown in Figure 1.

## III. RESULTS/FINDINGS

For the demographic's details of the respondents, the majority of the respondents are in the age group of 25-34 years old and about 54% are male. 55.4% of the respondents are underemployed while 13% are self-employed. All the constructs meet the composite reliability, cronbach alpha, average variance extracted (AVE), and discriminant validity criteria. Then, the structural model shows that all variables (ease of use, security, and trust, and usefulness) are significant except for social influence. All are positively related to the user's adoption of e-payment and out of all, ease of use and usefulness have a greater effect and this finding indicates that our users emphasize how easy and useful the system is when they evaluate whether to use that e-payment service. At the same time, trust will also promote e-payment adoption.

## IV. CONCLUSION

In conclusion, ease of use affects users' behavior the most as the users found out that they prefer a simple service system. The users also found that e-payment is useful and the security of the e-payment service provider is trustworthy. Overall, they are satisfied with the current stage and will continue to use it with high expectations.

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# FRAMEWORK FOR GREEN PURCHASE INTENTION THROUGH CONSUMPTION VALUE AND WORD OF MOUTH

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***Abstract***

Green has been advocated in pursuit of sustainability thus public administration and private companies in Malaysia have incessantly been advocating and attempted green practices. However, its acquisition is still at an unconvincing rate, putting a strain on the green industry and its ecosystem. This research investigates factors that could lead to the green purchase, underpinned by the Theory of Consumption Values (TCV) while examining the mediating impact of positive word of mouth. The nature of this study is quantitative and purposive sampling is employed while variance-based structural equation modeling (PLS-SEM) is utilized for data analysis purposes. The findings reveal emotional value, epistemic value, and positive word of mouth as important positive drivers of green purchase intention, underscoring the use of positive word of mouth in mediating all consumption values with purchase intention. This research contributes pivotal insights to green product purveyors in provoking high impact product values among prospects to green purchase intention. Moreover, the research concedes the practice of spreading positive word of mouth that shall be emphasized among the public to induce interest in acquiring green thus promoting sustainability for the benefit of mankind.

***Keywords: purchase intention; consumption value; word of mouth; PLS-SEM***

## I. INTRODUCTION

Green has been a topic of interest among earth-dwellers, owing to its benefit in inducing a healthy and quality lifestyle. Researchers have reiterated green's benefits such as safeguarding nature, conserve energy, decrease or eliminate the emission of toxic agents, pollutants, and waste, all towards uplifting social responsibilities besides paving competitive advantage (Beleya et al., 2015; Beyzavi & Lotfizadeh, 2014; Liang et al., 2018). Evidently, Malaysia government had lined green as one of the key thrusts in the 11th Malaysia Plan which stretches a roadmap of green efforts to be focussed between 2016 and 2020, the aspirations spiral down to embarking on numerous eco-programs. Despite these initiatives, Malaysia churned waste amounting to 38,000 metric tonnes daily in the year 2018 (Rulim, 2018) which is significant twice the amount yielded in 2005 (Chu, 2019).

This research seeks to discover key ingredients of value and its impact on green purchase intention. This was undertaken after realizing calls to address ecological woes created by a human being which inevitably should commence with changing man's sensitivity on how one assesses the value of products in the market to preserve the planet earth. Henceforth, investigation on intention to purchase green from the values of consumption perspective could provide an immaculate breakthrough to identifying factors that foster the public towards embracing green items. This would be value adding as the existing research in Malaysian setting has scarcely explored how values possessed by a green product can motivate one towards inculcating green intention. Furthermore, word of mouth is seen as a tool that could influence green purchase intention directly and indirectly, which were discussed and implied by various researchers (Jalilvand & Samiei, 2012; Turel et al., 2010; Zhang et al., 2018). Hence, the research is designed to explore values or act that is impactful in affecting green purchase intention while supplying useful insights to green merchants, policymakers and even academicians in establishing the rightful explanation regarding green purchase intention.

## II. LITERATURE REVIEW

This cross-sectional study employed purposive sampling to obtain responses from those who have had heard about green products (Sekaran & Bougie, 2016). A survey was conducted in a non-contrived environment using a self-administered questionnaire with temporal proximity and clear instructions towards addressing common method variance (Podsakoff et al., 2003). The responses underwent data screening which includes missing value, straight-lining outliers test, and Mardia's normality assessment. This was followed by measurement model assessment in PLS-SEM to achieve internal consistencies, convergent validity, and discriminant validity. The hypotheses were tested in a structural model and their significance was ascertained through t-value and p-value. The p-value and t-value are set at cut-off values of 0.05 and 1.645 (one-tailed) respectively (Black, 2004). In confirming the mediator (positive word of mouth) impact, the bootstrapping method is exercised. Hence, in the event where the Confidence

Interval (CI) Bias Correctedness of lower limit (2.5%) and upper limit (97.5%) both contain positive or negative values only between them, it can be affirmed that the mediator has an impact (Preacher & Hayes, 2008).

## III. CONCETUAL FRAMEWORK

Eleven hypotheses were tested out of which three direct hypotheses supported namely emotional value ($t = 4.693$, $p<0.05$), epistemic value ($t = 5.031$, $p<0.05$), and positive word of mouth ($t = 5.106$, $p< 0.05$) whereas all four mediation hypotheses were supported.

## IV. CONCLUSION

The findings allude that the emotional value and epistemic value of the five consumption values turn out to be the main factor towards influencing one to acquire green. Besides that, positive word of mouth has occupied an enormous spot in the equation of persuading an individual to buy green as it excelled well as an exogenous variable to support green purchase while mediating other consumption values in compelling one to grow intention to buy green.

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# POVERTY ALLEVIATION AMONG SINGLE MOTHERS IN MALAYSIA: BUILDING FINANCIAL LITERACY AWARENESS

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***Abstract***

Recent study by the Organisation for Economic Co-operation and Development (OECD) and Malaysian Central Bank shown that Malaysian people are at the low level of knowledge in finance, particularly in personal finance, investment and financial planning. Many Malaysians as reported in the Malaysia National Strategy for Financial Literacy 2019 – 2023 struggle to plan and manage their fund well, exposing them to vulnerable impact of financial crisis as well as pandemic like the recent Covid 19. Hence, this study is to be conducted with the aim to examine and understand the level of financial literacy among single mothers in Malaysia. It is also to be conducted with the aim to develop financial literacy framework particularly for this group of people. The single mother group is chosen due to their importance in managing the financial matters of the family. A single mother has to bring up the family and play multiple roles including financial matters of the family. Hence, the knowledge and skill in financial literacy seem to be a very important element in making the financial well-being of the family. In large it may reduce poverty among those in the B40 category. This study will be focusing on the demographic profile, financial education background, financial behaviour, socioeconomic and risk preference of the group to be studied.

***Keywords—financial literacy, financial behaviour, financial well-being, single mother, poverty***

## I. INTRODUCTION

In recent years, the level of financial literacy of the people of developed and emerging nations and economies has become increasingly concerned. The mix of knowledge, ability and attitude towards financial issues is known as financial literacy (Anthes, 2004, Remund, 2010, Vitt et al., 2000, Kamakia et al. 2017). It contributes to decision-making and improves a person's financial well-being. The need for financial literacy is becoming inevitable, as is the case in today's world with a market of complicated products.

From the Malaysian perspective, in line with the government's objective of developing a decent standard of living for all Malaysians, which will make it possible to close the income disparity gap across income groups by ensuring that no one is left behind, it is therefore essential to ensure that all levels of society, including low-income single mothers (B40 category), are well educated and financially well-adjusted in managing their various aspects of household well-being. As a result, this will contribute to the stability of the country's economy and align with Malaysian Shared Prosperity Vision 2030. The groups concerned here are those single mothers in the B40 category who may have limited knowledge of financial concepts and may not have the tools they need to make the most economic and financial decisions.

## II. LITERATURE REVIEW

The number of single mothers in Malaysia is on the rise. The year 2000 census showed that there were 620,389 single mothers in the country. This number increased to 831,860 or 2.9% of the population in 2010. This shows an increase of 211,417 single mothers over the last 10 years. In comparison with the general population, single mothers have been consistently shown to be the most financially vulnerable.

Specifically, the issue of their financial behavior should be taken into account in the context of this pandemic covid-19 situation. This is because the ability to manage money is crucial to a successful life. Financial literacy is one way to improve one's quality of life. By having this knowledge, these single mothers will understand their choices and be able to plan their financial situation in the short and long term period. They are not only likely to experience ever-increasing complexity in financial products, services and markets, but are likely to encounter more financial risks in the future. Especially, they are likely to be more responsible for planning their own retirement savings and investments, and covering their health needs; and they will need to deal with more diverse and complex financial products.

Few studies (Abdul Talib et al, 2020 and Zarina et al, 2018) have found that the vast majority of working single mothers in Malaysia fall into the B40 income category. There is a tendency for them to earn income below the poverty line once being in the B40 income group. Furthermore, single mothers are among the most seriously affected, both financially and emotionally, by this 19th-century pandemic, according to a recent survey conducted by the Institut Wanita Berdaya, Selangor. This survey found that, in Selangor, the majority of single mothers earn less than RM3,000 per month. During the second week of the Movement Control Order (MCO), 40 percent of them were either forced to take unpaid leave or shut down their respective businesses.

The above situation should be alarming, since single mothers are also considered people who are directly involved in the development of the country and are the breadwinners of their families, including their children. As a result of their limited understanding of financial well-being and financial knowledge, the need for assistance to improve their financial behaviour and literacy is strongly encouraged (Zarina et al, 2018, Sabri & Juen, 2014, Rahman et al, 2017).

## III. CONCEPTUAL FRAMEWORK

To examine and understand the financial literacy among single mothers, this study will be focusing on the following variables or determinants namely (i) demographic characteristics, (ii) financial education and knowledge background, (iii) financial behaviour, (iv) socioeconomic and (v) risk preference of the group to be studied. These five variables are expected to influence the financial literacy of the single mothers. The demographic characteristics include age, gender, and occupation. Financial education and knowledge may include tertiary and higher-level education, relevant training and workshop attended. Financial behaviour includes attitude, social influence, emotion and challenges in financial matters. Socioeconomic includes employment type, employment status, household income and investment type. Furthermore, all of these variables will be employed to develop the financial literacy framework of the said group.

## IV. CONCLUSION

Financial literacy is important for single mothers to make many financial decisions since most of them are the main source of income for their families. These relate to a wide range of financial issues, including decisions on how much money should be spent and how much money should be saved, how to budget financial resources, where to invest money, how much debt may be needed to fund some of the expenditure, what form of debt should be taken, and how to manage financial risks. Increasing their awareness of financial literacy, which will affect their financial behaviour and financial well-being, is likely to play an effective role in reducing poverty among single mothers.

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# POVERTY ALLEVIATION FOR SUSTAINABLE GROWTH IN MALAYSIA THROUGH BETTER UNDERSTANDING OF B40 HOUSEHOLDS

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***Abstract***

One of the crucial Millennium Development Goals (MDGs) is to eradicate poverty in every corner of the world. However, most of the studies on poverty focus on the income or expenditure of the poor rather than the characteristics of the poor namely the B40 households. This study intended to conduct a comprehensive examination of the characteristics of the B40 households to provide insights into the key determinants that explain poverty within Peninsular Malaysia. Logistic regression modeling is conducted on the household data collected through the Household Income and Expenditure Survey in 2019. The results revealed that Bumiputera households comprised most of the share of B40 within Peninsular Malaysia compared to Chinese and Indian households. The factors that contribute to poverty within Peninsular Malaysia include the marital status, education level and ethnicity of the head of household in addition to the residency (urban-rural). Though, the most crucial key determinant of poverty is the education level. Hence, empowering the poor is the most effective solution in uplifting the B40s. The focus should be placed on upskilling the Bumiputera households especially those who stay within the rural areas.

