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INVESTIGATING THE IMPACT OF MACROECONOMIC VARIABLES ON KLCI MALAYSIA'S STOCK MARKET RETURN: THREE DECADES OF OBSERVATION

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ABSTRACT

Macroeconomic variables are primary indicators that represent the current state of the economy. Understanding the relationship between macroeconomic variables and the stock market return is crucial as the variables have a systematic influence on the stock market return. The incident of The Black Monday, The Wall Street Crash of 1929, the Asian Financial Crisis (AFC), and the Global Financial Crisis (GFC) are examples of how the domestic and worldwide economies are affected by the stock market. Therefore, investors will appraise these macroeconomic indicators when evaluating stocks to maximize their market returns and predict price movement. Therefore, this research evaluates the selected macroeconomic variables on Malaysia's stock market return. The selected variables of interest are gross domestic product (GDP), inflation rate (INF), interest rate (IR), and exchange rate (ER). This study analyzed 30 years of data dated from 1991-2021 on an annual basis taken from World Bank Open Data's website. The data obtained were analyzed through EViews Version 12. Accordingly, descriptive and regression analyses were conducted and discussed. This study is hopeful to provide some insight to policymakers concerning the variables and Malaysia's stock market return.

1. Introduction

This research focuses on the influence of four macroeconomic variables, which are Gross Domestic Product (GDP), Inflation Rate (INF), Interest Rate (IR), and Exchange Rate (ER) on the Financial Times Stock Exchange (FTSE) Bursa Malaysia Kuala Lumpur Composite Index (KLCI). The Minister of Finance, YB Tengku Datuk Seri Utama Zafrul Tengku Abdul Aziz, said in a media statement that Malaysia's GDP would increase by 3% in the first nine months of 2021. With this recovery momentum, Malaysia's GDP is on track to grow between 3% and 4% in 2021, and between 5.5% and 6.5% in 2022, in line with International Monetary Fund (IMF) and World Bank projections of 6.0% and 5.8%, respectively (Ministry of Finance Malaysia, 2021). Next, Malaysia's inflation rate increased to 2.9% in October 2021 from the previous year, as measured by the Consumer Price Index (CPI), owing to increases in transportation costs as well as prices in other segments such as housing, water, electricity, gas, and other fuels (The Star Online, 2021). Furthermore, Bank Negara Malaysia (BNM) has kept daily interest rates at a record low of 1.75% to support a strong recovery as the economy gradually recovered amid high COVID19 vaccination rates. Lastly, The USDMYR rose 0.0005%, or 0.01%, to 4.2155 on 10th December 2021 from 4.2150 in the past trading session (Trading Economics, 2021). According to Economics (2021), the FKLCI declined 134 points or 8.25% since the beginning of 2021 and has lost about 3.7% through 2021 (Kok, 2021).

Macroeconomic variables significantly affect Malaysia's stock market, followed by changes in stock prices. The impact will determine whether the stock market expects a higher or lower return during the investment. As a result, given the asymmetry market, it is critical to evaluate and analyze macroeconomic indicators and stock prices (Dhaoui, Goutte, and Guesmi, 2018). There are various critical factors in forecasting stock return and a country's economic growth as they are much on the stock market. The incident of The Black Monday, The Wall Street Crash of 1929, the Asian Financial Crisis (AFC), and the Global Financial Crisis (GFC) are examples of how the domestic and also worldwide economies are affected by the stock market. Bursa Malaysia's performance declined in 1997 due to the AFC and GFC as affected by the macroeconomic variables. Furthermore, due to the recent COVID-19 pandemic, the Malaysia Stock market recorded a substantial decline, with the KLCI dropping sharply from 1602.50 to 1219.72 from January to March 2020 (Lee, Jais & Chan, 2020). This collapse resulted in uncertainty and massive losses for stock market investors and incurred large cost debt. These declines in value will cause investors to be concerned about observing the changes in the stock market to avoid any losses and make the right decision. Therefore, this study aimed to investigate whether macroeconomic factors influence Malaysian stock market returns. This study will aid financial analysts and investors in developing reliable variables that can be used to assess the risk of holding financial assets.

2. Literature Review

Stock Market Return

Stock market return can be defined as changes in the value of an asset or investment, which can be positive or negative (MoneySense Editors, 2021). The stock market return is generally generated through capital gains and dividends by the investors. Malaysia uses KLCI as an indicator to measure Malaysia's market condition and stock market performance. Malaysian Finance Minister Tengku Zafrul Aziz presented on 1st November 2021 the 2022 government budget. He stated that the benchmark FTSE (The Financial Times Stock Exchange) Bursa Malaysia KLCI index has declined to 2.2%, the lowest the stock market has ever formed. The inefficiency of the Malaysian stock market is also confirmed. Malaysia will suffer severe consequences if the stock market does not take other measures to strengthen the economy. So, the stock market serves important purposes that help investors and speculators to increase their business or provide capital for their companies. Other

than that, the government and private sectors can assure the efficiency of the country's policy through the stock market.

Inflation Rate

Inflation can be defined as a general indicator of to rise in prices or an increase in the cost of living (Fernando, 2022). Inflation can be measured using the most widely used proxy, the consumer price index (CPI) (Fund, 2021). According to Amadeo (2020), inflation can occur for two reasons which are demand inflation and cost inflation. Kalam (2020) argues in his study that inflation is expected to have a positive and significant impact on the performance of the Malaysian stock market. It is further supported by a study by Ridzuan, Aiman, & Norehan (2020) on the impact of macroeconomic variables on the Malaysian stock 23 market, showing that inflation is positively correlated with the stock market with an estimated elasticity of 0.28. However, a study by Chauque and Rayappan (2018) shows that inflation is negatively correlated with the performance of the Malaysian stock market.

Gross Domestic Product

Gross domestic product (GDP) will represent the overall monetary or market significance of all final goods produced and services provided inside national boundaries beyond a period (Nam & Geetha, 2020). MSCI Barra Research Bulletin (2010) then claimed that nations with better protracted real GDP growth also have more significant real stock market gains. Along the same lines, the research by Nam & Geetha (2020) proved that Malaysia's gross domestic product has negative bond consequences. Based on Kalam (2020) found that some countries had lower annualized stock market returns while having more excellent long-term GDP growth rates. Apart from that, Kalam (2020) carried out descriptive statistical research, which showed that the GDP has the most significant mean, indicating that Malaysia has a robust economic growth rate and the guts to impact stock market growth.

Exchange Rate

The exchange rate is the currency one country exchanges with another (Chen, 2022). National governments decide the official exchange rate based on the rate set in a legalized currency market. It is sometimes referred to as the price one country pays concerning another country's currency (Kalam, 2020). According to several studies, there is no long-term interrelationship between stock prices and exchange rates. Asmy et al. (2009) concluded that stock prices and exchange rates have no long-term correlation. These could be owing to the various collection of variables utilized in the analysis and the different methods used. On the other hand, Chauque & Rayappan (2018) stated that the currency rate and the stock market are essential factors affecting many nations' economic growth.

Interest Rate

The interest rate can be defined as the percentage of the principal that a lender charges a borrower (Banton, 2022). It is a crucial macroeconomic variable that influences economic growth directly. Although increasing interest rates drive up the price of stock firms in the stock exchange return, interest rates have a negative relationship with Malaysia's stock market return. Interest rates impact macroeconomics because they provide investors with the necessary information to invest in the capital market. Therefore, the price of a stock market share will rise concerning rising interest rates (Kalam, 2020). Using daily data, Joseph and Vezos (2006) found that stock returns are susceptible to fluctuations in interest rates and exchange rates. According to Moya-Martinez, Ferrer-Lapena, and Escribano-Sotos (2015), interest rate changes might substantially affect non-

financial companies' value. Higher interest rates tend to boost a firm's cost of capital. Hence, stock prices are affected negatively.

3. Methodology

Data Collection

World Bank Open Data has been used as the primary source of quantitative data on the variables. This research has used 30 years of data for each macroeconomic variable from 1991 until 2021. The website was used to retrieve data on macroeconomic variables, which are inflation, gross domestic product (GDP), interest rates, and exchange rates. It was also used to find data from the study's dependent variable representing the performance of the Malaysian stock market. Other than that, we also use EViews, a software that offers analytical tools.

Dependent Variables

The dependent variable for this research is KLCI Malaysia's stock market return. The stock market in Malaysia seems to overreact to financial crises, which is incompatible with the uncertain form of Efficient Market Theory (Ang, Goetzmann & Schaefer, 2011) because investors can benefit by buying losers in an overvalued market and selling it next.

Independent Variables

The four independent variables used in this study are gross domestic product (GDP), inflation rate, exchange rate, and interest rate. Table 1.0 below depicts the measurements.

Table 1
Independent Variables Measurement

Variables	Measurement
Gross Domestic Product (GDP)	$GDP = C + I + G + (X-M)$ GDP = Consumption + Investment + Government Spending + (Exports-Imports)
Inflation Rate	$\frac{(CPI_{X+1} - CPI_X)}{CPI_X}$
Real Effective Exchange Rate	$REER = \text{Nominal Exchange Rate} \times \frac{\text{Domestic Price}}{\text{Foreign Price}}$
Interest Rate	$\frac{I}{PT} = R$

Research Framework

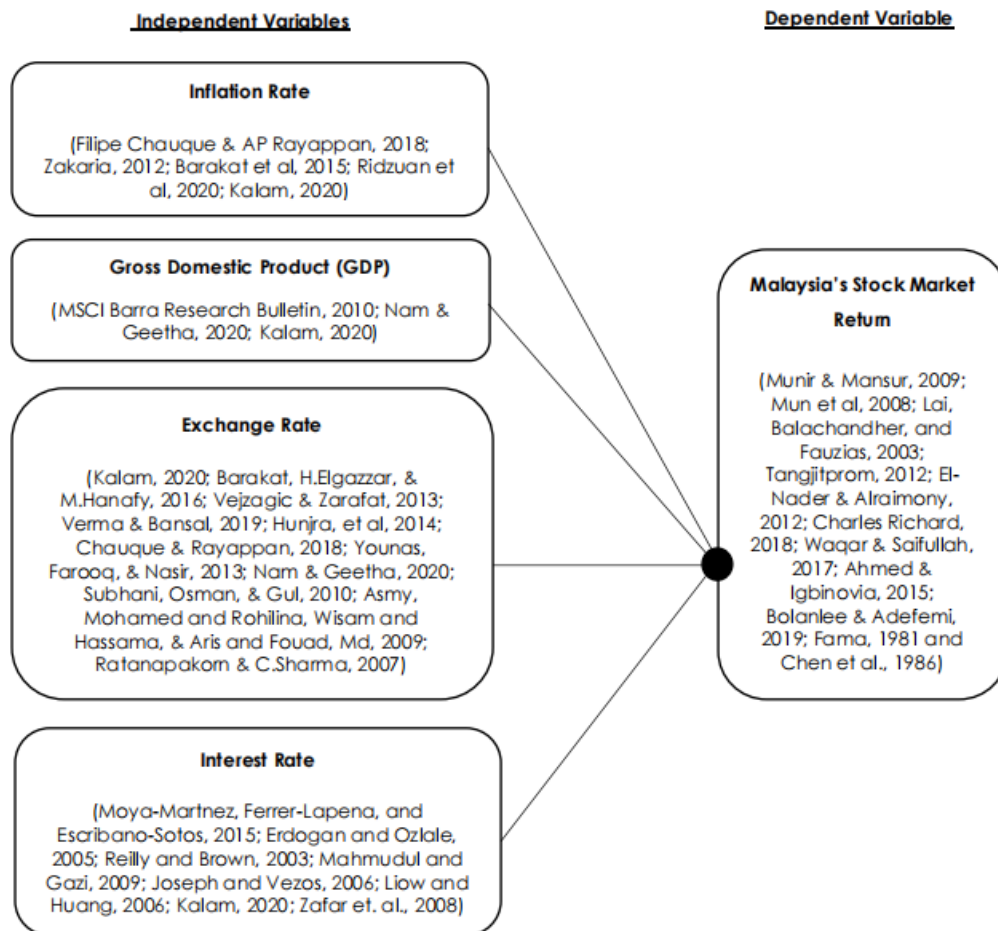


Figure 1. Conceptual Framework (along with cited evidence on the relationships)

Hypotheses Development

Inflation Rate

H0: There is no significant relationship between the inflation rate and Malaysia's stock market return.