***Keywords—B40, ethnic, household characteristics, poverty, urban***

## I. INTRODUCTION

One of the main efforts since the New Economic Policy (NEP) in 1971 till the Shared Prosperity Vision 2030 is to ensure sustainable economic development of Malaysia through inclusive and equitable income distribution. Therefore, eradication of poverty especially among the poor (B40 households) is crucial to ensure sustainable economic growth within Malaysia. However, most of the empirical studies investigated the income and expenditure among the B40 households but not on the characteristics of B40 households in Malaysia. Meanwhile, some brief descriptive statistics and illustrations can be found in reports (Hamid et al., 2019; DOSM, 2020) but without further testing. With the availability of micro-data, this study can examine the key determinants of poverty among B40 households in Malaysia within rural-urban areas and across different ethnicities.

## II. METHODOLOGY

This paper will be adopting the micro-data from the Household Income and Expenditure Survey (HIES) collected by the Department of Statistics Malaysia (DOSM, 2020) in year 2019. The sample consists of 11,382 households in Peninsular Malaysia ensuring a reliable estimation for this study. The main interest is to find out the determinants of the household of B40. Hence, the dependent variable in this study is a dichotomous variable with the code of 1 indicating B40 household and 0 indicating non-poor. On the other hand, the household characteristics serve as independent variables in this study covering characteristics of the head of household (age, gender, ethnic, education level and marital status), size of household, number of dependents in the household (young age member and elderly) and the residency (urban-rural). On top of that, logistic regression analysis will be performed separately according to the residency for comparison purposes due to the variation in the cost of living between rural and urban areas. In order to understand the difference in the key determinants of poverty across ethnicity, separate logistic regression is conducted for each ethnicity as well.

## III. RESULTS/FINDINGS

The distribution of households in urban areas within Peninsular Malaysia is approximately 80.5% while only 19.5% of households stay in rural areas which implies urbanization within the Peninsular of Malaysia. Approximately 9.9% of the households in Peninsular Malaysia are rural-poor while 31.2% of the total households are urban-poor. The Bumiputera households dominate the share of B40 households in both the urban and rural areas followed by the Chinese households and lastly the Indian households. The results of logistic regression for the households in urban areas revealed that Chinese households are less likely to be B40 as compared to the Bumiputera households. The likelihood of being B40 is higher for those who graduated with PMR or STPM compared to those who graduated with a degree or Advanced Diploma. Only the ethnicity to be detected as the significant determinant of poverty among the B40 households in the rural areas where Indian households are less likely to be B40s compared to the Bumiputera households. On the other hand, the main reason for poverty among the Bumiputera households in Peninsular Malaysia turned out to be the education level of the head of household and the residency. The rural Bumiputera are more likely to be poor compared to those Bumiputera households that stay in urban areas. The education level of the Indian's head of household too contributed to the likelihood of being poor. However, those Indian households staying in the urban areas are more likely to be the B40 compared to those that stay in rural areas. Meanwhile, the likelihood of Chinese households being poor depends on the marital status of the head of household and their residency. The Chinese household lead by separated heads of household or those in the rural areas is more likely to be in the B40s compared to those who never married. From the findings gathered in this study, key determinants like the size of household, the gender of the head of household, the dependency of household disclosed in other research (Geda et al., 2001; Prykhodko, 2006; Rahman, 2013; Farah, 2015) are not the contributing factors to poverty in Peninsular Malaysia.

## IV. CONCLUSION

In general, the B40s are more prevalent among the Bumiputera households in Peninsular Malaysia. Household characteristics like the marital status, education level and ethnicity of the head of household along with the residency play a significant role in explaining the poverty within Peninsular Malaysia. The formation of policies in eradicating poverty especially in the urban areas is essential considering the huge portion of poverty detected to ensure inclusive development for all citizens of Malaysia. The most crucial key determinant of poverty across different residency (urban-rural) and ethnicities is the education level. Therefore, the government needs to ensure the poor are not deprived of educational opportunities as knowledge is a fundamental component to fight poverty. Besides, the government should further develop programs in empowering the rural households especially the Bumiputera households to uplift them from the B40s. Similarly, attention should be placed on the Indian households within the urban areas. Inclusive development to all citizens including the poor, the vulnerable group, will then promote further economic growth ensuring the sustainability of Malaysia moving toward becoming one of the developed countries in the world.

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# STOCK VALUATION IN AUTOMOTIVE AND COMPONENT COMPANIES WITH DISCOUNTED CASH FLOW AND RELATIVE VALUATION METHOD LISTED ON THE INDONESIA STOCK EXCHANGE IN 2020

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***Abstract***

This research aims to estimate the intrinsic value of stocks in three automotive and component companies listed on the IDX with the highest market capitalization value. This research used Discounted Cash Flow method with FCFF and Relative Valuation method with PER and PBV. These methods were applied under the pessimistic, moderate, and optimistic scenarios. The historical data of the company from 2015 to 2019 are required for base projections (period 2020-2024). The research results by using FCFF, ASII was in an overvalued condition for the pessimistic scenario and an undervalued condition for the moderate and optimistic, IMAS was in an undervalued condition in all scenarios, and SMSM was in an overvalued condition in all scenarios. In addition, by using the PER method, an overvalued condition was obtained in all scenarios. Lastly, with PBV method, ASII was in an overvalued condition in all scenarios, IMAS was in an undervalued condition for the pessimistic and an overvalued condition for the moderate and optimistic, and SMSM was in an overvalued condition in all scenarios. Recommendation from the researchers is in a pessimistic, moderate, and optimistic condition, the shares of SMSM are worth selling if the investor has already the shares.

***Keywords— Valuation, DCF, FCFF, PER, PBV***

## I. INTRODUCTION

Indonesia Stock Exchange is a facility where serves to provide and organize a system and becomes a means of bringing buyers and sellers together who are other parties to offer securities with the aims of trading. The automotive and component sub-sector is one of the sub-sectors of various industrial sector manufacturing companies listed on the IDX. Based on a general explanation of the automotive and component sub-sector, the graph of the role of exports in the automotive and component companies sub-sector in the manufacturing sector for the period 2015 to 2019.

Based on the data for shares outstanding in the summary of the company performance, there were three companies listed on the IDX that had the highest market capitalization value in the sector of similar companies as of 31 January 2019, namely PT Astra Internasional, Tbk (ASII); PT Indomobil Sukses Internasional, Tbk (IMAS); and PT Selamat Sempurna, Tbk (SMSM). Overall, this represents a market capitalization with a weight of 93% to the industry.

This research aims at investigating the range of the fair value of the stock prices in three automotive and component companies listed on the IDX, namely ASII, IMAS, and SMSM, by using the DCF method with the FCFF approach and Relative Valuation method with the PER approach and PBV using three conditions (pessimistic, moderate, and optimistic scenarios). The methods with these approaches can be used as a benchmark in determining the fair value of the stock prices of the three companies and served as an appropriate recommendation for investors.

## II. METHODOLOGY

According to Neaxie dan Hendrawan (2018), when using the DCF method to carry out the valuation of the shares of a company, assumptions and projections are needed to find out how the company generates free cash flow in the future, then calculates it to present value. Future financial projections will be carried out using three scenarios are pessimistic, moderate, and optimistic. The steps in predicting intrinsic value using the DCF-FCFF method, including (Damodaran, 2006), are: First, classifying historical data as the basis for projections. Second, projecting and analyzing the ratio of financial statements. Third, calculating cash flow using the DCF method and the FCFF approach. Fourth, estimating the Cost of Capital (WACC). Then, calculating Terminal Value. Next, discounting FCFF and Terminal Value. After that, calculating Enterprise Value. Then, calculating Equity Value. Next, calculating Price per Share. Finally, assessing and providing recommendations.

The investors will calculate the number of times (multiplier) of earnings value, so PER method is commonly referred to as the multiplier method because it is represented in the stock price. The first step is to find the EPS value (Brigham and Ehrhardt, 2010). Furthermore, The EPS value obtained was then inserted into the PER formula. After obtaining the PER value, then it was compared with the average value of the industry. Hereinafter, investment decisions were carried out based on the results of PER analysis, namely: in an undervalued condition, in an overvalued condition, and a correctly valued condition.

The Price Book Value ratio of each company was estimated by using the formulation. Before determining the

PBV value, the Book Value needs to be determined first (Brigham and Ehrhardt, 2010). After obtaining the Book Value, then the PBV in the last year of each similar company is calculated and averaged. Furthermore, it was compared with the average value of the industry. An overview of the stock price, when estimated based on the PBV obtained, is that if the PBV is smaller than the average PBV value of the industry, the share price is in an undervalued condition.

## III. RESULTS/FINDINGS

In an optimistic scenario, the value of intrinsic shares of Automotive and Components Companies listed on the IDX using the DCF resulted in ASII of Rp. 9,138 , IMAS of Rp. 4,825, and SMSM of Rp. 547. Based on calculations using the RV approach with the PER method, ASII had 31,74 times, IMAS had 90,11 times, and SMSM had 6,18 times. Meanwhile, the calculations using the PBV resulted in ASII with a value of 1,98 times, IMAS 1,38 times, and SMSM 1,34 times.

In a moderate scenario, the value of intrinsic shares of Automotive and Components Companies listed on the IDX using the DCF resulted in ASII of Rp. 7,938 , IMAS of Rp. 3,748, and SMSM of Rp. 507. Based on calculations using the RV approach with the PER method, ASII had 28,53 times, IMAS had 71,39 times, and SMSM had 5,85 times. Meanwhile, the calculations using the PBV resulted in ASII with a value of 1,72 times, IMAS 1,08 times, and SMSM 1,24 times.

In a pessimistic scenario, the value of intrinsic shares of Automotive and Components Companies listed on the IDX using the DCF resulted in ASII of Rp. 5,863 , IMAS of Rp. 1,774 , and SMSM of Rp. 434. Based on calculations using the RV approach with the PER method, ASII had 22,64 times, IMAS had 35,17 times, and SMSM had 5,22 times. Meanwhile, the calculations using the PBV resulted in ASII with a value of 1,27 times, IMAS 0,51 times, and SMSM 1,06 times.

## IV. CONCLUSION

After obtaining the intrinsic value of the calculations that had been conducted, in a pessimistic, moderate, and optimistic condition, the shares of PT Selamat Sempurna, Tbk. are worth selling if the investor has already the shares, but other factors can still be calculated if investors want to buy their shares, such as the value of revenue that continues to increase every year and the company's large export expansion activities. This is supported by the calculation results of DCF-FCFF, RV-PER, and RV-PBV. Furthermore, in the three conditions, the shares of ASII and IMAS are worthy of buying or hold if the investor already has the shares. The recommendation of ASII is supported based on the calculation results of DCF-FCFF. Meanwhile, IMAS is supported based on the calculation results of the DCF-FCFF and RV-PBV.

The contribution of this research is to provide recommendations about the shares of the companies used in the research whether they are feasible to buy, hold, or sell. The recommendations given to related companies are a description of the company's condition which can be seen from the financial side of the company.

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Neaxie, L., & Hendrawan, R. (2018). Stock Valuation in Telecommunication Firms: Evidence from Indonesia Stock Exchange. *Journal xvi of Economic & Management Perspective, 11*(3), 1441-1447.

# STOCK VALUATION OF ANIMAL FEED SUB-SECTOR COMPANIES IN 2020 WITH TWO METHODS OF VALUATION ACCORDING TO THE INDONESIA STOCK EXCHANGE (IDX)

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***Abstract***

Determining the estimated fair value of stocks in three animal feed companies with the highest market valuation is the objective of this research. The companies studied in this research have been listed on the IDX. The data were collected from annual historical financial statements from January 2015 to December 2019. This research employs the Discounted Cash Flow method with FCFF approach, and Relative Valuation method with PER and PBV approaches. The projection was conducted under optimistic, moderate, and pessimistic scenarios. The historical data were used as the basis of projection for 2020-2024. The findings based on DCF-FCFF methods indicate that CPIN was in the overvalued position under the three scenarios, while JPFA and MAIN were in the undervalued position in all scenarios. Analysis based on the RV-PER method shows that all three companies were overvalued under all scenarios. Finally, RV-PBV methods show that CPIN was overvalued in optimistic and moderate scenarios but undervalued for the pessimistic scenario. JPFA is in the overvalued condition under the three scenarios, whereas MAIN is in the undervalued condition under all scenarios. This research suggests investors sell CPIN stocks and buy JPFA and MAIN stocks.

***Keywords— Intrinsic Values, Discounted Cash Flow, Valuation, Free Cash Flow to Firm, Relative Valuation***

## I. INTRODUCTION

The Indonesia Stock Exchange has a list of manufacturing industries divided into several sectors, one of which is basic industry and chemicals. This sector has animal feed sub-sectors comprised of several companies running animal feed and related processed food businesses. Through the KOMPAS100 index published in February 2020, noted that there were 3 animal feed sub-sector companies that made it into the index. This sub-sector is important as it contributes to the gross domestic product (GDP) of Indonesia. According to an article published on the website of the Directorate General of Livestock and Animal Health, Ministry of Agriculture in September 2019, The GDP generated by the animal husbandry sector, with the increase in animal feed export, was 231.71 trillion Rupiahs in 2018. According to the data of IDX, from five animal feed companies listed (CPIN, CPRO, JPFA, MAIN, and SIPD), three companies with the issuer code CPIN, JPFA, and MAIN had high market capitalization and included in the KOMPAS100 index. Overall, these companies had market capitalization with 97.4% of Competitive Profile Matrix (CPM). Hence, CPIN, JPFA, and MAIN are selected as objects analyzed in this research.

The problem statement of this research is that the presence of fluctuating stock movement can cause uncertainty among investors to make a decision. Some of the parameters with fluctuating movements are stock prices and their risk/return. Risks and confusing information in the market will always stalk investors, so valuation is needed. The phenomena above encouraged this research to conduct a valuation on animal feed sub-sector companies with the highest market capitalization to determine their fair value. The research question of this research is "What is the intrinsic value of CPIN, JPFA, and MAIN based on the DCF-FCFF, RV-PER, and RV-PBV methods in the three conditions (optimistic, moderate, and pessimistic) in 2020?" So that the purpose of this research is to determine the intrinsic value of the company that can be used as a suggestion for investors to invest.

This research applies three scenarios (optimistic scenario, moderate scenario, and pessimistic scenario). Hendrawan and Permadi (2020) explain that the pessimistic condition is determined by the industry's growth projection values, while the moderate condition is a projection that accumulates the industry's growth value added by the gap between industry growth and company growth. Lastly, the optimistic condition is a projection from moderate condition added by half of the gap between industry growth and company growth.

For the Discounted Cash Flow method, this research employs the Free Cash Flow to Firm approach based on the company's internal financial condition. Relative Valuation method with Price to Book Value Ratio and Price to Earnings Ratio was used to compare the conditions of companies in the same category. The results of the DCF-FCFF calculation which are the results of forecasts based on the company's internal conditions are then corrected for the calculation of Relative Valuation.

## II. METHODOLOGY

The DCF method is based on the company's internal financial conditions, namely at the core of its business (Hendrawan and Permadi, 2020). Damodaran (2006) states that the steps to estimate the intrinsic value of stocks using the DCF-FCFF method started to make the basis of projection by classifying historical data. In this research, the historical data analyzed were the financial reports of three animal feed companies listed on IDX from 2015 to 2019. The behavior of the historical data was studied for a certain period. The next step was to make projections under three scenarios based on the data collected. Then, the cash flow was calculated using DCF-FCFF methods before estimating the cost of capital or WACC as the rate to apply a discount to the current period. Next, calculate Terminal Value as the assumed stable period. Subsequently, discount DCF-FCFF and Terminal value before calculating Enterprise Value, which was added by cash and subtracted by debt to get Equity Value. The intrinsic value was obtained by dividing the Equity Value by the number of stocks traded. After the intrinsic value of companies was obtained, an assessment and recommendation for investors can be formulated.

The RV-PER methods referred the calculation to the profit of the companies. The estimated PER value is related to the intrinsic value of the DCF-FCFF calculation. The initial step of the analysis is to find the value of Earnings Per Share (EPS). The EPS value obtained is then entered into the PER formula, which is the intrinsic value of the stock divided by the EPS obtained. Then the PER value is compared with the average industry value. Regarding stock prices, if the industry's average PER is lower than the company PER, then the share price is in an overvalued position, and vice versa.

PBV ratio is calculated by dividing the intrinsic value of the shares and the company's book value. Book Value needs to be obtained before calculating PBV. The formula for calculating Book Value is Total Equity divided by the number of shares outstanding (Brigham dan Ehrhardt, 2010). The next step is to calculate last year's average PBV of each of its peers. The PBV is then compared with the average value in the industry. Regarding stock prices, if the average PBV in the industry is lower than the PBV obtained, the share price is overvalued, and vice versa. The RV-PBV method bases the calculation on the equity of the company, such as the number of outstanding stocks affecting the companies' capital.

## III. RESULTS/FINDINGS

The stock value of CPIN on January 2nd, 2020, was Rp.6,575. Under the pessimistic, moderate, and optimistic scenarios, the intrinsic values generated by DCF-FCFF were RP.3,109, Rp.3,550, and Rp.3,788. The stock value of JPFA on January 2nd, 2020, was Rp.1,535. Under the three scenarios, the intrinsic values obtained from the valuation analysis were Rp.4,727 for pessimistic, RP.5,340 for moderate, and Rp.5,665 for optimistic, respectively. The stock value of MAIN on January 2nd, 2020, was Rp.1,010. Under three scenarios, the intrinsic values of the company, respectively, were Rp.1,715 for pessimistic, Rp.1,780 for moderate, and Rp.1,814 for optimistic.

The average value of PER of animal feed companies was 7.58 times (Based on the data in IDX quarterly Q1 2020). The findings show that under the pessimistic scenario, the PER of CPIN, JFPA, and MAIN was 13.84 times, 23.83 times, and 50.16 times. Under the moderate scenario, the value CPIN was 15.27 times, while the values of JPFA and MAIN were 26.21 times and 51.70 times. Under the optimistic scenario, the value of CPIN was 16.03 times, JPFA was 27.43 times, and MAIN was 52.47 times.

In the data from IDX quarterly Q1 2020, the average PBV of animal feed companies was 2.90 times. Based on the analysis result, under the pessimistic scenario, the PBV of CPIN and MAIN were 2.55 times and 1.88 times, whereas JPFA was 4.84 times. Under the moderate scenario, shows that CPIN and JPFA were 2.91 times and 5.47 times, respectively, while MAIN was 1.95 times. Under the optimistic scenario, shows that CPIN and JPFA were 3.10 times and 5.80 times, while MAIN was 1.99 times.

## IV. CONCLUSION

Based on the intrinsic values obtained, this research has several recommendations. First, the calculation using DCF-FCFF, RV-PER, and RP-PBV, under the three scenarios, suggests investors sell the stocks of CPIN. Then, based on the calculation of DCF-FCFF, under the three scenarios, investors are recommended to buy or keep the stocks of JPFA. Lastly, based on the calculation using DCF-FCFF and RV-PBV, under the three scenarios, the recommendation is that investors buy or keep the stocks of MAIN.

The contribution of this research is that it can provide comparative results when using the DCF-FCFF method as well as the RV-PER and RV-PBV methods so that it can provide a recommendation for investors.

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Hendrawan, R., & Permadi, F. A. (2020). Do Free Cash Flow to Firm and Relative Valuation Method Work in Valuing Building and Construction Companies?: A Test in IDX in 2018. *Proceedings of the 2nd International Conference on Inclusive Business in the Changing World (ICIB 2019)*, 74-84.

# STOCK VALUATION USING FREE CASH FLOW TO FIRM AND RELATIVE VALUATION FOR INVESTMENT DECISION IN PHARMACEUTICAL COMPANIES IN IDX

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***Abstract***

A company's stock is a high-risk investment in which the actual stock fair value is needed for a valuation. This research aimed to estimate the stock fair value of pharmaceutical companies with the biggest market capitalization listed on the IDX. The valuation method employed was Discounted Cash Flow Model (DCF) using Free Cash Flow to the Firm (FCFF), Relative Valuation (RV) using Price to Earning Ratio (PER), and Price to Book Value (PBV) in three scenarios, namely the pessimistic, moderate, and optimistic scenarios. This research used reported data in the form of annual reports from 2015 to 2019, which became the basis of the 2020-2024 projection. The results showed that the stock fair value of three pharmaceutical companies using the DCF-FCFF method in three scenarios, which were pessimistic, moderate, and optimistic, were undervalued. On the other hand, the RV-PER method found that their stock was in the condition of overvalued. Moreover, based on the RV-PBV method in the pessimistic scenario, KAEF was undervalued and KLBF and INAF were overvalued. Meanwhile, in the moderate and optimistic scenarios, all three companies were overvalued.

***Keyword— Fair Value, Discounted Cash Flow, Free Cash Flow to Firm, Relative Valuation***

## I. INTRODUCTION

Indonesia Stock Exchange (IDX), or *Bursa Efek Indonesia* (BEI), is an institution that held capital market trading. It provides various long-term financial instruments, such as bonds, mutual funds, stocks, and other financial instruments. Indonesia is one of the most populous countries in the world with a total population of 268,074,600. For the last five years, people who have health complaints and activity disturbance tended to decline. The decline was seen from the Central Bureau of Statistics' National Economic and Social Survey (Susenas – *Survei Sosial Ekonomi Nasional*), which discovered the public morbidity rate in 2015 was 16.14% and tended to decline in the next three years. It became 15.18%, 14.13%, and reached its lowest point of 13.91% in 2018. The morbidity rate finally increased to 15.38% in 2019. A high level of public morbidity rate made the demand for the availability of pharmaceutical products, medicines, and medical devices need to be prepared.