H1: There is a significant relationship between the inflation rate and Malaysia's stock market return.

Gross Domestic Product (GDP)

H0: There is no significant relationship exists between gross domestic product (GDP) and Malaysia's stock market return.

H1: There is a significant relationship between gross domestic product (GDP) and Malaysia's stock market return.

Interest Rate

H0: There is no significant relationship between interest rate and Malaysia's stock market return.

H1: There is a significant relationship between interest rate and Malaysia's stock market return.

Exchange Rate

H0: There is no significant relationship between the exchange rate and Malaysia's stock market return.

H1: There is a significant relationship between the exchange rate and Malaysia's stock market return.

4. Results

In this chapter, the data collected were analyzed by using statistical tools to report results on descriptive analysis, correlation analysis, and regression analysis. Besides, a multicollinearity test was used to associate the degree strength of the independent and dependent variables.

Descriptive Analysis

Table 2 presents the descriptive analysis of the data used in this research. Descriptive analysis is a form of data analysis that quantitatively describes, examines, or summarises the key elements of a data set. The mean for the exchange rate is higher, while the smallest mean is inflation. The maximum is the exchange rate, while the minimum is the interest rate. This study found that the inflation variable has the slightest standard deviation. In contrast, the most significant standard deviation is the exchange rate variable. The stock market return has positively skewed as the distribution tailed off to the right. At the same time, the exchange rate is the most negatively skewed, as the distribution's tail is off to the left. The kurtosis of stock market return has peak data as its kurtosis is more than three, showing less dispersion. In contrast, the exchange rate has the smallest flatness of data as it is less than three, showing a wide degree of dispersion.

Table 2
Descriptive Analysis

	Exchange Rate	GDP	Inflation	Interest Rate	Stock Market
Mean	100.6897	5.2373	2.5345	3.3135	5.0565
Median	97.9617	5.5848	2.4771	3.3507	3.7700
Maximum	124.8821	10.0027	5.4408	11.7824	64.7200
Minimum	83.2494	-7.3594	-1.1387	-3.9034	-34.5600
Std. Dev.	12.5653	4.0517	1.4655	3.6249	20.3001
Skewness	0.7207	-1.6001	-0.0672	-0.0058	0.5744
Kurtosis	2.4149	5.6534	2.9799	2.7813	4.2818

Jarque-Bera Probability	3.1258 0.2095	22.3214 0.0000	0.0239 0.9881	0.0619 0.9695	3.8271 0.1476
Observation	31	31	31	31	31

Multicollinearity Test

When the independent variables in a regression model are tightly related, this is known as multicollinearity. The Variance Inflation Factor (VIF) was then used to determine which independent variables strongly correlate. For example, suppose the centred VIF score is more significant than 5. In that case, the independent variable is significantly related to each other. Therefore, the variable should be excluded from the model according to the VIF rule of thumb (Frost, 2017). Based on Table 3.0, it can be seen that all independent variables have low centred VIF, which is less than five, which are exchange rate (3.0644), GDP (1.8910), inflation (1.6034), and interest rate (1.8423). It indicates that all independent variables are not significantly related and did not have a multicollinearity problem. As a result, there are no independent variables excluded in this research..

Table 3
Variance Inflation Factors

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	665.7134	128.1390	
Exchange Rate	0.1042	206.3968	3.0644
GDP	0.6184	5.1559	1.8910
Inflation	4.0076	6.5588	1.6034
Interest Rate	0.7527	3.4329	1.8423

Regression Analysis

Regression analysis is a mathematical method of determining which independent variables affect the dependent variable. According to the table above, the R^2 value of 0.6612 indicates that all the independent variables (GDP, inflation, exchange rate, interest rate) explain 66.12% of the variance in dependent variables (stock market return). Meanwhile, the adjusted R^2 value is 0.6092. It indicates that 60.92% of the variation in the dependent variable (stock market return) can be explained by one of the independent variables, which is the exchange rate in the model. Furthermore, the F-statistics value is 12.6907, and the p-value of the F-statistic is 0.0000, which shows that the sample data provide sufficient evidence to conclude that the regression model fits the data better than the model without independent variables. Based on Table 5.0, the variable used in the analysis (interest rate, inflation, and exchange rate) is highly significant at a 1% significance level. In comparison, GDP is significant at a 10% significant level. Results show that all independent variables in this study are significant, and it is the evidence to reject the null hypothesis.

Table 5
Regression Analysis

Variable	Coefficient	Standard Error
C	-69.8253	25.8014
GDP	1.4412*	0.7864
INTEREST_RATE	-4.1999***	0.8676

INFLATION	-6.2891***	2.0019
EXCHANGE_RATE	0.9652***	0.3228
Number of observations	31	
R-squared	0.6612	
Adjusted R-squared	0.6092	
Log-likelihood	-120.0276	
F-statistic	12.6907	

Note: *** significant at 1%, **significant at 5%, *significant at 10%

$$Y_i = \alpha + \beta_1 INF_i + \beta_2 GDP_i + \beta_3 ER_i + \beta_4 IR_i + \epsilon_t$$

$$\text{Stock market return} = -6.2891INF + 1.4412GDP + 0.9652ER - 4.1999IR$$

5. Discussion

Relationship between inflation rate and Malaysia's stock market return

In this research study, inflation was found to have a significant and positive relationship with the dependent variable, which is Malaysia's stock market return. It indicated that inflation has a strong relationship with influencing the movement of stock market returns in Malaysia. This finding is similar to a past study by Kalam (2020) and Ridzuan, Aiman, & Norehan (2020). They found that inflation positively and significantly affects the stock market return. It implied that in both studies, inflation positively correlates with Malaysia's stock market return. In a study by Filipe Chauque & AP Rayappan (2018), it was found that inflation has a significant negative relationship with Malaysia's stock market return, which indicates that inflation and stock market return in Malaysia are negatively correlated. Thus, the null hypothesis is rejected, and hypothesis 1 is accepted as an independent inflation variable.

Relationship between gross domestic product and Malaysia's stock market return

The gross domestic product (GDP) independent variable is significant in this analysis, indicating a relationship between Malaysia's stock market return and GDP. It means that the goal of determining the impact of GDP on Malaysia's stock market return is accomplished. The findings are supported by prior research by MSCI Barra Research Bulletin (2010) and Nam & Geetha (2020), which spotted a significant and negative relationship between gross domestic product (GDP) and Malaysia's stock market return. It also complies with a study by Kalam (2020), which found a significant and positive relationship between gross domestic product (GDP) and Malaysia's stock market return. Therefore, the null hypothesis is rejected since there is a significant relationship between GDP and Malaysia's stock market return.

Relationship between exchange rate and Malaysia's stock market return

In this study, it is confirmed that the exchange rate has a significant relationship with Malaysia's stock return which acts as a dependent variable. It is shown that the exchange rate strongly influences the movement of stock market returns in Malaysia. This significant relationship is contradicted by research conducted by Zakaria & Shamsuddin (2012) and Asmy, Mohamed and Rohilina, Wisam and Hassama, & Aris and Fouad, Md. (2009). They found that the exchange rate does not have a significant relationship with Malaysia's stock market return because of non-institutional stakeholders' dominance and the issues of asymmetric information between shareholders. However, it is supported by research from Kalam (2020) and Vejzagic & Zarafat (2013) that explains exchange rate has a positive and significant relationship with the stock market return.

Therefore, the null hypothesis is rejected by the independent variable of the exchange rate, which is that there is a significant relationship between the exchange rate and Malaysia's stock market return.

Relationship between interest rate and Malaysia's stock market return

According to this study, the independent variables of interest rate have a significant negative relationship with Malaysia's stock market return. Therefore, it indicates that interest rate has a negative relationship to the impact on Malaysia's stock market return. The result of this finding connotes the studies by Alam & Uddin (2009), Moya-Martnez, Ferrer-Lapena, and Escribano-Sotos (2015), Erdogan and Ozlale (2005), Reilly and Brown (2003), Mahmudul and Gazi (2009), Joseph and Vezos (2006) and Kalam (2020). They found that the interest rate has a strong negative relationship with the changes in stock market return. Hence, interest rates and Malaysia's stock market return are negatively correlated. On the other hand, according to the findings from Zafar et al. (2008), the one who found that the interest rate has a positive and insignificant relationship with the stock market return. Therefore, the null hypothesis is rejected by the independent variables of interest rate, which is that there is a significant relationship between interest rate and Malaysia's stock market return.

6. Conclusion and Recommendations

The macroeconomic variables included in this research are Inflation, Gross Domestic Product (GDP), Exchange Rate, and Interest Rate. No macroeconomic variables are excluded from this research since all variables are not significantly related to each other from the result of the multicollinearity test. Inflation, GDP, exchange rate, and interest rate are part of critical macroeconomic variables that will impact the stock market return. For instance, based on the quantitative and qualitative analysis of the independent variables in response to the dependent variables, it can be concluded that all the independent variables used are significant in stock market return. Variable GDP is significant at a 10% level, and the other three variables are highly significant at a 1% level. Interest rates and inflation have a negative relationship with the stock market. In contrast, GDP and exchange rate have a positive relationship. A study by Kalam (2020) stated that currency devaluation occurs when liquidity declines, affecting capital outflows and lowering interest rates.

The first recommendation is to study more macroeconomic variables not included in this research, such as the balance of payment (BOP), economic growth, and unemployment rate. The variables included in this research explain 66.12% of Malaysia's stock market return variation, while other macroeconomic variables will interpret the remaining 33.88%. Next, it is recommended to do further study on other countries' stock market returns in order to expand the findings on this topic. The third recommendation is to control the inflation rate. The government must be essential in controlling and reducing the inflation rate. One of the ways that the government can do this is by controlling the price of goods and services to prevent any further rise in the prices. Unfortunately, the increasing prices of goods and services increased inflation. In December 2021, the consumer price index (CPI) increased by 0.5%. Overall, inflation in Malaysia increased by a whopping 7% in 2021, the highest rate in 40 years (Zilber, 2022). Therefore, it is recommended that the government should play its role in controlling the prices of the goods and services, maybe by setting up a ceiling price for necessary goods to prevent the goods from being sold at too high a price.

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THE NORMALISATION OF TROLLING ON SOCIAL MEDIA

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ABSTRACT

Trolling has become common among social media users. This study examines how university students perceive trolling culture on social media. Its primary goal is to ascertain whether trolling is a social media norm, while the secondary goal is to determine users' typical responses when they are being trolled on social media. A quantitative research method was used in this study. Sixty students from a public university provided their responses through a Likert Scale survey. We analysed the data using descriptive analysis SPSS version 25. The results indicate that most respondents expressed their worries and concerns about the present culture of trolling, which is becoming increasingly prevalent on social media. This study also unearths the common responses among users when they were trolled on social media. Thus, this study provides insights into the seriousness of trolling culture on social media, especially among young adults like university students.

1. Introduction

1.1 Background to the study

In many countries, including Malaysia, online space has become a breeding ground for insubordination, including cyberbullying, cyberstalking, and other types of harassment (Espiritu, n.d.; Lumsden & Morgan, 2017). The practices of "doxing" (disclosing somebody's location and private information) and the rise of "shame campaigns" (a widespread movement of shaming a specific individual or organisation online) are examples of the types of online harassment that have resulted from Web 2.0 (Mason, 2021, as cited in Polak and Trottier, 2020). According to several studies, a variety of harsh comments, such as personal insults and exclusionary tactics, are deemed to be "trolling" that are commonly practised on websites and social media (Herring et al., 2002; Luzón, 2011; Shachaf & Hara, 2010; Thacker & Griffiths, 2012 as cited in Cook et al., 2017).

Before the emergence of Facebook and other social networking sites, trolls caused havoc on Usenet newsgroups, internet forums, and message boards (Suciu, 2020). Trolls typically adopted false or fabricated names to ensure their identities would be protected. Racial, sexual, and political provocations are the main types of trolling. Trolling also includes hate speech, rape threats, death threats and body shaming by an individual or group that aim to promote hatred among social media users (Lumsden & Morgan, 2017). This form of aggressive and manipulative behaviour can be found in comment threads of news articles, political organisations pages or individuals' social media accounts (Espiritu, n.d.).

Fortunately, trolls may be blocked on cell phones using the WhatsApp app, Facebook, Twitter, and other social networking sites, but only when the administrators receive reports against them. Since most people utilise the internet every day, cybercriminals tend to have more opportunities and thus, the number of people who have fallen victim to trolling continues to rise. According to Pew Research Center, as cited in Swenson-Lepper and Kerby (2019), most internet users have observed and experienced online harassment such as name-calling, offending, attacking, stalking, harassing, or sexually assault. As a result, this inappropriate behaviour has affected many users, especially teenagers and young adults. Ortiz (2020) stated that trolling victims reported feeling unhappy, fatigued, and traumatised, which has caused them to withdraw from meaningful discussions on social media so that they could refrain from this mistreatment.

Despite the backlash and resistance against the activity, many who support trolling claim it serves as self-expression and identity (Boler, 2007; Kennedy, 2006, as cited in Andersen, 2021). It is perceived as a part of entertainment, and trolls mostly do not have any intention to cause violence (McCosker, 2014; Ortiz, 2020). Komac and Cagiltay (2019) discovered that the most common reason for trolling is personal pleasure. They also cited Bishop (2014), who describes two types of trolling, which are "kudos trolling" (for entertainment) and "flame trolling" (for insulting). Hence, trolling could occur unintentionally and intentionally.

1.2 Problem Statement

One of the fundamental reasons to use the internet is that people need to maintain connections with others, regardless of where they are physically located. According to Rainie et al. (2017), the internet currently acts as a platform for information sharing and executing communal activities among individuals, businesses, and government members. People tend to share their views, establish relationships with others, and even discuss topics they could not discuss in person. The internet, particularly social media, has made it feasible for people to expand their network and associate with others who may not even share common interests (Andersen, 2021; Biały, 2017; Kaplan, 2010). Ideally, with correct and proper usage, people could easily capitalise on social media and establish relationships and networks, which may eventually inspire various impactful behavioural patterns (Hejlová et al., 2019).

However, since people use the internet and social media to manage almost every aspect of daily life activities, the negative impacts also continue to grow, and trolling is one of them (Beyer, 2014; Case & King, 2018). It has been observed that people are growing less responsible; therefore, breaking the law and hurting others do not appear to affect their self-integrity or values. The upshot of this issue is that it could lead to an increase in cybercrimes and cause mental and physical distress among the victims of trolling. Worst of all is the growing acceptance of trolling as a part of everyday life, where people no longer care how it affects others (March, 2020). People will feel trauma resulting from bullying-related activities, impairing their mental and emotional health in the long run (Rachamalla, 2021).

The current body of literature could not provide enough evidence on how young adults in Malaysia handle the negative consequences of social media, such as trolling. As a result, we feel that this research could provide insights into understanding how this group of people feel every time they are trolled on social media and their common reactions to it. Several studies have been done to determine the effects of trolling on people's emotions and brains, and the findings have been somewhat distressing. According to Zamri et al. (2022), trolling is a form of cyberbullying that can significantly affect a person's mental health, and troll victims will most likely experience mental health problems such as depression, anxiety, and self-harm. Therefore, by understanding the respondents' feelings and identifying the typical responses, proper precautionary actions can be taken to curb the act of trolling from becoming an act of normalisation in society.

1.3 Research Objectives and Questions

This quantitative study aims to determine if trolling has become a norm on social media. The first objective is to determine whether the culture of trolling is tolerated on social media platforms, and the second objective is to identify the common responses when people are trolled on social media.

Based on these objectives, the research questions are formed as follows:

- 1) Is trolling being tolerated on social media?
- 2) What are the common responses among victims when they are trolled on social media?

1.4 Significance and limitations of the study

This study aims to raise awareness among youth about the prevalence of trolling on social media and appropriate ways to manage social media accounts and online behaviour. By understanding the proper actions to take when being trolled on social media, users can be better equipped to deal with trolling culture and, as a result, avoid any unfavourable outcomes associated with trolling. This study also intends to encourage social media users to be more cautious in publishing posts or posting comments online since some users may not realise that they have actually supported the trolling culture and normalised this online misconduct.

This study has a few limitations involving the sampling size and demographic factors. Since only degree and diploma students from a public university were allowed to participate in this research, the findings could not generalise the perceptions of all university students and certainly not the entire youth population in Malaysia. Nevertheless, the results may serve as an indicator of how this particular group of people perceives trolling and how they typically respond to it. Besides that, considering that trolling happens to people of all ages, the results may represent the thoughts and perceptions of this particular age group only, of those from 21 to 23 years old.

2. Literature Review

2.1 Trolling activities on social media

An activity intended to provoke a response from another user or to start a discussion or controversy is known as trolling (Beyer, 2014; Cole & West, 2016). Trolling includes cyber-bullying, revenge porn, stalking and sexting (Lumsden & Morgan, 2017). According to Case and King (2018), trolls can be categorised into a wide range of subgroups. Some subgroups include insult trolls, persistent argument trolls, profanity trolls, all-caps trolls, and show-off trolls. Trolling can be done by uploading provocative, digressive, unnecessary, or off-topic content in an online group. Many people like trolling, highlighting the strong desire to respond and the gullibility of others. Trolls believe that they can distract the target from the message and gain much power through trolling (Philips, 2015, as cited in Ortiz, 2020). In this instance, nothing could be further from the truth in the perception of trolls as illogical and negatively affecting how people frequently communicate (Essed, 1991, as cited in Ortiz, 2020).

According to Biaty (2017), trolls are classified into two types: 'traditional' trolls and 'hybrid' trolls. The first type attempts to disrupt social media communication because of personal issues (unhappiness, disappointment, psychological problem), whereas some organisations employ the second type of trolling to support and carry out their agenda. Biaty discussed a few trolling approaches used by some organisations to disseminate propaganda, infiltrate opponents' communications, and spread fake stories. Hence, trolls have manipulated social media's power to make fake news and misinformation go viral immediately.

One of the most alarming developments in trolling is the proliferation of revenge porn. One in 25 Americans was harassed by revenge pornography in 2016, based on a study by the Data & Society Research Institute (2016), as quoted in Case and King (2018). According to the survey, 7% of youth aged between 15 and 29 may be attacked or targeted for posting nude or nearly nude pictures. This act is related to rape threats that have emerged from "rape culture. "Rape culture" is defined as a socio-cultural context in which rape-related sexual comments are considered "normal" or "acceptable" (Keller et al., as quoted by Lumsden & Morgan, 2017). Trolls use these kinds of acts to express aggression against women. On online dating websites, males have more tendency to troll because they are more "psychopathic, narcissistic, Machiavellian, and sadistic" than women (March et al., 2017, as cited by Espiritu, n.d.).

Racist provocation is another form of trolling. According to McCosker (2014), some comments online could be described as vitriolic provocations - meticulously constructed provocations created to elicit recurring responses and usually include racial prejudice in a way that directly acts against the more commonly expressed cultural pride. A self-identified troll used negative connotations to describe immigrants, black people, and women and insisted on being heard through trolling (Ortiz, 2020).

2.2 Normalisation of trolling culture on social media

Numerous factors could contribute to the normalisation of the trolling culture on social media. It was found that people who have communicated via email, chat relays, and blogs could have encountered abnormal, dishonest, violent, or hostile behaviour since the 1980s (Donath, 1999, Kim & Raja, 1991, as cited in Ortiz, 2020). While social media may make it easier for us to make new acquaintances and strengthen our ties to the community, it may also have adverse effects, one of which is the culture of trolls. Numerous social media platforms like Twitter, Facebook, Instagram and Clubhouse have given people a platform to harass others with derogatory remarks, provocative questions, and threatening language.

The anonymity of social media has made it easier for users to express themselves freely and perceive the action as entertainment. Dahlberg (2001), as cited in McCosker (2014), recognises trolling as an attempt to humiliate, distress, and disrupt and claims that it is commonly performed simply for humour but is occasionally oriented by more 'serious' intentions, especially

when it is associated with political agendas. Trolling could also result from content shared by social media users to support their idols, such as celebrities or politicians. Olson (2020) concludes that people would involve in an online fight for a common goal of supporting their idols.

March (2022) illustrates two theories explaining the normalisation of trolling - i) the General Strain Theory and ii) the Broken Windows Theory. According to the first theory, stressed individuals could behave negatively towards other individuals who might not be related to the causes of their stress. Meanwhile, the second theory describes the snowball effect in which internet users learn trolling from other users. The more they are exposed to trolling activities on social media, the more likely they are to troll. This then normalises the actions, resulting in more trolling.

2.3 The effects of trolling

Some of the most frequently reported symptoms among trolling victims include heightened emotional distress and shame and a higher probability of experiencing clinical or subclinical symptoms (such as those for depression, anxiety and posttraumatic stress disorder (Stangor et al., 2022; Zamri et al., 2022) Many of the studies examined in an REA report comparable behavioural effects, including substance abuse, shame, humiliation, low self-esteem, paranoid delusions, avoidance of social life, and detrimental effects on interpersonal relationships such as with other family members and intimate partners (Myers and Cowie, 2017; Englander et al., 2017; Maltby et al., 2016; Jenaro et al., 2018; Duggan, 2017; Wilson & Seigfried-Spellar, 2022; Pearson, 2016).

Victim blaming is another effect of trolling. Lumsden and Morgan (2017) discussed how "silencing strategies" used by trolls have resulted in victim blaming. "Silencing strategies" aims to discourage an individual from participating in a further debate, such as responding to a vitriol post on social media. The common advice to the victims is "do not feed the troll" to prevent them from getting more offensive feedback. They reported a few cases involving public figures who had been victims blamed in media reports due to "silencing strategies". Another study by Andrew (1996), as cited in Herring et al. (2002), highlighted a successful trolling that had caused the victim to get blamed and expelled from high school. Trolling is a serious threat to our future, especially to young people. Long-term victims may end up at the bottom of the social scale, whereas successful bullies may rise to higher positions.

Furthermore, trolling can lead to suicide if the victim is unable to deal with the pressure and distress caused by the harassment. According to Hinduja and Patchin (2009), as cited in Stangor et al. (2022), youngsters who disclose being cyberbullying victims face a wide range of stresses, such as mental illnesses, alcohol use, and in severe cases, suicide. Several studies indicate that online bullying could lead to more suicidality in teenagers as compared to traditional bullying (Jeffrey et al., 2020; Stangor et al., 2022). According to the Mail Online (as cited in Dunlop, 2013), a 14-year-old girl hanged herself after alleged abuse and harassment on the social media website; Ask.FM.

3. Methodology

A quantitative method was used in this study to collect responses via a questionnaire. The respondents were university students consisting of 60 respondents, 29 males and 31 females. They were asked to complete a Google Form survey to express their opinions on whether trolling is becoming more common on social media, along with the common responses when online users are trolled. A Google Form questionnaire was chosen because it is quicker and easier to prepare, and it is also helpful to provide ease to all respondents who were doing online and distance learning (ODL) at the time of conducting this research. The questionnaire contained 31 questions and was distributed to the respondents using a Google form link sent to multiple students' WhatsApp groups. The questionnaire was divided into three Sections: A, B, and C. Section A is the respondents' demographic details, section B aims to answer Research Question 1, and the last section addresses the second Research Question.

All questions in sections B and C were answered using the 5-point Likert scale. We have employed non-probability sampling that entails non-random selection determined by convenience, thus making it simpler to gather data. Given that the Covid-19 pandemic was widespread at the time of writing, we could not meet the respondents physically; thus, this method was the most workable. Statistical Package for Social Science (SPSS) version 25 was used to analyse the data. The questionnaire has gone through a reliability test, and Cronbach's Alpha scores show high internal consistency in all sections of the questionnaire.

Table 1
Result of the reliability test of the questionnaire

Sections	Cronbach's Alpha	No. of Items
A	.823	6
B	.863	15
C	.877	10

4. Results

4.1 Demographic Details

The majority of the respondents were between the ages of 21 and 23. Data showed that most respondents had more than four social media accounts. Respondents utilised WhatsApp media the most (45%), followed by Twitter (21.7%), Instagram (15%) and Facebook (11.7%). It was also found that 56.7% of participants spent more than three hours daily on social media.

Most respondents (83.3%) browsed social media during their leisure time, 10% did so in the morning, and the remaining during class and mealtime. 36.7% of respondents said they posted on social media once a year, 28.3% said they did so each month, and the remaining respondents frequently posted on social media each month. Nearly all the respondents expressed fear of posting their responses. Only 20% are willing to post on social media, while 80% are frightened.