The large population and high level of morbidity rates in Indonesia investing in pharmaceutical companies are really interesting to observe. Referring to PT Bursa Efek Indonesia announcement No. Peng-00045/BEI.POP/02-2020 on 13 February 2020, which was effective from 17 February 2020, there are 10 pharmaceutical companies' shares included into *Indeks Saham Syariah Indonesia* (ISSI) consisted of Kalbe Farma Tbk (KLBF), Kimia Farma Tbk (KAEF), Indofarma Tbk (INAF), Industri Jamu dan Farmasi Sido Muncul Tbk (SIDO), Tempo Scan Pacific Tbk (TSPC), Darya-Varia Laboratoria Tbk (DVLA), Phapros Tbk (PEHA), Merck Tbk (MERK), Merck Sharp Dohme Pharma Tbk (SCPI), and Pyridam Farma Tbk (PYVA).

The movement in every sector, particularly stock prices, on IDX is very fluctuating including the pharmaceutical sector. There were three companies, that had the biggest market capitalization in the pharmaceutical sector that could represent the movement of the pharmaceutical industry with a total market share of 81%. The three companies were PT Kalbe Farma Tbk. (KLBF), PT Kimia Farma Tbk. (KAEF) dan Indofarma Tbk. (INAF). The movement of stock prices in the capital market tends to be fluctuating and volatile. It led to uncertain yield for investors so that they felt insecure about their investment. Previous studies revealed that stock prices in the stock market were not representing the real value of the company's fundamental performance. Therefore, stock valuation is required to anticipate stock price fluctuation and uncertain investment.

## II. METHODOLOGY

Research procedures are the steps or stages that must be conducted in order to resolve the research questions and achieve the research objective. The research procedure that must be conducted is as follows (Hendrawan et al, 2020): (1). Defining and formulating problems. (2). Conducting a literature study. (3). Determine model or research design: DCF method using FCFF and RV method using PER and PBV approach. (4). Gathering secondary data from the pharmaceutical company. (5). Processing and presenting information: company valuation using DCF method using

FCFF and RV method using PER and PBV approach. (6). Determining the intrinsic value of the analysis results in overvalued, fair, or undervalued. (7). Analyzing and interpreting data. (8). Making conclusions and suggestions.

Damodaran (2006) explained the steps that must be conducted to calculate the stock fair value using DCF with FCFF approach as follow: (1) First step is to Classifying Historical Data as Projection Reference. ( 2) Projecting and Analyzing Financial Ratio using historical Data. (3) Next step is Calculating Cash Flow using Discounted Cash Flow Methods (FCFF). (4) Next, Calculating Weighted Average Cost of Capital (WACC). (5) Calculating Terminal Value (TV). (6) Discounting DCF Methods (FCFF) and Terminal Value (TV). (7) Calculating Enterprise Value. (8) Calculating Company Equity Value (EV). (9) Then, Calculating Price per Share. (10) After getting the result, the last step is Assessing and giving recommendations.

In estimating PER value based on the stock fair value obtained from DCF calculation is by determining Earning per Share (EPS) value first. The result from EPS calculation is used to determine PER by using the formula PER is Revenue divided by EPS. By obtaining existing PER value, the next step is to compare the value per company with industry standards.

Calculating the intrinsic value of each company by using a Price Book Value (PBV), would generate a better result compared to using the PBV ratio of a similar company in the same industry. PBV ratio of each company could be calculated by using the formula Book Value is Total Equity divided by the number of Shares Outstanding. The Book Value should be calculated first before determining PBV. Next, the PBV of each similar company was calculated and averaged in recent years. Then, the average results of the obtained PBV ratio were multiplied with the company's stock price on 2 January 2020 to calculate the present fair value of 2020.

## III. RESULTS/FINDINGS

Based on the result of stocks valuation on pharmaceutical companies registered on the IDX, by using the following methods: DCF Model using Free Cash Flow to Firm (FCFF) approach, and RV method using Price to Earnings Ratio (PER) and Price to Book Value (PBV) approaches, the conclusion could be drawn as the followings:

1. In the pessimistic scenario, the intrinsic value obtained from the calculation by employing a DCF with FCFF approach, for KLBF, KAEF, and INAF stock were in an undervalued condition. In addition, based on the calculation using a RV method with PER, KLBF stock had a value of 43.94 times, while KAEF was 48.33 times and INAF was 1097.94 times. On the other hand, KLBF stock had a value of 6.10 times, KAEF 2.44 times, and INAF 12.67 times. Therefore, it can be concluded that by using PER method, those three companies were in an overvalued condition. Meanwhile, by using a PBV method, KAEF was in an undervalued condition, while KLBF and INAF were an overvalued condition.
2. In the moderate scenario, the intrinsic value obtained based on the calculation by employing a DCF method with FCFF approach, it can be concluded that KLBF, KAEF, and INAF were in an undervalued condition. In addition, based on the calculation using a RV method with PER, KLBF stock had a value of 47.16 times, while KAEF had the value of 64.05 times, and INAF had the value of 1354.89 times. On the other hand, KLBF stock had a value of 6.66 times, KAEF 3.50 times, and INAF 16.67 times. Based on the result of the calculation method using RV with PER and PBV approaches, it can be concluded that those three companies were in an overvalued condition.
3. In the optimistic scenario, the intrinsic value obtained based on the calculation by employing a DCF method with FCFF approach, KLBF, KAEF, and INAF stock were in an undervalued condition. In addition, based on the calculation using a RV method with PER, KLBF stock had a value of 47.26 times, while KAEF had the value of 72.76 times and INAF had the value of 1495.75 times. On the other hand, KLBF stock had a value of 6.73 times, KAEF had a value of 4.13 times, and INAF had a value of 18.98 times. Based on the result of the calculation method using RV method with PER and PBV approaches, it can be concluded that those three companies were in an overvalued condition.

## IV. CONCLUSION

This research can contribute to making investment decision by investors from providing recommendations on company stock that have been analyzed by considering the existing variables. Decision given to investors regarding whether the company shares are worth buying, storing or selling. Depend on the result of the stock's valuation calculation analysis of pharmaceutical companies registered on the Indonesian Stocks Exchange, it could be recommended as follows. For PT. Kalbe Farma Tbk., it is feasible to be bought or saved if it has been owned. This recommendation is supported by the calculation result of DCF-FCFF and stable revenue growth annually. Furthermore, for PT. Kimia Farma Tbk, it is recommended to buy its stocks or save if it has been owned. This recommendation is supported by the calculation result of DCF-FCFF and RV-PBV. Meanwhile, for PT. Indofarma Tbk, it is recommended to buy its stocks or it can also consider the economic, social, and political conditions. This recommendation is supported by the calculation of DCF-FCFF.

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# SUCCESSION PLANNING AMONG THE HERITAGE BUSINESS OWNERS

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***Abstract***

Heritage businesses are an important part of cultural heritage. However, there is a lack of attention on the succession planning of the heritage businesses. This study examines the business success of the heritage businesses in the Melaka and George Town UNESCO world heritage's core and buffer zones. Specifically, the study examines the perception and readiness of the heritage business owners in succession planning. Eight face-to-face interviews were conducted with the heritage business owners. The findings reveal that they are aware of the importance of succession planning but there is no proper action taken to engage the successors. The main reason cited is their uncertainty over the potential successors' interest in succeeding the business. However, most of them are willing to groom the successor if they found that the successors are willing to learn the skills to operate the business.

***Keywords—UNESCO World Heritage Sites, Heritage Business, Succession Planning***

## I. INTRODUCTION

Melaka and George Town were jointly inscribed as the UNESCO world heritage site in 2008 (George Town World Heritage Incorporated, 2019). The inscription was mainly based on the outstanding universal value demonstrated by both cities through the "cultural diversity embodied and embedded in living heritage and built heritage" (George Town World Heritage Incorporated, 2019). An important component of the outstanding universal value the heritage businesses that make up an important part of the lifestyle and the culture of people in Melaka and George Town. The UNESCO world heritage site title has led to a massive influx of tourists. Unfortunately, not everyone in the heritage sites benefited from this change in the social structure. The increase in rental has forced many residents to move out from the heritage sites and shops are repurposed mainly to accommodate for the tourism activities (Shafizan, 2017; Mok, 2019). As highlighted by Shafizan (2017), the original residents and tenants leave the heritage sites together with the "social and cultural history with them". This threatens the conservation of cultural heritage in the heritage sites.

On the other hand, the businesses with heritage values (hereinafter referred to as heritage businesses) are an important piece of the intangible cultural heritage of a community that deserves to be conserved. This study adopts the definition used by George Town World Heritage Incorporated (2012) for the businesses to be included in the Traditional Trade Inventory as the definition of heritage businesses. In general, the heritage businesses need to exist for at least 25 years (preferably more than 50 years), inherit from family or fulfill at least one of the cultural values (cf. George Town World Heritage Incorporated, 2012). Despite the importance of the continuity of heritage businesses in conserving the cultural heritage, the continuity of the heritage businesses receives limited attention. This study examines the continuity of the heritage businesses from the perspective of succession planning, especially in terms of the readiness of the incumbent heritage business owners.

## II. METHODOLOGY

This study collects qualitative data through face-to-face interviews with the incumbent heritage business owners in the core and buffer zones of the heritage sites. The heritage businesses are selected based on the three criteria set by the George Town World Heritage Incorporated (2012), namely existence for more than 25 years, inherited from family or fulfill one of the cultural values. The study interviewed eight heritage business owners from various industries. Six of them have operated for more than 50 years. The other two businesses exist for 28 years and 39 years respectively and are in the second generation of ownership; with the current business owners inherited the businesses from their family members. The interviews focus on understanding the perception and readiness of the current business owners in succession planning.

## III. RESULTS/FINDINGS

The findings from the interviews reveal that while most of the heritage business owners appreciate the importance of succession planning, none of them has engaged in the process of succession planning with the potential successors. The main reason given is their uncertainty over the interest of the potential successors in succeeding the business. Interestingly, the business owners who think that there is no urgency in engaging in succession planning cited the same for them not engaging in the process of succession planning. An alarming finding from the study is that most of the business owners mentioned that they are considering closing the business when they decide to retire. Only one each of the business mentioned that they would let the children, or allowing the existing employees and business partner to succeed the business upon their retirement. Despite the lack of efforts by the incumbent heritage business owners in engaging a successor in succession planning, they express their interest in grooming the successors. They also mentioned the willingness of the successors to learn as the main criteria for them to consider grooming the successors.

## IV. CONCLUSION

The lack of succession planning among the heritage businesses is worrying. While the heritage business owners acknowledge the importance of succession planning and willingness to groom the successor, there is limited action from them to execute the succession planning. This could be due to a lack of communication between the incumbent business owner and the potential successor as the incumbent business owners are concerned about the interest of the potential successor in succeeding the business.

## ACKNOWLEDGEMENT

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# THE ANTECEDENTS OF PUBLIC HEALTH CARE WORKERS' MENTAL HEALTH: A CONCEPTUAL FRAMEWORK

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***Abstract***

The main purpose of this paper was to develop a conceptual model of the antecedents of health care workers' mental health in Malaysian Public hospitals. The current study was performed by reviewing past studies on work environment and mental health. In the reviews, two potential groups of antecedents managed to be found for work environment from various settings which are individual-related factors and organizational-related factors. In regard to this, suggestions were identified for future research to provide a more definitive theoretical statement of work environment as well as develop an additional proposition that can possibly be developed from a more advanced theory.