4.2 Investigating if trolling culture is tolerated on social media

Our first Research Question is to investigate if trolling has become a norm and tolerated on social media, and section B of the questionnaire justified this. This section contains ten questions (including questions related to students' understanding of trolling) with corresponding Likert scale answer choices. The following table shows the tabulated data collected from Section B of the questionnaire.

Table 2
Data Analysis of Section B (level of understanding and experience)

Questions	(Strongly Agree to Agree)	(Neutral to Strongly Disagree)
1. I think the act of an individual bullying other people on the internet is considered trolling.	82%	18%
2. I can see many people getting involved in trolling on social media.	85%	15%
3. It seems that people love mocking and trolling others on social media.	80%	20%
4. I feel women are likelier to be trolled on social media than men.	48.3%	51.7%

5. I feel that the main predators of trolling are men.	55%	45%
6. The normalisation of trolling culture on social media has led to many other abusive acts, such as body shaming and name-calling.	90%	10%
7. I was once emotionally provoked on social media.	40%	60%
8. I have experienced scams on social media.	73%	27%
9. I encounter trolls on social media at least once a week.	48.3%	51.7%
10. I don't mind if those close to me get trolled, as long as it doesn't involve me.	34.6%	65.4%

The data clearly shows that most respondents (82%) believed that the act of trolling is a part of bullying. This data proves that university students understand and are aware of trolling culture on social media. The majority of respondents concurred that it is common for them to witness individuals being trolled on social media and to witness several individuals making fun of and trolling others. In addition, 80% of the respondents were under the impression that people take pleasure in ridiculing other users on social media. Interestingly, 51.7% of the respondents believed that most trolling victims are female, which also made them believe that most predators behind trolling behaviour on social media are men.

We also investigated the students' experiences of being trolled on social media. Forty per cent admitted that they once became the targets of cyberbullying on social media, and most were aware of how trolling culture occurs in their daily lives. Besides that, 73% of the respondents confirmed that they had been the victims of fraud while using social media. In order to prove the negative impact of trolling, 90% asserted that tolerating trolling on social media could lead to many other abusive acts, such as body shaming and name-calling.

4.3 Identifying the common reactions when people are trolled on social media

This section aims to assess respondents' responses and actions when they came into contact with trolling culture on social media. The section aims to address the second Research Question of this study. The following table tabulates the data obtained from Section C of the survey.

Table 3
Data Analysis of Section C

Questions	(Strongly Agree to Agree)	(Neutral to Strongly Disagree)
1. I am willing to help anyone being trolled and bullied on social media.	85%	15%
2. I am willing to advise those who have been involved in trolling on social media.	81.7%	18.3%
3. I believe educational institutions need to be more proactive in helping students involved with trolling cases.	86.6%	13.4%
4. I believe Government and Non-Government Organisations should provide a youth helpline that students can get help when having trouble, especially regarding trolling occurrences.	91.7%	8.3%
5. I believe an Anti-Cyberbullying organisation should be established to investigate cyberbullying or trolling cases in the community.	90%	10%
6. I think it is fun and entertaining to see how people troll others.	18.4%	81.6%
7. I can easily lose my temper when I am trolled.	91.6%	8.4%

8. Whenever I am trolled, I feel embarrassed to continue staying on social media.	88.3%	11.7%
9. Whenever I am trolled, I tend to hurt myself.	26.6%	73.4%
10. I will have low self-esteem and self-confidence each time I receive negative comments on social media.	71.7%	28.3%

The first part of this section examined the respondents' readiness to assist social media troll victims; surprisingly, most felt they should be part of it. Most respondents also believed that educational institutions should be involved in addressing problems spurred by the trolling culture. The majority of respondents (91.7%) agreed that the government and non-governmental organisations (NGOs) must establish a youth helpline to assist those threatened by trolling on social media. Most respondents (90%) also confirmed that these trolls must be called in for further investigations to prevent the activity from worsening. These findings also indicated the ideal responses people should take every time they are trolled on social media: both individuals and agencies mentioned must come together and play their part as responsible members of society.

A total of 91.6% of respondents agreed that they usually get angry when they are trolled, while 88.3% felt embarrassed about it and 71.7% experienced low self-esteem and self-confidence with negative remarks they received on social media. The high percentage experiencing these negative reactions proves that people do not usually feel good about the act of trolling, which could eventually affect their self-esteem and mental health. Even worse, 26.6% of the respondents agreed that they had the tendency to hurt themselves when they were trolled on social media. Although trolling is proven to have various negative impacts, 18.4% of the respondents felt entertained by reading the derogatory remarks made by the trolls on social media.

5. Discussion

This study has confirmed that trolling is gradually becoming a common practice among users on social media. Most respondents agreed that they have witnessed cyberbullying and fraud on social media, including trolling. The findings demonstrated that normalising trolling on social media could result in several other violent acts. The result is supported by Myers and Cowie (2017) and Englander et al. (2017), who explained the behavioural effects of trolling and how it could transform into other kinds of violence. The findings also found that people commonly perceive trolling as a source of fun and entertainment, which explains why it continues to prevail. It corresponds well with the study done by McCrosker (2014) and Ortiz (2020), which verified that trolling occurs for enjoyment, while Komac and Cagiltay (2019) found that personal amusement is the main factor of trolling.

Since the percentage of those who have been trolled is higher than those who were not, it clearly demonstrates how pervasive trolling culture is on social media. The respondents perceived it as one form of cyberbullying that can affect a person's well-being and health. As a result, the findings have confirmed the past studies in our literature review, highlighting the seriousness of the trolling culture on social media (Herring et al., 2002; Lumsden & Morgan, 2017; Suci, 2020). The findings clearly indicate that the victims mostly felt bitter whenever they were attacked online. They may express their anger, which could beget more violence on social media. It is also worrisome when the victims are usually feeling emotionally stressed out by the abusive remarks that may lead to mental disorders like anxiety and depression, which in certain cases could finally end with horrifying suicidal cases (Dunlop, 2013).

This study also has proven that most people have always wanted interventions from educational institutions to educate users and inadvertently help the victims. Creating strong interventions applicable across the lifetime is crucial for assisting victims and breaking the cycle of cyberbullying (Jeffrey et al., 2020). Most victims do not seem to know the appropriate responses or actions to be taken and will end up feeling stressed or depressed. Programmes that

engage students in identifying cyberbullying solutions improve students' self-efficacy, empowerment, and confidence, as well as their likelihood of reporting online abuse to an adult (Slonje et al., 2012, as cited in Jeffrey et al., 2020).

Our findings also found that women are likelier to be trolled, and men are the main predators of trolling. This idea corresponds to a study by Gammon (2014), as cited in Swenson-Lepper and Kerby (2019): it was identified that men are more likely than women to involve in a malevolent discourse. According to Jane (2014b), as cited by Lumsden and Morgan (2017), women are considered "weak" and serve to provide "sexual satisfaction for men," but they are then disrespected for this "self-same portrayal." This idea proves that women usually become the victims and are forced to be silent about the situation.

6. Conclusion

In conclusion, trolling has been normalised in today's society. Every minute, more people are indirectly lured into the troll culture since so many people utilise the internet today. We can see that trolls infiltrate all facets of social media and online activity. They say rude things, cause fights, or make depressing comments about other people, all of which come from individuals and have a terrible impact on internet users. Due to its rapid growth, it is clear that the culture of trolling is becoming more acceptable among social media users. This misconduct has various adverse effects, including psychological impacts and suicide (Stangor et al., 2022). Without proper interventions, the internet may soon become a place where people insult and denigrate one another and fail to recognise and value one another's differences. Therefore, the findings of this research also urge proper interventions to ensure our youth today could step into the future with morality and ethical behaviours, especially in online space. Swenson-Lepper & Kerby (2019) suggested that more education about the ethical consequences of using social media is necessary for university and high school students. This means that courses related to ethical online behaviours, including ways to deal with cyberbullying, must be implemented. Besides cultivating more positive values and manners among internet users, they can also be educated on how to react to cybercrimes accordingly. Therefore, everyone will soon understand that they must act ethically and civil no matter where they are.

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EXPLORING OLDER PEOPLE'S EXPERIENCES OF AGEING IN PLACE: A SCOPING REVIEW

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ABSTRACT

The literature on the concept of ageing in place covers a wide range of areas. However, there is a shortage of studies on how it should be described according to older people's lived experiences. This scoping review methodology provides a five-step framework aimed at addressing the knowledge gap by exploring older people's lived experiences of ageing in place. Two databases, Web of Science (WoS) and Scopus, were used to search for relevant literature, and eleven articles were selected. 571 quotations from eleven studies described older people's (aged 60 to 99 years) experiences of ageing in place. Older people's favourable and less favourable experiences of ageing in place were of anything related to the built and social environments. So long as their needs are fulfilled, they are happy to age in place. Otherwise, they would feel burdened to remain and would consider relocating or moving from their homes and community. Overall, understanding the matters related to ageing in place made older people satisfied and contributed to their quality of life. Therefore, the stakeholders must collaborate and cooperate in creating an environment that can accommodate the needs of older people.

1. Introduction

The number of older people worldwide is expected to double over the next three decades, reaching over 1.5 billion in 2050. In 2020, there were 727 million people aged 65 years and over worldwide (United Nations, 2020). Thanks to better health development, people today can increase life expectancy levels and decrease fertility levels. As people live longer lives between 2020 and 2050, the number of older populations will also expand globally. Therefore, the increasing number of older people calls for the vital need for better living arrangements to accommodate them because older people's living arrangements have a significant impact on their physical and psychosocial health and life satisfaction (Henning-Smith et al., 2018). This condition is aligned with the 2030 Agenda for Sustainable Development, whereby all segments of society deserve to enjoy the benefits regardless of age, including older people.

Home, as an ideal living environment, enhances physical and psychosocial health as well as life satisfaction. Older people prefer to age in place because they believe that their own homes and neighbourhoods are safe and accessible. Furthermore, they always have social supports and financial resources to access the care they need to live comfortably in their homes (Barken, 2021). One of the key drivers in addressing the ageing policy is ageing in place. In most countries, the demographic transition has made ageing in place one of the underlying themes of the government's ageing strategy (Van Dijk et al., 2015). Ageing in place policies have evolved across the world in response to the growing pressures on the financial cost of providing long-term care (Pani-Harremann et al., 2021). In addition, older people today believe that maintaining independence well into old is their goal. They choose to age at home instead of in a nursing home. Therefore, the policy's goal of supporting people in their own homes is expanded to focus on those supports. The policies cover community-based initiatives for older people who live independently at home (World Health Organization, 2015).

2. Lived experiences and ageing in place

In order to explore ageing in place, quotes from studies that documented the voices of older people as well as how they felt about and interpreted their decisions and actions will be incorporated in this study. The quotes are known as lived experiences. In studying lived experiences, older people will show their sense of place through their bodies (Yeh, 2020). For example, the researcher can conduct in-depth interviews, participant observation, and photovoice to learn about people's life stories, needs, and experiences. The researcher believes that by paying close attention to lived experiences, particularly those related to the dynamic interaction between a person's characteristics and their environments, appropriate support for helping older people to age in place as well as the gaps in knowledge and future research directions can be identified.

The concept of ageing in place has grown in popularity as the current ageing process has become more prevalent. The majority of older people choose to remain in their homes. Older people may prefer to age in place because they have a strong desire to do so or have no other option (Granbom et al., 2021). Because moving to a long-term care facility is challenging, ageing in place provides the best possibility for older people to remain in their own homes for as long as possible (Grimmer et al., 2015). Ageing in place is also a positive way to satisfy older people's needs, supporting them to live independently or with help for as long as possible (Horner & Boldy, 2008).

The definitions vary extensively from the perspectives of older people; they may relate to home, vicinity or neighbourhood, and other wider contexts. Among the several factors to consider to age in place include whether the older people fit the physical place, social connections, and needed services. Most older people who prefer to age in place either live independently or near their family members (Ismail et al., 2020). To age well in a place, Finlay et al. (2020) identified that homes and communities that older people live in should be safe and comfortable, have easy

access to service, value social connection, and be available for stimulation that fulfils meaningful activities.