***Keywords—work environment, mental health***

## I. INTRODUCTION

Employees' mental health issues may cost a massive more than 1% of Malaysia's total Gross Domestic Product(GDP) or RM14.46 billion (Chua, 2020). By 2020, mental illness is projected to be the 2$^{nd}$ major health problem Malaysians suffer from after heart disease (Resolving mental illness issues in Malaysia, 2018). A whopping 500,000 Malaysians experience symptoms of depression (NHMS 2019). A study on mental health issues in Malaysia showed that almost fifty percent of its survey were going through adverse mental well-being issues with different levels of severity during the movement control order (MCO) (Loheswar, 2020). Unfortunately, there is still a lack of understanding of the disease and possible consequences (Resolving mental illness issues in Malaysia, 2018).

Covid-19 pandemic and MCO have resulted changes in the work environment, retrenchment, and fears for personal health have also caused emotional distress to many. Health care workers are facing significant level of stress and anxiety as a result of COVID-19 pandemic (Spoorthy, Pratapa, & Mahant, 2020). Severely constrained human resources in health care organizations worldwide results in health care organization facing the challenges of maintaining high-quality care (Lu et al., 2011). Similarly in Malaysia, there is a shortage of nurses (Kanchanachitra et al., 2011). This shortage has resulted in unrealistic nurse workloads. The incidence of nurses' burnout was high in the period of COVID-19 (Sampaio, Sequeira, & Teixeira, 2020). Huda (2018) reported that 24% of nurses in Malaysia were experiencing burnout.

Different types of physical work environment factors have been found that that there is a relationship with stress. For instance, lack of control at work along with the poor management, lack of social support such as support from co-workers, superiors are important indicators which if managed these problem issues well can avoid stress in work (Putnam & McKibbin, 2014; WHO, 2013). Furthermore, psychosocial work factor also increases effect towards health problems such as depression and anxiety disorders, mental disorders (Leka & Jain, 2010). Hence, there is a need to analyse the relationship between public health care workers' work environment and its impact on health care workers' mental health.

Erlen & Sereika (1997) stated that nurses carry out tasks that require careful care for patients with varying health and emotional issues, meticulous in carrying medical procedures and respond well to critical emergencies. Such working conditions can be a trigger for job stress. Karasek (1979) points out that high strain jobs job trigger psychological and physical distress among employees. This stressful working environment will eventually drain nurses' emotional resources and may thus result in employee burnout.

Consideration towards factors that impact on quality nursing care can assists hospital administrators carry out effective interventions to improve patient outcomes and service. Psychosocial work environment according to Stansfeld & Candy, (2006) is a crucial factor affecting employees' mental health. Increased comprehension into the health care worker work environment and mental health and patient outcomes risk factors can lead to selecting the most relevant strategies for the health care workers.

## II. LITERATURE REVIEW

The work environment has long been recognised as an important predictor of health outcomes. Many studies have documented the effect of hostile psychosocial work factors and the prevalence of mental health problems (Bourbonnais, et al., 2007).

The Job-Demand-Control (JDC) model by Karasek (1979) provides the most critical determinants of work-related wellbeing and health (Lindfors, et al., 2007). Psychosocial work environment(PWE) and mental health literature were reviewed by Stansfeld and Candy (2006) and the authors identified most studies used the demand-control-support(DCS) model as a basis to describe PWE. Bakker et al., (2010) concluded that the job demands-resources(JDR) PWE than both the DCS- and ERI models.

## III. CONCEPTUAL FRAMEWORK

The selection of variables in this study was based on the review of the previous theoretical and empirical evidences. Utilizing the JDR model as the basis for conceptual framework, health care workers' work environment will be studied and its impact on health care workers mental health will be identified. Two essential aspects of work environments: job control resources and psychological job demands were identified. Job demands are defined as psychological stressors, such as requirements for working fast and hard, having a great deal to do, not having enough time and having conflicting demands (Karasek, 1979). Job control has been described as the worker's ability to control his own activities and skill usage (Karasek & Theorell, 1990).

## IV. CONCLUSION

The present study set out to describe the relevant studies from a considerable amount of literature in regard to employees' mental health and its antecedents. On top of that, there remains a paucity of evidence in understanding the factors. The current paper provides a conceptual framework for the purpose of providing an opportunity to scholars and practitioners in exploring the framework in order to further explain the relationship between employees' working environment regard to mental health.

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# THE DETERMINANTS OF FERTILITY RATE IN MALAYSIA

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***Abstract***

Malaysia has been experiencing a decline in the fertility rate for the past decades. This study aims to identify the effect of female labour participation rate, infant mortality rate, income per capita and government health expenditure on fertility rate in Malaysia. This study analyses time-series data from 1988 until 2018 using ARDL cointegration techniques and ECM estimation. The fertility rate is found to be unaffected by the female labour participation rate. Meanwhile, infant mortality rate and government health expenditure have significant positive relationships with fertility rate in both the long run and short run. The income per capita, on the other hand, only affects the fertility rate positively in the short run. To solve the problem regarding the fertility rate, initiatives should be taken based on the factor affecting the fertility rate.

***Keywords—fertility, female labour participation rate, health expenditure, infant mortality rate***

## I. INTRODUCTION

Numerous states all over the world are currently experiencing demographic transition, with fertility rates below replacement levels for more than 80 nations, which is about half of the world's population. In 2018, the average global fertility rate is 2.4 births per woman. The total fertility rate experienced a slight increase from 4.979 births in 1960 to 5.055 births in 1964. The total fertility rate continues to decline until 2018.

A decreasing trend of fertility rate over the past decades shows that Malaysia's fertility rate is at its bottom level and is expected to decline even lower in the future. The decline in the fertility rate is one of the demographic factors that contribute to population ageing. In the future, decreasing in population will reduce the total consumption as there will also be a smaller number of consumers to spend on the daily expenditure. Consumption, along with investment, government expenditure and net exports, is one of the items in Gross Domestic Product (GDP). Hence, a decrease in consumption will correspondingly reduce the Gross Domestic Product (GDP).

Besides, the decline in the fertility rate will also cause a reduction in the working age (15-64) population in the future. Since the governments are required to pay for the retirement programs for older citizens, it becomes harder to support the programs as the number of paying into them which are the working-age population has been reduced (Yasin & Helms, 2010). Hence, the country needs to find other alternatives to solve the problem of declining fertility rates.

Many factors contribute to a decline in the fertility rate and many studies have been done regarding the factors that influence the fertility rate in Malaysia. The factors are female labour participation rate, infant mortality rate, income per capita as well as government health. However, most of the recent research in Malaysia did not include government health expenditure as the determinants of fertility rate. Hence, we will include government health expenditure in our study along with female labour participation rate, income per capita and infant mortality rate as my independent variables.

In this study, research regarding income per capita, infant mortality rate, female labour participation rate and government health expenditure with fertility rate in Malaysia is to be conducted.

## II. METHODOLOGY

There are four variables used in this study which are total fertility rate (TFR), female labour participation rate (FLPR), the infant mortality rate (IMR), per capita real GDP (RGDPC) which is the proxy for income per capita and government health expenditure (GHE). The data for all variables are acquired from the Department of Statistics, Malaysia except for per capita real GDP which is obtained from the World Bank. This study is a time series study and all the data are annual data from 1988-2018 (Tang & Tey, 2017; Cannonier, 2012; Idris et al., 2018).

The specific model used are: $TFR_t = \alpha_0 + \alpha_1 \, FLPR_t + \alpha_2 \, IMR_t + \alpha_3 \, \ln RGDPC_t + \alpha_4 \, \ln GHE_t + e_t$

## III. RESULTS/FINDINGS

In the long run, the fertility rate is positively affected by infant mortality rate and government health expenditure at 5% and 10% significance level respectively. Meanwhile, infant mortality rate and real GDP per capita have a positive relationship with fertility rate at 5% significance level while government health expenditure has a positive relationship with fertility rate at 10% significance level in the short run.

## IV. CONCLUSION

In conclusion, the fertility rate is affected by infant mortality rate and government health expenditure in the long run as well as infant mortality rate, income per capita and government health expenditure in the short run. An increase in infant mortality and government health expenditure causes an increase in fertility rate both in the short run and long run. The income per capita, on the other hand, only impacts fertility rate in the short run where an increase in income per capita causes an increase in fertility rate. In contrast, female labour participation does not have any significant impact on the fertility rate. Hence, appropriate policy and initiatives should be implemented to help solve the problem with the fertility rate and thus widen the population.

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# THE EFFECT OF DIGITAL READINESS AND STRATEGIES FOR IMPLEMENTING ON OUTCOMES OF SMART GOVERNANCE FOR REALIZING SMART CITY

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***Abstract***

Digital readiness is a developmental stage that describes the tendency, desire, and willingness to take action. Which can change today's business work models and industry structures to create unprecedented opportunities. Smart cities and smart governance are examples of digital transformation using ICT. In its application, digital readiness is needed to support performance in implementing smart cities and smart governance. Seeing this phenomenon, this study aims to see the effect of digital readiness and strategies for implementing smart governance on the outcomes of smart governance to realize a smart city within the Bandung City Government as the implementer in realizing a smart city.
This study collected 400 questionnaires from 27 offices in the City Government of Bandung, online via the website link and offline by visiting the respective offices. This study concludes that digital readiness and strategies for implementation affect the outcomes of smart governance to support the implementation of smart cities. Digital readiness can be said to have an important role in facing the digital transformation process that is taking place anywhere.

***Keywords—Digital Readiness, Smart City, Smart Governance, ICT, Digital Transformation.***

## I. INTRODUCTION

The smart city is a concept of developing, implementing, and implementing technology used in an area or urban area as an interaction between the various systems in it. The goal of a Smart city is to be able to achieve information and management of city planning that is integrated with the system. Integration can be done through digital network management of urban geography, human resources, environment, social, and economy. In its implementation, the smart city does not escape from the role of digital transformation where regions or cities that implement Smart cities have started to develop, apply digital transformation to connect people, information, and city elements by using new technology. Smart governance can be defined as smart city governance, where the governance component usually focuses on local government because it is an institution that depends on urban life. Therefore, smart governance in the dimension smart city is a vision of governance that is carried out wisely, that is, it can change the traditional bureaucratic style, resulting in faster, more effective, efficient, communicative, transparent, and responsible business process governance. According to (Bandung Smart City Forum, 2020), Smart Government and e-government are the foundation of Smart governance in Smart cities. Therefore, to support the realization of Bandung Smart city, e-government has become a well-known field of information systems research. In previous research, the terms digital government, e-governance, and e-government are often synonymous as they all relate to the use of information and communication technology (ICT) to improve public service delivery.

Smart cities and smart governance are examples of digital transformation using ICT. In its application in need of digital readiness to support the performance in the implementation of smart city and smart governance. Digital readiness is a process of digital transformation. Digital readiness is a stage that describes the willingness to take action. At the same time, numbers are defined as tools and applications of digital technology. It must be able to transform current business work models and organizational structures to create unprecedented opportunities. (Windasari et al,2018). According to Ayanso et al, 2011 in Zuntini & Sanchez, (2019). The e-government readiness index has been motivated by the need to develop a common measure to assess the readiness of various countries to transform to electronic governance.

## II. LITERATURE REVIEW

Smart governance is a form of implementing digital transformation. Smart city and smart governance in their application use ICT to support smooth implementation, so that smart city and smart governance can be said to be a form of digital transformation for the governance of a city. Digital transformation is a process of adoption and practice to help public organizations face an increasingly digital world. The need for digital transformation involves adapting to the use of technology by citizens, civil society, government agencies, businesses, and other stakeholders (Zuntini & Sanchez, 2019). Also, transformation does not only involve the implementation of technology but other factors such as strategy articulation, talent management, and leadership. These factors can be expressed as e-readiness (Supriyanto and Mustofa, 2016). Digital readiness is a process of digital transformation. According to (Westermann, et al,2014 in Windasari et al,2018) proving the success of an organization with good digital readiness will generate good income and profitability.

Digital readiness is a developmental stage that describes the tendency, desire, and willingness to take action. Which can change today's business work models and organizational structures to create unprecedented opportunities. (Windasari et al,2018). Therefore, digital readiness is defined as the trend and willingness to switch to and adopt digital technology (ICT), and to use this technology to enable individuals, organizations, industries, and countries to achieve their goals faster and to create bigger opportunities, and innovations. (Windasari et al,2018).

## III. CONCEPTUAL FRAMEWORK

Based on the literature studied in this study, it was found that the variable digital readiness and the strategy for implementing smart governance had a relationship with the variable outcomes of smart governance. So based on the literature review, these study researchers will examine the model of the influence of the independent variable (digital readiness and the strategy for implementing smart governance) on the dependent variable (outcomes of smart governance). Based on the framework that will be tested in this study, this study proposes three hypotheses to be tested.

## IV. METHODOLOGY

This study collected 400 questionnaires from 27 offices in the City Government of Bandung, online via the website link and offline by visiting the respective offices. Data analysis used in this study is multiple linear regression, where this study will analyze the influence of the variable Digital Readiness and Strategies for Implementing smart governance on the outcomes of smart governance to realize a smart city.

## V. CONCLUSION

This study concludes that digital readiness and strategies for implementation affect the outcomes of smart governance to support the implementation of the smart city. Digital readiness can be said to have an important role in facing the digital transformation process that is taking place anywhere. Therefore, digital readiness is defined as a trend and willingness to switch to and adopt digital technology, and to use this technology to enable individuals, organizations, industries, and countries to reach their goals faster and to create greater opportunities for new innovations. The success of an organization with good digital readiness will result in a good performance. The level of performance of organizations that have digital readiness is much higher than organizations that have lower levels of digital readiness.

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# THE IMPACT OF COUNTRY GOVERNANCE FOR IMPROVED ENVIRONMENTAL PERFORMANCE

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**Abstract**

At present, many economies are suffering from environmental problems that have significant effects on the climate and life of human beings, thus, the governments and institutions work to reduce the industrial negative effects on the environment. Past studies focus on the relationship between economic development and environmental performance (EP) at the company or institution level. This study examines the relationship between country governance and environmental performance at the country level. The data of country governance obtained from Worldwide Governance Indicators (WGI) and Environmental Performance Index (EPI) for the period 2006-2016. For the analysis, the study employs a panel regression model. The findings revealed that country governance has significant relationship with EP.

**Keywords:** Country governance, Environmental performance, Environmental Performance Index, Worldwide Governance Indicators

## I. INTRODUCTION

When one looks at this from another perspective, government governance (CG) can be viewed as a much better factor to minimize environmental degradation and improves environmental conservation. Before that, CG was widely defined as actions administered through government institutions to change the negative impact on the efficiency of a country's means of operation, i.e. minimizing or eliminating corruption, pollution, or poor regulations, etc. (Oluwatobi et al., 2015). Prior literature showed that CG encourages a higher probability of a country's investment behavior, and drives a much more efficient economic growth (Farla, 2014). Sena et al. (2018) found that a government's effectiveness and rule of law acts promoted higher levels of innovation, and facilitated economic growth. CG also demonstrated that higher levels of regulatory quality reduced information asymmetry, increased accountability, and curtailed corruption.

The establishment of good CG practices, which includes demonstrating an effective CG amongst developing and developed countries, has been a prerequisite amongst international agencies, institutions, non-governmental organizations (NGO), sponsor countries, and foreign investors. This is because it acts as a baseline for economic assistance or investment. Xu and Yano (2017) mentioned that CG has many functions and contributions, such as enhancing a country's investment ambiance, generating more economic activities, encouraging innovations, and promoting economic growth, besides maintaining or harmonizing a country's laws and regulations. Effective CG, with strong anti-corruption efforts, and sound government delivery systems, will promote local and foreign investors to have greater willingness to contribute toward private and public investments, as well as promote EP as a sustainable development option.

## II. METHODOLOGY

In this study, CG is best measured by the Worldwide Governance Indicators (WGI). With the presence of CG, economic development will work within the laws and regulations that ensure EP achieves the desired outcome. WGI published aggregate and individual governance indicators for over 200 countries in 1996–2015. Total six dimensions to evaluate the effectiveness of country governance. EP was measured using the Environmental Performance Index (EPI). EPI data is divided into two categories, i.e., Environmental Health and Ecosystem Vitality. Both are the main objectives in the EPI report. Environmental Health measures human health as a result of environmental degradation, while Ecosystem Vitality measures environmental protection and natural resources management. Environmental Health and Ecosystem Vitality are proactive environmental management approaches towards sustainable environmental development, which aims to improve environmental sustainability without compromising the quality, performance, functionality, aesthetics, and cost (Johansson, 2002; Nielsen and Wenzel, 2002).

## III. RESULTS ANALYSIS

To investigate the relationship between WGI and EPI, the following analysis will examine the respective variables of WGI, including Voice and Accountability (VA, Political Stability and Absent of Violence or Terrorism (PSAVT and Regulatory Quality (RQ and F-Test towards the respective variables of EPI, including Health Impact (HI, Water Resources (WR, Biodiversity and Habitat (BH, Product Natural Resources (PNR, and Climate and Energy (CE. The data were categorized into developing countries and developed countries

For developed countries, variables in the pooled sample are insignificant, except RQ is negatively regressed with BH. The literature on continual progressive economic development and corruption demonstrates how an improvement in developing economic conditions increases voter education, awareness, and information levels. Voters who are better educated and informed threaten or pressure the government's ability to stay in power, since they may uncover corrupt behavior of the politicians (Neudorfer, 2018. Therefore, research on democracy and corruption discusses that transparency unveils corrupt behavior, while political rights empower voters to oust corrupt politicians due to the awareness from the middle-class, as well as a better quality of lifestyle which demands corruption-free societies, including environmental conservation.

For developed countries, the VA is positively significantly related to HI, BH, and PNR Boer (2011 suggested that positive healthcare includes happiness, wellbeing, and life satisfaction, which produces quality voice and better accountability amongst the citizens. Collier and Hoeffler (2009 investigated the effect of democracy in developed countries on growth, which was distinctive in resource-rich societies, for example, Norway, Netherlands, United States, and Australia, due to the strong check and balances culture, which is often missing in newly established democracies, or developing countries. The check and balance culture are important for accountability.

## IV. CONCLUSION

Country governance (CG is important in managing economic and environmental resources, as it is crucial to be included in explaining the EPI.

This study also demonstrated that CG influences EP due to such elements as the government’s effectiveness, state of corruption, laws, and regulation, etc., which impact it negatively or positively, both directly and indirectly. The relationship between CG and EP also provided an insight that summarized CG may be potentially devastating or may offer an improvement for EP across several perspectives, including governance, regulations, and enforcement.

The implication acts of this study serve as an input for improving CG based on WGI indicators across governments, policy-makers, or institutions in developing and developed countries. The improvement from CG will be able to enhance the performance of EPI through accountability, minimizing the political instability, enhancing government delivery systems, providing a high standard of regulatory quality, and upholding the rule of law principles by minimizing corruption.

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# THE IMPACT OF PROMOTIONAL MIX ON BUYING BEHAVIOUR OF FEMALE CONSUMER TOWARDS SKIN CARE PRODUCTS

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***Abstract***

The demand for skin care products has increased dramatically due to self-image and self-consciousness among females. The skin care industry has also become very competitive today. Hence, this study aims to examine the impact of the promotional mix on the purchase intention of female consumers towards skin care products. This study has recruited 200 female respondents from Melaka using convenience sampling. A survey was done to collect the data for the study. Five independents variables, namely advertising, sales promotion, direct marketing, personal selling and public relation were hypothesised to explain the purchase intention of female consumers towards skin care products. Constructs were validated and tested using PLS-SEM. Sales promotion and public relations both influence purchase intention positively but not for advertising, direct selling and personal selling. The findings have thus implied that sales promotion and public relations are predictors of the purchase intention of female consumers. This has suggested to marketers that emphasis should be given to these two variables in the marketing plan.

***Keywords: Promotional Mix, Buying Behaviour, Female Consumer, Skin Care Products***

## I. INTRODUCTION

Females are very concerned about self-image and self-consciousness. There are more and more new brands of cosmetic are developing and entering the cosmetic market. According to Allied Market Research (2020), the Malaysian skin care market was at \$804.5 million in 2019 and is expected to reach \$1.28 billion by 2027. This has shown that the market of skin care products will expand in the near future. Hence, marketers need to have a more effective marketing strategy that can attract consumer as the cosmetic industry is very competitive Previous studies have shown that promotional mix is one of the effective strategies that marketer can develop to attach more customers and influence their buying behavior for maximizing their sales and gain more profit (Shallu & Gupta, 2013). Thus, this study aims to understand how the promotional mix, namely advertising, sales promotion, direct marketing, personal selling and public relation influence the purchase intention of consumers towards skin care products.

## II. METHODOLOGY

In this study, 200 female respondents from Melaka were recruited using convenience sampling. The data was collected with a set of self-administered questionnaires which consists of respondents' profiles and all the variables in the model. All the construct measurements were adapted from the previous study (Ampofo, 2014; Bakewell & Mitchell, 2003; Bishnoi & Sharma, 2009; Khraim 2011; Kokoi, 2011; Koshy & Manohar, 2015; Reis, 2015; Shallu & Gupta, 2013; Shamout, 2016; Yousif, 2016; Zeenaf, 2012). All the constructs were then validated and tested using PLS-SEM.

## III. RESULTS/FINDINGS

The convergent validity is satisfactory with all the factor loadings greater than 0.5 (Byrne, 2016), composite reliability greater than 0.7 and average variance extracted greater than 0.5 (Hair et al., 2017). The discriminant validity was examined using the Heterotrait-monotrait (HTMT) (Henseler et al., 2015) with all the HTMT values less than $HTMT_{.85}$ (Franke & Sarsterd, 2019). All the VIF values are less than 5 (Hair et al., 2017). Sales promotion and public relations are significant but not for advertising, direct marketing and personal selling. This has shown that sales promotion and public relations have a positive influence on the purchase intention of female consumers towards skin care products. There is 45.4% of the total variation of purchase intention of the female customers is explained by the model. The model has adequate predictive relevance with a $Q^2$ value of 0.194.

## IV. CONCLUSION

The findings have shown that sales promotion and public relations are important factors in the purchase intention of female consumers towards skin care products. Sales promotions such as vouchers and price discounts are seen as the factors that considered by the female consumers during their purchase. Public relations such as friends' recommendations, reviews by others and social media have also affected female consumers towards their purchase intention as well. Thus, the marketers of skin care products should focus more on these areas when developing the strategic plan. This study also provides an insight into the purchase intention of female consumers towards skin care products.