Most findings on ageing in place come from researchers, health professionals, caregivers, and adult children rather than individuals experiencing ageing. From a research viewpoint, lived experiences recognise that individuals are experts in their own lives, not their clinicians or caregivers. Therefore, to understand the concept of lived experiences better, this study intends to explore older people's lived experiences of ageing in place, as directly expressed by the older people themselves.

3. Methodology

A scoping review on older people's experiences of ageing in place was carried out sequentially according to the five research steps proposed by Arksey and O'Malley (2005), which include identifying the research question, identifying relevant studies, selecting studies, charting the data, and collating, summarising, and reporting the results. For this study, the researcher did not conduct any consultation exercise to inform and validate the main scoping review findings as it is an optional step.

Stage 1: Identifying the research question

The first research step of this scoping review is identifying the research question. This study seeks to explore the research question: what is known from the existing literature about older people's experiences of ageing in place? The review by Forsyth and Molinsky (2021) reveals that the meaning of ageing in place differs depending on the context and users of the term. Older people have a different understanding of the definition of the concept compared to other parties, such as policymakers and social workers. Older people are also the ones experiencing the situation, and their definition should be counted in the policymaking process. In this study, the researchers acknowledged the term 'ageing in place' as an ambiguous term that could include possible good experiences or bad experiences of older people. Therefore, extensive definitions of what might constitute ageing in place for older people, for example, might reduce the likelihood of missing relevant articles (Arksey & O'Malley, 2005).

Stage 2: Identifying relevant studies

The second research step of this scoping review is identifying relevant studies. In this second step, the researcher used an electronic database as the main source to search for past studies. In addition, in terms of the period of the studies and context, the researcher selected five years and only English studies. As shown in Table 1, the two key concepts developed from the research question are presented in two concept groups. This study mapped the two key concepts, ageing in place and older people, by exploring older people's experiences of ageing in place. In addition to the key concepts, the appropriate terms used in the search strategy have also been identified from the previous studies.

Table 1
Concepts and Terms Used in the Search Strategy

Concept	Terms used in the search strategy
Ageing in place	"ageing at home" OR "independent living" OR "healthy ageing" OR

Older people	"housing for elderly" "elderly " OR "older adult" OR "senior residents" OR "aged people"
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As shown in Table 2, the primary literature search from 2017 to 2021 was conducted using the electronic databases of Web of Science (WoS) and Scopus. These databases were chosen for their combined potential to generate a wide range of evidence specific to the research topic across multiple interdisciplinary fields. The researcher only searched for social sciences and urban and development studies articles. Moreover, only open-access articles and English materials were included in the search strategy.

Table 2
Search Strategy

Database	Search string	Details of the search strategy
Web of Science (WoS)	(((((((((ALL=(ageing in place)) OR ALL=(independent living)) OR ALL=(healthy ageing)) OR ALL=(housing for elderly)) OR ALL=(ageing at home)) AND ALL=(older people)) OR ALL=(elderly)) OR ALL=(older adult)) OR ALL=(senior residents)) OR ALL=(aged people)) AND ALL=(experience)	Publication date: 2017 – 2022 Open access Document Type: Research articles Language: English Web of Science Categories: Social sciences interdisciplinary Social issues Urban studies Development studies
Scopus	"ageing in place" OR "independent living" OR "healthy ageing" OR "housing for elderly" OR "ageing at home" AND "older people" OR "elderly" OR "older adult" OR "senior residents" OR "aged people" AND "experience" AND (LIMIT-TO (OA , "all")) AND (LIMIT-TO (PUBYEAR , 2022) OR LIMIT-TO (PUBYEAR , 2021) OR LIMIT-TO (PUBYEAR , 2020) OR LIMIT-TO (PUBYEAR , 2019) OR LIMIT-TO (PUBYEAR , 2018) OR LIMIT-TO (PUBYEAR , 2017)) AND (LIMIT-TO (DOCTYPE , "ar")) AND (LIMIT-TO (SUBJAREA , "SOCI")) AND (LIMIT-TO (LANGUAGE , "English"))	Publication Year: 2017 – 2022 All open access Document Type: Research articles Language: English Subject area: Social sciences

Stage 3: Study selection

After identifying relevant studies, the selection process picked up many irrelevant studies. In this regard, the researcher eliminated reflections that did not address the central research question at this stage. Furthermore, the researcher also developed the inclusion and exclusion criteria to increase familiarity with the literature and ensure consistency in the selection process (Arksey & O'Malley, 2005). Next, the researcher obtained all full articles based on the criteria set.

As the central question for this study highlights what is known from the literature about older people's experiences of ageing in place, the presence of older people is, therefore, an essential selection criterion.

Studies were chosen based on the following qualifying criteria:

1. The studies must be related to social sciences, development studies, or urban studies. Studies relating to gerontology or design were excluded.
2. The studies must report on older people's present perspectives. Studies with a population younger than the definition of older people were excluded. This population group discusses their future planning and not their recent experiences.
3. Only research articles were included. All forms of review articles were excluded.
4. Older people speaking about ageing in place based on their lived experiences were included as research participants, regardless of the research design, particularly in terms of either a qualitative or quantitative design.

At this stage, the researcher first discovered and reviewed the articles retrieved from the database search. The researcher independently screened the records by titles and subsequently abstracts. Next, the researcher conducted a full-text examination using the selection criteria and resolved any uncertainty about the inclusion of an article.

Stage 4: Charting the data

After the process of study selection, the researcher chartered the data synthesising and interpreting information from the studies. The researcher decided on the information from the primary studies to be recorded. At this stage, the researcher recorded the information from the preliminary studies in a data charting form. The researcher decided to record about study population and study design in the databases.

Stage 5: Collating, summarising, and reporting the results

In the last stage, the researcher collated, summarised, and reported the results in the current article. Based on the information that has been sifted, charted, and sorted, the researcher presented an overview of all materials reviewed in the results section. The researcher decided on the best way to report the material; thus, the researcher presented using tables. From the included records, the name of the authors, the publication date, the location of the study, the population of the study, and the methodologies were all extracted. In addition to these five stages, the researcher may also consider having a consultation exercise to update and validate the main scoping review findings. However, the researcher did not conduct any consultation exercise for this study.

4. Results

Figure 1 depicts the search flow procedure. The two databases yielded a total of 819 articles. Following the title and abstract screening, 22 articles were selected for full-text examination. Consequently, eleven articles met the inclusion criteria.

Identification

Records retrieved via the following databases (Total n = 819:)
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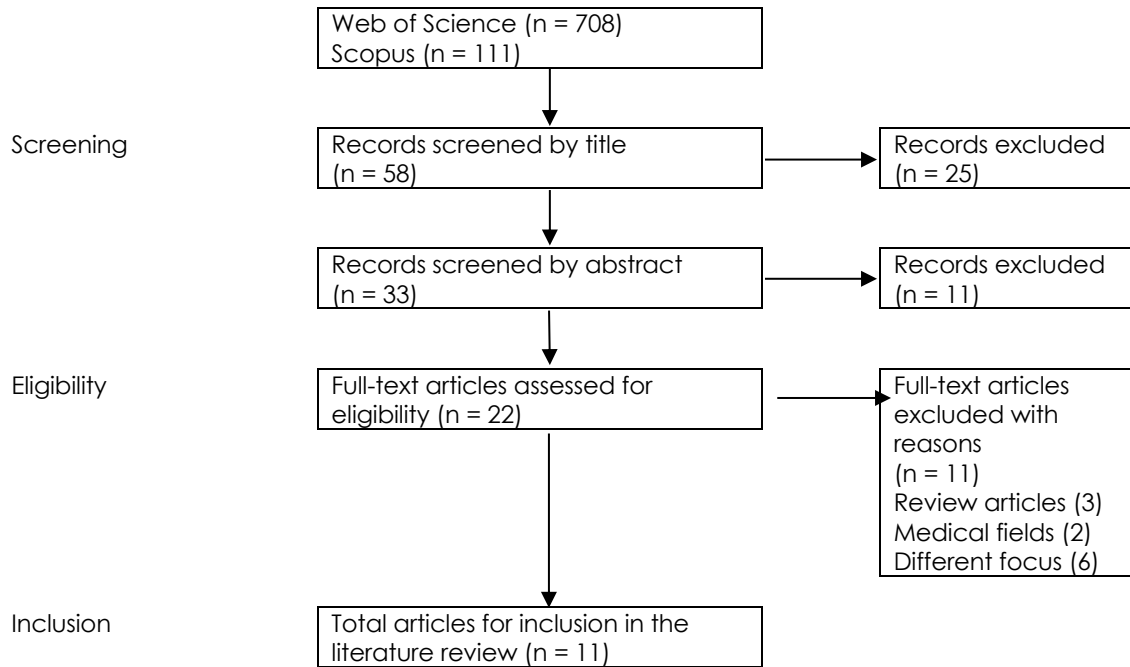


Figure 1: Search Flow Process

Study Characteristics

Table 3 presents an overview of included studies (n = 11) published between 2017 and 2022. A total of 571 older people, aged 60 to 99 years, participated in the studies. Most studies included 11 to 20 participants (n = 90), aged 60 years and older (n = 571), and used interviews only (n = 149).

Older people's favourable and less favourable experiences of ageing in place were of anything related to the built and social environments. For most older people, so long as their needs are fulfilled, they are happy to age in place. Otherwise, they would consider relocating or moving from their homes and community.

Table 3

Descriptions of Included Research Papers of Scoping Review on Experiences of Ageing in Place

No.	Author (year)	Country	Population (N)	Age years (years old)	Research method	Methodology approach
1.	van Hees et al. (2017)	Netherlands	18	70-85	Qualitative research	Ethnographic (photovoice)
2.	Anderson et al. (2018)	Australia	11	71-92	Qualitative research	Case study
3.	Bamzar (2019)	Sweden	56	65-75	Quantitative research	Survey
4.	Jakubec et al. (2019)	Canada	36	60-80	Qualitative research	Group Interview

5.	Vos et al. (2020)	Netherlands	14	64-92	Qualitative research	Focus Group Discussion
6.	Yu & Rosenberg (2020)	China	47	60+	Qualitative research	Interview
7.	Grove (2020)	Ireland	15	65+	Qualitative research	Interview
8.	Bayar & Türkoğlu (2021)	Turkey	20	70-96	Qualitative research	Interview
9.	Wagner (2021)	United States	5	64-90	Qualitative research	Interview
10.	Kwan & Tam (2021)	Hong Kong	12	65+	Qualitative research	Case study
11.	(van Hoof et al., 2022)	Netherlands	337	65+	Quantitative research	Survey

Older People's Experiences of Ageing in Place

In van Hees et al.'s (2017) analysis, the older people demonstrated that the meaningfulness of neighbourhoods is situated and individually defined. Through a photovoice study, the older people confirmed that functionality and value and meaning are elementary for ageing in place. However, older people in the study described functionality and value and meaning differently by emphasising how places are specific for them. The older people have different views because their photographs did not represent similar stories for each of them. Those living in remote areas in the Netherlands with fewer services in their immediate environment shared how they were afraid to lose the functional places in the neighbourhood, while those living in central areas photographed places useful for themselves or their neighbours. In addition, older people in the study also believed that public places in both locations offer social participation and social interaction opportunities. The findings showed that older people feel particularly attached to places embedded in their history; they always love the nostalgic feelings of the places and are not willing to let themselves be replaced.

In addition, to consider whether to age in place, older people will look into how social networks and local community services impact their lives (Anderson et al., 2018). In a community like Castletown, Australia, older people's social networks are about the distance between the kin, their adult children and siblings, the non-kin, and their friends. Most of the older people in the area considered a future move or relocating, and have no current plans for relocation due to the location of their homes. Due to their poor health condition, they also decided to relocate themselves around health facilities, having full support from their family members in terms of financial aid and personal care.

In the study by Bamzar (2019), the application of universal design may change the physical features of the indoor living environment of older people's homes. In Hasselgarden senior housing, Sweden, older people expected their apartments to have a safe, quality indoor living environment that meet their needs. By applying universal design in the built design, the frequency of use of the area is higher, with less falls and high perceived safety among older people. The study showed that the living room is the safest area, while the bathroom is the least safe area of their senior housing. Therefore, older people who decide to age in place and live independently in their homes are actually at risk of injuries if the built environment does not apply universal design.