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# THE IMPACTS OF RESIDENTIAL ENVIRONMENT ON MALAYSIANS' PERCEPTIONS TOWARDS HOUSING

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***Abstract***

Today, the general perception towards the favourability of owning a home is declining worldwide. This may be implied through the rise of generation rent and the growing number of overhung affordable residential projects nationwide. Given the importance of housing to the wellbeing of citizens, and the contribution of construction and household consumption to the economy, encouraging a favourable disposition towards housing has never been more vital. This study investigates the characteristics of the residential environment that improves Malaysians' perceptions towards housing. The study proposes that favourable perceptions of the location, neighbourhood, and structural factors of the residential area will have significant impacts on both a person's attitude towards housing as well as their subjective norms. The subjective norms will in turn further strengthen the person's disposition towards housing. Data was obtained using self-administered questionnaires, in paperback format. The responses were obtained and tested using partial least squares structural modelling (PLS-SEM). The results find that all the hypothesised paths are significant except the relationships between location and subjective norms, and between subjective norms and attitude. The findings suggest that favourable perceptions towards housing are determined primarily by one's predisposition towards the environment rather than through the influence of others. This study is of interest to local development authorities, homebuyers, and residential developers.

***Keywords — perceptions of housing, housing sustainability***

## I. INTRODUCTION

To date, the residential overhang is a pressing problem that inhibits the Malaysian property market. Based on data obtained from the Department of Valuation and Property Services (the Ministry of Finance Malaysia), it may be noted that the majority of these houses are from the affordable category. Thus, affordability may not be the only factor that affects one's predisposition or perception towards the importance of housing. Various factors appear to destabilize the housing market, and this is often linked to environmental factors such as crime (Hew, Goh, Low & Lau, 2020).

The theory of planned behaviour (TPB) is often studied on how the predisposition (attitude) and social pressure (subjective norms) affect an intended behaviour, but not much research is conducted on what are the factors that affect the predisposition (attitude) and subjective norms. This study contributes to the theory by exploring the environment as an antecedent to attitudinal dimensions of TPB. The study hypothesises that the general environment (the location, neighbourhood, and structural factors) of the residential area will have significant impacts on attitudinal factors (attitude and subjective norms) and that the subjective norms will further affect attitude, creating a favourable disposition (perception) of housing. This will be a condition that motivates Malaysians to seek housing and rejuvenate the housing market for the betterment of the economy and society.

## II. METHODOLOGY

Data was obtained through surveys, using self-administered questionnaires which were distributed in the southern region of Malaysia during early to mid-2019. A total of 116 valid responses were used for the analysis. The sample size is deemed to be appropriate due to the nature of PLS-SEM that is robust under smaller sample conditions. The responses obtained were analyzed using Partial Least Squares structural equation modelling (PLS-SEM) using SmartPLS version 3 to test for the goodness of data, quality of indicators, construct, convergent and discriminant validity, and path analysis for hypotheses testing. All the required steps for the analysis were performed following SEM methodology (Hair, Hult, Ringle & Sarstedt, 2016).

## III. RESULTS/FINDINGS

In brief, five out of seven hypothesised paths were found to be significant. Initially, the general environment (the location, neighbourhood, and structural factors) was hypothesised to have significant impacts on attitudinal factors (attitude and subjective norms), and subjective norms will in turn influence attitude. All the hypotheses are supported except for the relationships between location and subjective norms, and between subjective norms and attitude. The final structural model, in addition to having favourable path results, is supported with good convergent and discriminant validities, with factor loadings above 0.5, average variance extracted above 0.5, composite reliability values greater than 0.7, HTMT ratio of correlations below 0.85, and R-squares that suggest a moderate predictive ability.

## IV. CONCLUSION

In brief, this paper has explored how the general residential environment, characterized by favourable location, neighbourhood characteristics, and the presence of desired structural factors, affect residents' perceptions towards housing. The study revealed an interesting finding that this perception is determined primarily by residents' observances of the environment rather than being influenced by their social circle. The study also explored the Theory of Planned Behaviour from another angle by focussing on factors determining attitude, the perception rather than the effects of the attitude. It also explores the role of the environment as an antecedent to attitude This research contributes to the field of social psychology and environmental psychology.


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# THE OPTIMAL PORTFOLIO DESIGN AND PERFORMANCE: ACTIVE AND PASSIVE MANAGEMENT BASED ON FINANCIAL RATIOS IN THE LQ45 INDEX

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***Abstract***
This research offers a solution to the complexities in stock investment activities, such as the classification of stocks, duration, return, risk, variance, and performance by designing an optimal portfolio of active (annual and semi-annual) and passive management with a composition based on the issuer's financial statements in LQ45 in 2015-2019. This research aims at discovering the optimal portfolio results based on the ranking of six portfolio compositions, namely High-ROE, Medium-ROE, Low-ROE, High-Tobin's, Medium-Tobin's, and Low-Tobin's, contrasting the return and portfolio risk, and comparing the portfolio performance ratios of Sharpe, Treynor, and Jensen. The investigation found that the values were varied; some portfolios scored above and below the average. A good company condition can be an inaccurate choice and still needs to be carefully assessed. The passive portfolio management showed the highest value with an average total return of 19.977% and a risk of 18.230%, followed by the annual active management, and semi-annual active management. The optimal portfolio for passive management was obtained by the composition of Medium-ROE, the optimal portfolio for annual and semi-annual active management was obtained by the Medium-Tobin's Q portfolio. Lastly, the ratio of Sharpe was the best portfolio performance evaluation, followed by Treynor, and Jensen.

***Keyword—optimal portfolio, portfolio management, portfolio performance, ROE, Tobin's Q***

## I. INTRODUCTION

The Indonesian capital market in 2015-2019 showed an increase in joint-stock trading according to the Financial Services Authority (OJK, Otoritas Jasa Keuangan) report, which can be seen from the increase in the number of listed companies, volume, and trading value (www.ojk.go.id). The occurrence of fluctuating movements in the index price, company stocks, and company conditions results in various benefits and risks.

Markowitz (1952) offers a breakthrough in the portfolio management framework called "Modern Portfolio Theory" (MPT). The investor's biggest challenge is explained as finding the perfect combination of stocks (risky assets) toward expected return and variance. Stotz (2005) states that portfolios should focus on return and risk management to achieve the investors' goals. There are two portfolio management approaches, namely; passive and active.

Hendrawan and Salim (2017) suggest that the sustainability of a company in the future can be measured by analyzing the fundamentals of companies that trade stocks, and it can be seen historically from financial reports using Tobin's Q ratio. Pham (2018) concluded from 25 portfolios that industry concentration (ROE) positively affects stock returns, while company efficiency (Tobin's Q) affects negatively. Shaikh et al. (2016) show that the evaluation of portfolio performance using the ratio of Sharpe, Treynor, Jensen, M-square, and Information Ratio is feasible.

This research analyzes the data from financial statements of companies listed consistently in the LQ45 period for ROE and Tobin's Q as a form of portfolio composition, as well as the data on daily historical stock prices. Portfolio performance measurement employs the Sharpe, Treynor, and Jensen ratios.

## II. METHODOLOGY

The research population is all issuers registered in the LQ45 Index. The sampling technique used is purposive sampling to find the issuers listed consistently in the LQ45 Index during 2015-2019, resulting in 28 issuers as the selected sample. Data analysis technique:

1. Initial Calculation
   a. The collection of the data on daily closing prices of 28 issuers and IDX Composite or Jakarta Stock Exchange Composite Index (JKSE).
   b. The calculation of return on daily closing price data (Elton et al., 2014).
   $$R_i = \frac{Y_i - P_i}{P_i} \quad (1)$$
   $R_i$ : stock return, $Y_i$ : latest stock price, and $P_i$ : previous stock price.
   c. The calculation of the expected return of the stock (Elton et al., 2014).
   $$\underline{R_i} = \frac{\sum_{j=1}^{M} R_{ij}}{M} \quad (2)$$

$\underline{R_i}$ : expected return of securities-$i$, $R_{ij}$ : return number-$i$ in period-$j$, and $M$ : the same probability of return (number of periods).

d. The calculation of variance and standard deviation of stocks (Elton et al., 2014).

$$\sigma_i^2 = \frac{\sum_{j=1}^{M} (R_{ij} - \underline{R_i})^2}{M} \tag{3}$$

$$SD = \sqrt{\frac{\sum_{j=1}^{M} (R_{ij} - \underline{R_i})^2}{M}} \tag{4}$$

$\sigma_i^2$: return variance, $SD$ : standard deviation, $R_{ij}$ : return number-$i$ in period-$j$, $\underline{R_i}$ : expected return of securities-$i$, and $M$ : the same probability of return (number of periods).

e. Beta calculation (Elton et al., 2014) and alpha calculation of stocks (Elton et al., 2014).

$$\beta_i = \frac{\sigma_{im}}{\sigma_m^2} \tag{5}$$

$\beta_i$ : beta of stocks, $\sigma_{im}$ : return variance between securities number-$i$ with market return variance, and $\sigma_m^2$: market return variance.

$$\alpha_i = \underline{R_{it}} - \beta_i \times \underline{R_{im}} \tag{6}$$

$\alpha_i$ : alpha of securities, $\underline{R_{it}}$ : expected return of stock investment-$i$, $\beta_i$ : beta of securities number-$i$, and $\underline{R_{im}}$ : expected market return.

f. The calculation of stock unsystematic risk in the form of residual error variance (Bodie et al., 2018).

$$\sigma_{(ei)}^2 = \sigma_i^2 - \beta_i^2 \times \sigma_m^2 \tag{7}$$

$\sigma_{(ei)}^2$ : residual error variance (unsystematic risk), $\sigma_i^2$ : return variance of securities, $\beta_i^2$ : beta of securities, and $\sigma_m^2$ : market return variance.

g. The calculation of the risk-free rate value.
The risk-free rate is the interest rate issued by Bank Indonesia, called the BI Rate, for portfolio risk adjustment (https://www.bi.go.id). The interest rate is calculated according to active and passive management, which is then divided into daily values.

2. ROE ratio calculation (Bodie et al., 2018) and Tobin's Q ratio calculation (Hendrawan dan Salim, 2017).

$$ROE = \frac{Net\ Income}{Shareholder's\ Equity} \tag{8}$$

$$Tobin's\ Q = \frac{Market\ Price + Total\ Liabilities}{Book\ Value\ Equity + Total\ Liabilities} \tag{9}$$

$$Market\ Price = Stock\ Price \times The\ Number\ of\ Shares\ Outstanding \tag{10}$$

3. The design of active and passive portfolio management.
Active portfolio management is designed based on the ranking of the ROE and Tobin's Q ratio values both for the annual and semi-annual, with the intention that the composition of the portfolio can change according to variances in the ratio value that affect the ranking. Passive management uses a Buy and Hold strategy.

4. The design of a weighted portfolio using a balanced proportion of the value of stock market capitalization (Copeland et al., 2014).

$$W_i = \frac{the\ market\ value\ of\ individual\ assets}{the\ market\ value\ of\ all\ assets} \tag{11}$$

5. The calculation of the expected return and portfolio risk, by calculating the beta and alpha portfolios beforehand (Elton et al., 2014).

$$\beta_p = \sum_{i=1}^{N} X_i \times \beta_i \tag{12}$$

$$\alpha_p = \sum_{i=1}^{N} X_i \times \alpha_i \tag{13}$$

$\beta_p$ : portfolio beta, $X_i$ : proportion of securities number-$i$, $\beta_i$ : beta of stocks, $\alpha_p$ : portfolio alpha and $\alpha_i$ : alpha of securities.

$$\underline{R_p} = \alpha_p + \beta_p \times \underline{R_m} \tag{14}$$

$\underline{R_p}$ : expected return portfolio, $\alpha_p$ : portfolio alpha value, $\beta_p$ : portfolio beta value and $\underline{R_m}$ : expected market return.

$$\sigma_p{}^2 = \beta_p{}^2 \times \sigma_m{}^2 + \left(\sum_{i=1}^{n} X_i \times \sigma_{ei}\right)^2 \tag{15}$$

$\sigma_p{}^2$ : portfolio variance or risk, $\beta_p{}^2 \times \sigma_m{}^2$ : market-related risk (systematic risk) and $(X_i \times \sigma_{ei})$ : weighted average of the unique risk of each security.

6. The evaluation of portfolio performance using the Sharpe, Treynor, and Jensen ratios (Bodie et al., 2018).

$$\hat{S}_p = \frac{\underline{r_p} - \underline{r_f}}{\sigma_p} \tag{16}$$

$$\hat{T}_p = \frac{\underline{r_p} - \underline{r_f}}{\beta_p} \tag{17}$$

$$\hat{J}_p = \underline{r_p} - \left[\underline{r_f} + \beta_p(\underline{r_M} - \underline{r_f})\right] \tag{18}$$

$\hat{S}_p$ : Sharpe ratio portfolio, $\hat{T}_p$ : Treynor ratio portfolio, $\hat{J}_p$ : Jensen ratio portfolio, $\underline{r_p}$ : the average portfolio returns during the observation period, $\underline{r_f}$ : the average risk-free rate of return during the observation period, $\sigma_p$ : standard deviation of portfolio returns during the observation period, $\beta_p$ : Portfolio beta and $\underline{r_M}$ : expected market return (IDX Composite).

## III. RESULTS

Table 3.1. The Optimal Portfolio 2015-2019

| Passive Portfolio Management 2015-2019 | | | | | |
|---|---|---|---|---|---|
| Portfolio | Total $\underline{R_p}$ | Total $\sigma_p{}^2$ | Total $\hat{S}_p$ | Total $\hat{T}_p$ | Total $\hat{J}_p$ |
| **Medium-ROE** | 39,73703% | 17,45122% | 0,87095% | 0,01265% | 0,01254% |
| Low-ROE | 33,18036% | 17,04947% | 0,49392% | 0,00888% | 0,00729% |
| Average | 19,97752% | 18,23081% | 0,06683% | 0,00027% | -0,00371% |
| IDX Composite | 23,26952% | 9,18740% | 0,36551% | 0,00318% | 0,00000% |
| Annual Active Portfolio Management 2015-2019 | | | | | |
| **Medium-Tobin's Q** | 43,52011% | 17,60943% | 8,42227% | 0,09296% | 0,09460% |
| Average | 18,37225% | 18,67135% | 2,04275% | 0,00091% | -0,02107% |
| IDX Composite | 23,26952% | 9,16230% | 8,49586% | 0,01664% | 0,00000% |
| Semi-annual Active Portfolio Management 2015-2019 | | | | | |
| Medium-ROE | 34,61517% | 18,99541% | 12,24269% | 0,11642% | 0,10670% |
| **Medium-Tobin's Q** | 40,52879% | 17,60139% | 14,65264% | 0,15651% | 0,15836% |
| Average | 15,04342% | 19,16083% | 4,88031% | -0,01489% | -0,07684% |
| IDX Composite | 23,26952% | 9,15077% | 15,65676% | -0,02244% | 0,00000% |

*Note:* IDX Composite as a market value comparison.
*Source:* Data processed by the author

## IV. CONCLUSION

The design of the stock portfolio in the LQ45 Index based on the ROE ratio and Tobin's Q ratio produces various values, some below and above the average. A good company's ROE and Tobin's Q ratio are not guaranteed to construct an optimal or efficient portfolio. These results prove the necessity to carefully assess the stock price movements, the company's condition history, timing, duration, and asset composition in designing a portfolio. High returns are not necessarily the right choice as they can be accompanied by high risks.

The optimal portfolio was chosen because it generate the highest total return with below average risk and above average performance of all the 6 designed portfolios. Based on the results of this study, the optimal portfolios are the Medium-ROE portfolio of passive management and then the Medium-Tobin's Q portfolio of annual active management and the semi-annual one. The order of portfolio performance starting from the highest overall is the ratio of Sharpe, Treynor, and, lastly, Jensen. The calculation of the average total portfolio composition shows the comparison of the best in terms of return and risk is passive management, annual and semi-annual active management. From the three optimal portfolios mentioned above, it is recommended that investors build an annual active portfolio at Medium-Tobin's Q composition because it has the highest return.

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# VALUATION OF TOURISM, RESTAURANTS, AND HOTEL INDUSTRY'S STOCK IN INDONESIA

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***Abstract***

This research aims at analyzing the reasonable price of three companies in subsectors: Tourism, Restaurant, and Hotel, which are considered to be leading companies in ISSI-indexed companies, including KPIG, INPP, and SHID. Fair value analysis was conducted on the three companies' stocks by employing the DCF method, FCFF approach, and Relative Valuation with PER and PBV approaches. It was conducted in three scenarios (pessimistic, moderate, and optimistic), to the historical data of the Annual Financial Report 2015-2019, used as the projection basis in 2020-2024. By employing the DCF-FCFF approach, it was revealed that the Three companies' stock price was overvalued in all scenarios. Through the RV-PER approach, it was revealed that the three companies' stock price was overvalued in all scenarios. RV-PBV approach revealed that the three companies' stock price was undervalued in all scenarios. Investor needs to consider other factors in making decisions. Recommendations from the researchers are by comparing the company's stock price with the result of moderation valuation scenario.

***Keywords—DCF, FCFF, PBV, PER, Valuation***

## I. INTRODUCTION

Tourism, restaurant, and hotel subsectors in Indonesia have experienced significant growth in the last 4-5 years. In 2018, this subsector contributed to the Gross Deficit Income of the state of USD 19.29 billion, and USD 19.73 billion in 2019. This subsector is projected to become the core economy of Indonesia, and proves that tourism, restaurant, and hotel sub-sectors are promising industry sectors for investment. Considering that the majority of Indonesians are Muslim, there are three leading companies that contributes to 43% of the total market capitalizations of the industry indexed on the ISSI. Hence, the three leading companies of KPIG, INPP, ad SHID become the objects in this research. This research aims at conducting a valuation of the ISSI-indexed companies in tourism, restaurant, and hotel subsectors represented by three leading companies in the subsectors by seeking the fair value of the stock price, which can be used as a determinant of recommendations to investors.

## II. METHODOLOGY

From four valuations techniques introduced by Damodaran (2012), this research utilized two valuation techniques, including *Discounted Cash Flow*(DCF) with *Free Cash Flow to Firm*(FCFF) model, and *Relative Valuation*(RV) with *Price to Earnings Ratio*(PER) model and *Price to Book Value* (PBV) model. By referring to previous studies that utilized similar method, including Hasan and Hendrawan (2020), Siagian and Hendrawan (2020), Rijikan and Hendrawan (2020), and Naexie and Hendrawan (2018), the first investigation of the fair stock was conducted by DCF-FCFF, by using the estimations gathered from projection analysis of company's historical data, this research utilized data from 2015-2019. The fair stock price was calculated in three scenarios, including pessimistic, moderate, and optimistic, to provide an alternative to a company's decision (Hendrawan, *et al*., 2020). The obtained fair prices of the stock will be compared with the selling price listed on the capital market to determine the position of the stock price. FCFF result valuation will be reviewed using PER and PBV Relative Valuation methods. The obtained PER and PBV values will be compared with the PER and PBV in the industry listed on the capital market to determine the position of the stock price, including overvalue, fair value, or undervalue.

## III. RESULTS/FINDINGS

The three scenarios, pessimistic, moderate, and optimistic, were differentiated based on the projected growth of the company's income and difference between the growth of companies and industries. In the pessimistic scenarios, SHID, KPIG, and INPP used the projected growth of 3,55% that is equal to the average industrial revenue growth. In the moderate scenario, SHID used the projected growth of 6,39%, KPIG 8,24%, and INPP 12,06%. In the optimistic scenario, SHID used the projected growth of 7,81%, KPIG 10,58%, and INPP 16,31%. In the analysis of historical data, it was discovered that the average margin between CAPEX and company revenue of KPIG and INPP was significantly higher than the average depreciation margin on income, this value causes the process of searching fair price of the stock using FCFF to be negative. Therefore, the research attempted to find an appropriate average margin of CAPEX (CAPEX rate). According to Rotkowski and Courtnage (2016), generally, the CAPEX rate used in the perpetual model has the same value or is close to the depreciation rate. However, Rotkowski and Courtnage (2016) reject the general perception, especially if the company has positive growth, the CAPEX rate should be greater than the depreciation rate, or maybe the same for good reason. The CAPEX rate selections taken in the study is a depreciation rate plus a value of about 0,02% to illustrate the positive growth of the two companies.

The fair value of stock price obtained through DCF-FCFF compared to the Closing Price on January 2, 2020, and gave the result of the stock price positions in overvalued for three companies in three scenarios. The PER value obtained through PER method is compared with the PER value of Tourism, Restaurant, and Hotel subsector listed on the IDX Statistic Quartile 1 2020 for $-2{,}11$, and gave the result of the stock price position is overvalued in three companies for three scenarios. The PBV value obtained through the PBV method is compared with the PBV value of The Tourism, Restaurant, and Hotel subsectors listed on the IDX Statistic Quartile 1 2020 for $2{,}56$, and gave the result of the stock price position to be undervalued for three companies in three scenarios.

## IV. CONCLUSION

The result showed differences in the result between the DCF-FCFF, RV-PER, and RV-PBV. The stock price of the three companies had an overvalued position in all scenarios through the FCFF and PER methods, meanwhile, the stock price had undervalued position in all scenarios through PBV method. Therefore, it is recommended that investors should consider other factors in making decisions. Recommendations that research provides based on the result of the valuation, along with their consideration are by comparing the company's stock price with the result of the moderate valuation scenario (Naexie and Hendrawan, 2018). The fair value of KPIG's Stock price was not far from the market share price, with company PER overvalued indicates the market was willing to pay more for KPIG's profit and KPIG's PBV has the lowest ratio among three companies, KPIG's stock was worth buying. The fair value of INPP stock has a difference IDR 376 in a moderate scenario, the PER was overvalued, but it was not higher than KPIG in same scenario, providing competing companies with lower price made decisions quite difficult to determine. Considering company's PBV undervalue indicates the stock price given by the market was quite ideal, therefore, INPP stock should be held. The fair value of SHID's stock had a high difference of IDR 2779 in the moderate scenario, indicating the overvalued position of the company was quite expensive, Although PER overvalued with PBV undervalue close to 1, indicates the price given by the market quite expensive when compared to the company's financial performance. The research recommended that SHID stock should be sold.

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