In addition, the study by Jakubec et al. (2019) in suburban Canada focused on the role of community in the well-being of older people in the neighbourhood. The finding showed that belonging in suburban communities is complex for older people and can only be experienced through connection, contribution, and cooperation. The majority of the older people expressed a desire to feel connected and know others and the resources available, be active contributors in their communities, and do community work in cooperation with others across cultures and

generations. They believed that by feeling, knowing, being, and doing, their experiences of ageing in place would be better.

In the Netherlands, Vos et al. (2020) found that older people who decided to age in place and receive home care experienced a high impact of social network change. For instance, the older people were struggling with the death or illness of their partners, regretting the loss of their close people, changing relations with their family members, and feeling dependent on helpers all this while by themselves. Nonetheless, the intensity of these social network change experiences tends to vary. When several events occurred in the older people's lives at the same time, they were drifting away from the lives they used to live. However, most older people can find ways to recover from the changes even though the pace and intensity of the process differ from one person to another.

In Beijing, China, older people faced changing environments related to their relocation experience and residential and neighbourhood type (Yu & Rosenberg, 2020); their built and social environments mostly influence their experience. Older people that have no relocation experience and continue living in the same neighbourhood tend to face more built environment challenges even though they show stronger ties with their neighbours. They are familiar with old neighbours in terms of emotional support, sense of belonging, and trust; however, most older people were unfamiliar with the community members and new neighbours and did not count on their family members to care for them. Thus, even though they relocated to a new area with a better built environment, their old neighbourhood relations would always remain in their memory.

Meanwhile, the study by Grove (2020a) in Dublin, Ireland, shows how older people value their functioning and capabilities when they could get out and about, engage and connect with others, carry out daily tasks and errands, and remain independent. Thus, a supportive environment and social support are important to age well in place to compromise with older people's physical and cognitive capacities.

In the study conducted by Bayar and Türkoğlu (2021) in two different cities in Turkey, older people were found to have different engagement levels with the city. Generally, in different neighbourhoods, older people tend to isolate themselves when they do not support their basic needs. On the other hand, they are successfully ageing in place when they have easy access to urban facilities such as health care facilities in their neighbourhood. In addition, when older people are financially independent or have a higher income level, their sociability, engagement in paid leisure activities, and engagement in the city also increase. Therefore, the older people's living environment experiences in these cities depend on their daily life routines and level of income.

Moreover, older people have also experienced how finances and caregiving support significantly impacted their lives at home and their ability to age in place (Wagner, 2021). In general, most older people desire to remain in their homes only if they have the financial means to support them. Based on Wagner's (2021) study, financial situations could threaten the ability of older people to age in place and make it difficult for them to remain in the home they loved. Their financial status also influenced the decision to have formal caregiving, as they received a varied amount of caregiving support from their formal and informal caregivers. Informal caregivers such as family members support older people to ensure that they are safe in their homes.

On the other hand, older people in Tai O Village, Hong Kong, still live in stilt houses, which are ancestral homes and were built and lived throughout multiple generations (Kwan & Tam, 2021). Most of them chose to age in place because they are not familiar with Hong Kong city's living style, higher cost of living, and air pollution. Instead, they are used to lower costs and being comfortable with the lifestyle in the small town of Tai O Village. Older people in their study also have positive experiences because, as they sustain and continue their work, this type of social participation enables them to connect with their neighbours and others in the community.

Lastly, the Hague, in the study by van Hoof et al. (2022), received an overall score of satisfaction regarding age-friendliness from older people living in the city. However, even though the study involves older people living in their own homes, the findings showed that they have

different perceptions of their city's age-friendliness. There were significant differences in age, gender, socio-economic status, use of mobility aids, and receiving care support. They were satisfied with social participation, civic participation and employment, communication and information, respect and social inclusion, community support and health services, transportation and financial situation of the city but not with the rest of the domains, housing and outdoor spaces, and buildings.

5. Discussion

This scoping review has synthesised and mapped the current literature on older people's experiences of ageing in place. While ageing in place is probably a favourable experience for older people, ageing in place can be less favourable when their needs are not taken care of. Evidently, older people tend to have a favourable experience of ageing in place when the conditions of the place that they live in have a function, value, and meaning to them (van Hees et al., 2017), a safety design (Bamzar, 2019), and easy access to facilities (Bayar & Türkoğlu, 2021). In addition, older people are also happy when they are able to participate or engage with the community (Bayar & Türkoğlu, 2021; Jakubec et al., 2019; Kwan & Tam, 2021) and gain formal and informal support from others (Wagner, 2021; Yu & Rosenberg, 2020). However, due to issues related to health (Anderson et al., 2018; Kwan & Tam, 2021; Vos et al., 2020), finances (Wagner, 2021), lack of built (Bamzar, 2019; Yu & Rosenberg, 2020) and social environments (Bayar & Türkoğlu, 2021; Grove, 2020b; Wagner, 2021), older people may also face challenges to age in place. As a result, these are the main reasons that influence the decision of older people to stay or consider relocating to another living arrangement.

The researcher chose to employ a scoping review here because the goal is to quickly capture the key concepts and evidence in current research on ageing in place, which is precisely what scoping reviews are for. The scoping review has explored older people's experiences of ageing in place. Based on the articles reviewed, older people's experiences are associated with both favourable and less favourable experiences. In response to our research question, we found that older people's experiences of ageing in place were of anything related to the built and social environments. Built environment relates to the physical conditions of the homes and neighbourhood, which significantly influence the mobility, independence, and quality of life of older people and their ability to age in place. In contrast, a social environment involves their locally situated relationship with the people surrounding them (Odzakovic et al., 2021). This relationship includes older people's family members, friends, neighbours, and the public. In essence, they are happy to age in place when their needs are fulfilled; otherwise, they would consider relocating or moving from their homes and community.

6. Conclusion

The researcher opted for a scoping review since the current study aims to capture the key concepts and evidence discovered in current research on ageing in place, which is exactly what scoping reviews are intended to achieve. One of the strengths of this scoping review lies in mapping the relevant materials to this topic. This process gives a defined direction for doing research and presenting findings. The purpose of this scoping review of the literature is to explore older people's experiences of ageing in place. Overall, based on the articles reviewed by the researcher, most older people have had good experiences ageing in place rather than feeling burdened by their decision to remain in their own house and community. As this review presents a synthesis of older people's lived experiences, the findings will assist the policymakers to tailor their aims to meet older people's needs so that better facilities and services can be provided.

Nonetheless, this scoping review also has several limitations, which are readily evident. For instance, publications in other languages went unidentified because only studies published in English were included. Besides, the preliminary search also found a significant number of articles that were not peer-reviewed; hence, the Google Scholar database was not searched. In addition, the researcher only searched for open-access articles. Although this option resulted in some relevant publications, the researcher considered that the databases included social sciences academic literature.

In essence, if we respect the lived experiences of older people, we must listen when they tell us that they need to age in place. Based on what the older people have expressed thus far, the aspects required for ageing in place include the built and social environments. Hence, it is necessary for the stakeholders such as policymakers, urban planners, sociologists, neighbourhood associations, and researchers to collaborate and cooperate in creating an environment that can accommodate the needs of older people.

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Authors Contributions

Noorlailahasna Mohd Yusof drafted the manuscript, wrote the literature, designed the methodology, organized the results and conclusions. Suziana Mat Yasin wrote the literature and supervised the research for this publication.

Conflict of Interest

The authors declare no conflict of interest with this publication.

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POVERTY ASSESSMENT INITIATIVES IN SELECTED ASEAN COUNTRIES

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ABSTRACT

The paper seeks to assess poverty initiatives from selected ASEAN countries, namely Malaysia, Thailand, the Philippines, and Indonesia. The assessment was based on the government's action to deal with poverty. The measurement of poverty was determined according to each ASEAN countries. The findings indicated that countries' governments have struggled due to various problems; all know that this endeavor is difficult to achieve without the participation of all stakeholders in eliminating poverty. The government must consider all the technical implications of whether such modifications in the definition of poverty are necessary and in line with future development policies. Meanwhile, dynamic economic growth is continuously emerging, and the government is exerting efforts via long-term initiatives to ensure a consistent poverty reduction policy. The implications of these assessment reached in developing a sense of ownership and shared responsibility for the SDGs through four platforms—government and parliament, academia and experts, civil society and the media, and charity and business—is one of the government's strategies for eradicating poverty.

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1. Introduction

The 2030 Sustainable Development Goals (SDGs) Agenda provides an incentive for many countries to implement the sustainable development agenda as they progress toward high-nation status. At the end of 2015, 193 United Nations (UN) member nations agreed on an inclusive agenda of 17 Sustainable Development Goals (SDGs), also known as Global Goals, which are explicitly devoted to our future generations to improve the standard of living sustainably. These 17 goals include a wide range of topics, from inequality and poverty reduction to universal healthcare and education. If all of the SDGs were achieved by 2030, people's lives would be enhanced, equal opportunities would be open to everyone, and the world would be more pleasant and peaceful. Unlike previous development action plans, these SDGs recognized shared difficulties faced by nations worldwide and urged effective measures to tackle them. The Millennium Development Goals (MDGs), which preceded the SDGs, did not reconcile economic, social, and environmental issues and instead focused only on the social aspects of development programmes.

SDGs are supreme goals that incorporate human rights and include social development, equitable economic growth, and sustainability. One of the objectives, i.e., Goal 16, focuses on ensuring equal access to justice for everyone by establishing effective, accountable, and inclusive institutions at all levels. Poverty is a multidimensional issue, and combating poverty has been one of the primary goals of governments, particularly in developing countries. International agencies such as the World Bank, IMF, and OECD have prioritized poverty alleviation globally. Poverty entails significant deprivation in numerous fundamental facets of life.

When developing effective policies and initiatives to alleviate poverty, it is crucial to understand the characteristics of those living in poverty. There are several poverty characteristics, like family size and composition, household head and spouse education, occupation, housing and assets, community characteristics, and geographical region. The poor often have larger families than the middle class, are raised by parents who lack formal education, and reside in underdeveloped communities with substandard housing and transportation (Chamberlain, 2001). Analyzing and formulating policies to alleviate poverty are never-ending processes that must be constantly reinforced, updated, and adapted to reflect the new realities of the economy and the accessibility of government institutions. Therefore, the objective of this paper is to review the poverty assessment initiatives, the evolution of the production of poverty knowledge through measurement and assessment, and also to examine the issues and dilemmas involved in applying them in the context of poverty reduction policy processes in selected ASEAN countries namely Malaysia, Thailand, Philippines, and Indonesia.

2. Definition of Poverty Assessment

In the recent decade, much discussion has been over how to define and measure poverty. These concerns have been the subject of much discussion and controversy. In a poverty study, two (2) questions must be addressed. The first problem is identifying the poor, and the second is aggregating the poverty gaps of various people to generate an overall indicator of the amount of poverty (Hagenaars & De Vos, 1988). According to Hagenaars and De Vos (1988), numerous poverty definitions were employed in poverty research and social policy. Fundamentally, all definitions fall into one of three categories:

1. Poverty is defined as having less than the objectively determined absolute minimum.
2. Poverty is defined as having less than others in society.
3. Poverty is defined as not having enough to get by.

Van de Ruit, May, and Roberts (2001) describe poverty evaluation as a simple, low-cost operational instrument used to evaluate the relative poverty levels of micro-loan recipients and a control group of non-recipients. This evaluation is a quick quantitative study that employs proxies for poverty levels based on several crucial factors. Assessment of poverty rates in ASEAN countries is not a new topic that has been studied and has been conducted since the 1990s (Sothirak, 1991; David, Asra, & de Castro, 1999; Gonzales, 2012; Jetin, 2016). Until now, the assessment of poverty in all ASEAN countries has been explored and addressed in stages in accordance with the appropriate benchmarks. Accordingly, the purpose of this research is to review poverty assessment efforts, the development of the production of knowledge about poverty through measurement and assessment, as well as to look at the challenges and ambiguities associated with using them in the context of poverty reduction policy processes in a few ASEAN countries, specifically Malaysia, Thailand, Philippines, and Indonesia. Each of the four ASEAN nations determines its own method for assessing poverty, which will be covered in the following sections. This paper is written based on selected literature on poverty assessment initiatives and tools in selected ASEAN countries.

3. Poverty Assessment Initiatives

3.1 Poverty assessment initiatives in Malaysia

Since the 1970s, Malaysia has made commendable progress in its ongoing effort to eradicate poverty. The country's journey toward poverty reduction came along the way beginning with a racial riot on 13th May 1969 which led to the construction of corrective measures in the form of New Economic Policy (NEP) 1970-1990. The NEP was designed with two distinct strategies - (i) to reduce absolute poverty and eventually eradicate poverty by raising income levels and employment opportunities for all Malaysian irrespective of race, and (ii) to restructure the society to correct economic imbalances and remove the identification of race based on their economic activities. The NEP focused on creating opportunities for the poor to improve their livelihoods such as relocating household to allocated land for farming via schemes under Federal Land Development Authority (FELDA) and Federal land Consolidation and Rehabilitation Authority (FELCRA). By 1990, 114,400 households had been resettled by FELDA to more than 500,000 hectares of new settlements.

The NEP reduced the poverty rate from 49.3 percent in 1970 to 16.7 percent in 1990 (New Economic Model for Malaysia, 2010). In 2016, poverty rates continued to drop to 0.4 percent of total households, or 24,700 households categorized as poor (EPU, 2016). Absolute poverty eradication was a top priority under NEP and National Development Policy (NDP) 1991-2000 before shifting the focus toward reducing income inequality as the country continues to chart significant economic development. Under NDP, the incidence of poverty was reduced to 7.2 percent of total households. In 2002, absolute hardcore poverty was further reduced from 3.9 percent in 1990 to 1.0 percent 2002. The fundamental stance to eradicate poverty via growth and equitable distribution continued in the National Vision Policy (2001-2010) and Vision 2020. The New Economic Model (2011-2020), on the other hand, focused more on inclusiveness as a measure to reduce relative poverty and income inequality since absolute poverty had almost been eradicated, but relative poverty and disparity between the richest and poorest segments of the society continue to rise.

Table 1 summarises the policies undertaken by the Malaysian government to combat poverty. The major poverty eradication programme prior to NEP is land consolidation and rehabilitation by various government agencies. The problem in the 1960s was low income due to small land holdings, which were both unsustainable in the long run and unable to feed the whole family. Resettlement of farmers allows for more economical farming and a more stable income stream for farmers. The NEP continued the existing land consolidation and resettlement efforts and, at the same time, enhanced poverty eradication by introducing more programmes such as

the Irrigation and Drainage (IADP) programmes, Bumiputera Commercial and Industrial Community (BCIC), Orang Asli settlements, microcredit schemes. The NDP continued the programmes undertaken pre- and during NEP and added more Housing Assistance Programme (PPRT) and private sector engagement. The New Vision Policy (NVP) focuses more on specific poverty eradication programs. Programmes were targeted at Bumiputeras in Sabah and Sarawak and urban poverty. Finally, the NEM focuses more on overall inclusiveness, where prosperity is shared equitably.

*Table 1
Poverty eradication programmes*

Policy	Years	Main Programmes	OPP / Malaysia Plan
Pre - NEP	1966-1970	Land Consolidation and rehabilitation by (i) FELDA (1956) (ii) FELCRA (1966) (iii) MARA (1966) (iv) MARDEC (1966) (v) JENGKA (vi) KETENGAH	1 st Malaysia Plan
NEP	1970-1990	(i) Rural Development Schemes -MADA (1970) -LKIM (1971) -RISDA (1973) (ii) IADP Programmes (iii) Microcredit schemes (iv) BCIC (v) Orang Asli Settlements (vi) Other schemes – scholarship, AIM.	OPP1 2 nd , 3 rd , 4 th & 5 th Malaysia Plan
NDP	1990-2000	(i) PPRT Programmes for hard-core poor (ii) Continued land consolidation and rehabilitation, commercialization of farms and enhance education and training (iii) Participation of private sector in poverty alleviation programmes	OPP2 6 th and 7 th Malaysia Plan
NVP	1. 2000-2010	More targeted programmes for: (i) Bumiputera minorities in Sabah and Sarawak (ii) Urban poverty (iii) Skill enhancing for vulnerable groups	OPP3 8 th and 9 th Malaysia Plan
Policy	Years	Main Programmes	OPP / Malaysia Plan
NEM	2010-2020	(i) Boost income & value creation -Retrain and re-skill existing labour force -Introduction of minimum wage of RM1,200 per month in 2020 -Removal of labour market distortions	10 th and 11 th Malaysia Plan

-
- (ii) Creating ecosystem for entrepreneurship
 - (iii) Promoting equal and fair access to opportunities
-

Notes: *OPP – Outline Perspective Plan.*

Source: *Outline Perspective Plan, Malaysia Plan (various issues) & NEAC (2010).*

In summary, the Poverty Line Income (PLI) is the benchmark that must be upgraded to depict the level of minimum sustenance over the years. The PLI should match the improved living standards required for a person to fulfill his or her basic needs. These basic needs have evolved over the years. In the 1970s, basic needs may include food, clothing, and shelter, but in 2020, basic needs cover food, clothing, shelter, education, health, transport, and communication. Since basic needs have evolved, the PLI must also be upgraded to include a current definition of basic needs. Failure to incorporate the ever-evolving basic needs may make policymakers think that the poverty level has decreased. However, it decreased according to the level in the 1970s but has not fallen below the acceptable level in 2020. Using a new methodology that leads to higher PLI is a positive step taken by the Malaysian government to address this tautological issue appropriately.

However, improved poverty measure does not lead to a reduction in poverty but provides a basis for more accurate and targeted policy making. In the near future, fiscal policies on assistance to the poor should be tailored to a different segment of society. Another issue in Malaysia is that several households are vulnerable to falling into the B40 category. However, they are currently in the M40 bracket due to a lack of savings and low social protection. An income shock such as COVID-19, which causes job losses, may significantly impact these vulnerable households.

Similarly, the customized Multidimensional Poverty Index (MPI) is also subjected to the same criticisms where both PLI and MPI are inadequate compared to other upper middle-income countries' benchmarks. The MPI is also criticized for not considering statistically invisible' communities such as persons with disabilities, Orang Asli (indigenous locals), foreign workers, and refugees (UNSR Report, 2019).

3.2 Poverty assessment initiatives in Thailand

Thailand's economy grew at an average of 7.5% annually in the boom years and 5% during the Asian Financial Crisis from 1998 – 2005 (Bank, 2020). This growth created millions of jobs that helped pull millions out of poverty. Gains along multiple dimensions of welfare have been impressive, more children are now getting more years of education, and virtually everyone is now covered by health insurance. In contrast, other forms of social security have expanded. However, economic growth in Thailand is expected to fall in the year 2020 due to the enormous impact of the Pandemic COVID-19 outbreak, and it is showing the decline in external demand as well as domestic demand that will affect trade and tourism, supply chain disruptions, and weakening domestic consumption.

According to the World Bank, poverty declined substantially over the last 30 years, from 65.2% in 1988 to 9.85% in 2019 (based on national estimates). However, the growth of household incomes and consumption growth both have stalled nationwide in recent years. Thailand's Annual Household Income per capita reached USD 3,322 in 2017, compared with the previous value of USD 3,276 in 2015. For a record, the average annual household income per capita is USD 1,090 from 1981 – 2016. This situation resulted in a reversal in the progress of poverty reduction in Thailand, with the number of people living in poverty rising. Between 2015 and 2018, the number of people living in poverty increased from 7.2% (4.85 million) to 9.8% (6.7 million) in respective years. Inequality increased between 2015 and 2017 (The World Bank). During this period, average household consumption per capita grew, but the household consumption of the bottom 40% of the population shrank.

3.2.1 Measuring poverty in Thailand

Thailand has attempted to study the measurement of poverty since 1962 through technical support from the World Bank. Subsequently, the poverty assessment technique has been continually developed per the existence of data in each period. Previously, the study of poverty incidence could not yield adequate details due to data and technical limitations. To analyze poverty, the measurement of the economic welfare of each household in the society becomes the primary formula to get the correct indicator. Although monetary income is widely used to measure economic welfare, it has many serious drawbacks. The major drawback is that it excludes several in-kind transfers, imputed rent, home production, voluntary leisure, and net worth or wealth.

The income concept is used fairly comprehensively; it includes (i) wages and salary, tips, bonuses, etc., (ii) net profits from farming and non-farming, (iii) property income such as land rent, (iv) royalties, interest and dividends (v) current transfers received such as assistance payments, pensions, scholarships, and grants (vi) non-money income (income in kind) which includes the value of goods and services received as part of pay, home-produced and consumed (including the rental value of the owner-occupied dwelling or received free from other sources (Kakwani & Krongkaew, 1996). The economic welfare of households is determined not only by their income but also by their needs. Since households differ in terms of size, age composition, and other characteristics, it is expected that they will have different needs. Then, the measurement of economic welfare should consider the differing needs of the households.

3.2.2 Thailand's government policies toward poverty

As the Thailand government is keen to promote and increase the well-being of their society, much effort has been initiated to ensure each group of communities contributes to economic development. The role of government policies can be reviewed based on three major categories. First is the series of the national economic and social development plan; second, the three significant macroeconomic policies are industrial, exchange rate, and tax. The last is a more specific measure announced to battle poverty, the Agricultural Land Reform. The following discussion is as follows:

i) The national economic and social development plans

Since the 1960s, economic development in Thailand has been under the guidance of a series of national plans known as the National Economic and Social Development Plans. Each plan covers five years. Thailand's development plan's main objective is to steer the country towards security, prosperity, and sustainability. The plans are as follows:

- The 1st Plan (1961 – 1966)
- The 2nd Plan (1967 – 1971)
- The 3rd Plan (1972 – 1976)
- The 4th Plan (1977 – 1981)
- The 5th Plan (1982 – 1986)
- The 6th Plan (1987 – 1991)
- The 7th Plan (1992 – 1996)
- The 8th Plan (1997 – 2001)
- The 9th Plan (2002 – 2006)
- The 10th Plan (2007 – 2011)
- The 11th Plan (2012 – 2016)
- The 12th Plan (2017 – 2021)

ii) Macroeconomic policies

Macroeconomic policies focus on three crucial functions of the economy, covering the allocation of resources, economic stability, and redistribution of income. Industrial Policies, introduced in 1972, aim to promote the industrial sectors. More incentives were given to the exporting industries, including exempting export duties and business taxes. This policy has given tremendous working opportunities to the local community

iii) Agricultural land reform

The agricultural policy is the direct policy for poverty alleviation especially in rural areas. The main objectives of this policy are:

1. to enable farmers to have their land for cultivation,
2. to increase agricultural productivity, and
3. to reduce the income gap between the rural and urban population.

As a result of this programme, Thailand's agricultural industry was revamped entirely between 1977 and 1980. The government has implemented Rural Agricultural Credit policies to boost the rural loan market. This situation enables the rural community to benefit from this policy

3.3 Poverty assessment initiatives in Philippines

Asian Development Bank (2009) highlighted several causes of poverty in the Philippines. Among others, the country's poverty rate is attributed to the economic failure to generate quality employment for the poor, low growth elasticity of poverty reduction, an increase in food prices which led to food inflation, the country's failure to manage population growth, high levels of income, land, and regional inequality, regular shocks and exposure to conflicts, natural disasters, and environmental poverty, and economic crisis. Other causes were also related to less access to credit, lack of good quality health facilities, and lack of institutional support (Mina & Imai, 2016). Besides, chronic poverty was also attributed to the younger and less educated head of the family and large household size. The heads of families are self-employed or work as laborers or smallholder producers. Most low-income families rely on farming or fishing for income. They live in rural areas and some informal live-in settlements in urban areas. Poor communities often have large numbers of family members. Lack of access to health services and sex education has resulted in an increasing number of children without good family-economic planning. This sequence continues in the same family, causing the cycle of poverty impossible to be broken (World Bank, 2018). The World Bank (2018), in their report "Making Growth Work for the Poor: A Poverty Assessment for the Philippines," also highlighted three prominent factors that delayed poverty reduction efforts. The factors were; a lower pace of growth that slowed down poverty reduction, high-income inequality related to limited access to quality education and healthcare, and risks of natural disasters and conflicts.

3.3.1 Poverty scenarios in Philippines

The Philippines benefits from diverse biodiversity and plentiful natural resources, despite its susceptibility to natural disasters such as earthquakes and typhoons. With a population of more than 100 million, the Philippines' economy is evolving from an agricultural-based to more attentive service and manufacturing-based economy. The Philippines' economy is thriving, the 34th largest economy in the world (Imf.org, 2020). Such emerging market conditions also mean that some businesses will develop faster and more robust than others. Those who are not currently impoverished will likely become so if they are unable to adapt. Figures (2019) reported that 26%

of the Philippines' population lived below the national poverty line in 2005. The numbers slowly decreased to 21.6% in 2017 and further reduced to 16.6% in 2018 (Asian Development Bank, 2020). The progress toward poverty eradication has been relatively slow, and the country still has the highest poverty rate among ASEAN countries (Asean Secretariat, 2019).

In the Philippines, 51% of the population resides in rural areas. They are the rural economy's drivers, including agriculture, hunting, forestry, and fishing. Fishermen and farmers have the most effective poverty rate due to decreased agricultural production, unproductive small farming operations, and unsustainable agricultural techniques (Romana & Leonardo, 2017). Other obstacles confronting impoverished rural farmers include a lack of infrastructure, transportation services, and insufficient road and port facilities. The number of poor households increased from 3.3 million to 3.9 million in 2009 (Mina et al., 2016).

3.3.2 Poverty assessment tools used in Philippines

3.3.2 (a) Poverty assessment tools (PAT)

PAT is a free and easy assessment tool used to compare and track changes in poverty levels. The United States Agency developed it for International Development (USAID). In August 2011, the Philippines underwent a PAT-based poverty assessment (USAID Poverty Assessment Tools, 2011). There are mainly two components of PAT. The first component consists of specific household indicators considered the best predictors of poverty in the country. The poverty line value used for reporting is 9060 pesos per capita per year. There are ten indicators in this first component. The indicators include the number of people in the family who are under the age of 17, the type of construction materials used for the house's outer walls and roof, the types of toilet facilities, the number of children attending school, information about family members with salaried employment, and the number of house appliances owned by the family. The second component is automatically connected to data entry templates called Epi Info and CPro. This component estimates the share of households living below the applicable poverty line. The results derived from PAT will be in the percentage of people living beyond or below the poverty line.

3.3.2 (b) Simple poverty scorecard – Poverty assessment tool

The Simple Poverty Scorecard was developed to estimate the probability of selected households with income below the poverty line (Schreiner, 2016). It consisted of ten low-cost indicators from the Philippines 2009 Family Income and Expenditure Survey, which were straightforward, verifiable, and can be used by the non-specialist. It was reported that using The Simple Poverty Scorecard; data can be collected in ten minutes (Schreiner, 2016). The scorecard can be used to assess three crucial pieces of information. Firstly, it can help predict 'poverty likelihood,' which refers to the likelihood that the household's per-capita salary is below the poverty line. The scorecard can also assess the average poverty likelihood in the group of households. Besides that, the scorecard can estimate the changes in poverty for a group of households. The scorecard assesses household information such as; the number of family members in a household, number of children attending school, work information of the family members, education background of the female head/spouse, type of construction materials of the house's outer walls, information of household possessions of furniture, kitchen equipment, and electrical appliances.

3.3.2 (c) Progress out of poverty index (PPI) TM

The Progress out of Poverty Index (PPI) is an assessment tool used to measure the number of households living below the poverty line while assessing the performance of intervention programmes. PPI can also be used to track changes in the poverty line. There are ten indicators in PPI. The indicators tend to measure household composition, the educational background of family members, housing conditions, and ownership of durable goods. It was reported that PPI is

a simple and user-friendly tool and is cost-effective and timely (Desiere, Vellema, and Haese, 2015). PPI for the Philippines was generated in May 2018 by Innovations for Poverty Action (IPA). Indicators were based on the 2015 Philippines Family Income and Expenditure Survey (FIES) (Innovations for Poverty Action (IPA), 2020).

3.3.3 The Philippines government initiatives

From 2006 to 2015, the drivers for poverty reduction were; an increase in wages, emphasis on employment other than agriculture, government transfers, and remittances from domestic and foreign sources (World Bank, 2018). Government transfers, for instance, helped reduce 25% of poverty. This was done via cash grants given through social assistance programs. Nevertheless, the most comprehensive initiative for poverty reduction in the Philippines is AmBisyon Natin 2040, which reflects a long-term vision to eradicate poverty and improve the livelihoods of the poor (Natin, 2017). Philippine Development Plan (PDP) 2017-2020, a blueprint developed based on AmBisyon Natin 2040, aimed to reduce the country's poverty rate to 13.15% by 2022. The entire plan has seven parts: an overview of the economy, development challenges, development strategies explained in various chapters: enhancing the social fabric, inequality-reducing transformation, increasing growth potential, enabling and supportive economic environment, and foundations for inclusive and sustainable development (National Economic & Development Authority, 2017).

3.4 Poverty assessment initiatives in Indonesia

Indonesia is an agricultural country with a population of 260 million. Moreover, 11% represents the percentage of poor people, 5.6% represents the jobless, and the Gini Ratio of the country is 0.397. The Gini ratio is a statistical measure of the degree of variation or inequality represented in a set of values, used primarily in analyzing income inequality. Most of the poor are in rural areas with farming livelihoods. The percentage of farm households decreased from 53% (the year 2003) to 40.2% (the year 2013), which was equal to 25,751,256 households (Censuses *et al.*, 2013). The data by the Ministry of Agriculture of Indonesia showed that 68.8% of farm households cultivate their food crops, and 55.3% are smallholder farmers who work as farmers with less than 0.25 hectares of wetlands.

Susilastuti (2018) found that Indonesia's agricultural industry consists of state-owned, privately held, and smallholder plantations. Large farms concentrate on primary export commodities such as palm oil and rubber, while small farmers concentrate on rice, soybeans, corn, and fruits and vegetables. Less fortunate individuals can only perform small-scale farming compared to farms that generate a substantial profit. Even though Indonesia is an agricultural nation, Susilastuti (2018) argued that agricultural production has no significant effect on the Gross Regional Product growth rate and has not been able to reduce poverty. In contrast, the Gross Regional Product growth rate has a significant effect and is the prevalent factor in poverty reduction.

Apart from that, Adiprasetyo *et al.* (2015) stated that organic farming practices can potentially increase the income of horticultural farmers. Their study also showed that the factors that constrained the development of horticultural organic farming were limited knowledge of organic practices, access to market, financial and risk management services, or support. They suggested that sustainable agriculture, such as horticultural organic farming practices, could reduce poverty. They also believed that the government should concentrate on sustainable agriculture and, at the same time, reduce poverty among farmers. Besides, Zainal and Maya Aprita Sari (2020) found that there is a positive and significant correlation between social capital and the level of poverty. Farmers who have a higher stock of social capital are found to be lower in the poverty rate. For instance, Dahliah, Kurniawan, and Putra (2020) had come out with the regional economy of the Bantaeng Regency of Indonesia. The district is dominated by the

agricultural sector, especially food crop agriculture, the sub-sector of the plantation, livestock sub-sector, and fishery sub-sector. As a result, the local economic competitiveness and development in Bantaeng District's efforts to lift people out of poverty are not fully effective.

The increase in urban water demand forces the stakeholders like government, academia, and communities to come forward and discuss the importance of water sensitivity. The Indonesian government has targeted universal access to water supply and sanitation. According to Soedjono et al. (2018), water sensitive city is a very significant issue for the development of future cities. The quality of water resources is an essential basic need that ensures the poor get clean and quality water. Their study showed that the concept of water sensitive city was likely to be possible and not easily implemented in Surabaya.

Additionally, it was not easy to be implemented because of the difficulty in handling basic human needs like poverty eradication, education, and sanitation in this area. Therefore, the government used a top-down approach to implement its development targets. The community proposes the developmental priority they need in the bottom-up approach. Soedjono et al. (2018) also stated that the government already understands the concept of a water-sensitive city from the centre to the bottom. It is not enough to be taught only as a concept. It must be involved the attitude of the society and put this attitude to their daily lives and bring the city's society to give more attention to water-related issues. Water sensitivity is not only an issue in Indonesia, but it is also a global issue in many other countries. In addition, the issue of clean water is often a problem that relates to the lower-class community in rural or urban areas.

Moreover, the Indonesian government is proactive in its efforts to assist disabled individuals. According to Byrnes et al. (2007), people with disabilities (henceforth PWD) are the largest population in the world and one of the most disadvantaged minority groups. Twenty percent of the world's poorest population are people with disabilities. According to the World Health Organization (2011), persons with disabilities account for about 15 percent of the worldwide population; consequently, it is crucial to implement a programme that focuses on reducing poverty among this population segment. Bella and Dartanto (2018) investigated the effects of disability, kinds of disability, and sources of impairment on a household's poverty status and poverty gap index. According to their research, families with a handicapped head are 1.3 percentage points more likely to fall into poverty and have a poverty gap score of 2.6%. Poverty reduction initiatives for individuals with disabilities in Indonesia lag due to a lack of available data and a lack of research based on solid facts. Further, Sytsma Jordan and Mayville (2003), Kavanagh et al. (2015), and Smith (2007) discovered that various kinds of disability might result in a variety of socioeconomic circumstances. As we already know, disability will lead to both a cause and a consequence of poverty. Bordieri and Drehmer (1988) and Florian (1978) conducted two further studies in which they came to the same conclusion: diverse causes of disabilities affect job enrollment. Therefore, the responsible parties should have several policy options available that might significantly impact people with disabilities from now.

Poverty reduction has become a significant policy initiative in Indonesia since the economic crisis in 1997/1998. According to Suryahadi et al. (2010), the Indonesian government established the social safety net (JPS) program, covering food security, health, education, employment creation, and community empowerment since the economic crisis hit in the year 1997/1998. The JPS agenda became the government's first poverty reduction and social protection program post-crisis. The government strategy for poverty reduction is articulated through clustering poverty reduction programs into three clusters. The first cluster is social assistance, intending to provide direct assistance to poor households to ease the burdens of meeting necessities. The second cluster is community empowerment, which aims to provide social funds to poor communities. The third cluster is microenterprise empowerment, to provide access to credits for microenterprises without being hindered by the requirement of having to provide collaterals. The study proposed three areas of reform, namely are:

1. Institutional Capacity in Managing Reduction of Poverty and Vulnerability
2. Quality of Poverty Database and Targeting Mechanism
3. Integration and Quality Improvement of Social Assistance, Community Empowerment, and Micro-Enterprise Empowerment Programs

In order to accelerate government efforts to reduce poverty and encourage community development in Indonesia, in the year 2006, President Yudhoyono announced the launch of the National Programme for Community Empowerment [Program Nasional Pemberdayaan Masyarakat] (PNPM). This programme act as the policy and operational umbrella for the country's programmes. Oktarina, Sachnaz Desta & Furuya (2016) examined the determinants of village budget allocation of PNPM Mandiri investments from its first earmarked in 2007 and 2011. The study by Oktarina, Sachnaz Desta & Furuya (2016) showed that the villages-specific endowment prior to PNPM Mandiri establishment. Therefore, it was suggested to have a reasonable contribution to endogeneity on villagers' decision to select particular allocations. And the allocation of investment was relatively significant in alleviating the village's poverty.

One of the programs that aim to reduce poverty rates in Indonesia is the provision of housing for the community, especially the underprivileged. Moreover, it is a million houses program proclaimed by the Ministry of Public Works and People's Housing. This program is interrelated with the SDGs (Sustainable Development Goals), especially within goal number 11: sustainable cities and communities. The presence of the global agenda can provide new insight into a country's development. SDGs (Formerly known as MDGs – Millenium Development Goals) aim to build and expand the coverage of the MDGs that ended in the same year when SDGs launched, and this international platform tries to integrate economic and social development with environmental sustainability. Six factors influence the achievement of SDGs, specifically, converging agendas, collaborative partnerships, well-established poverty reduction programs, and alternative funding through Zakat, the innovation of databases, and learning from best practices (Rassanjani, 2018). Rassanjani (2018) also stated that the Indonesian government is trying to cultivate a sense of ownership and shared responsibility for SDGs by developing collaboration across four platforms: government and parliament, academia and experts, civil society and the media, and philanthropy and business.

4. Conclusion

Malaysia had successfully reduced its absolute incidence of poverty over the years through various government policies and initiatives. Pockets of poverty still exist in specific areas and communities, which are being addressed through more targeted and specific approaches such as infrastructure development for rural poor, more income-generating activities, and micro-credit schemes for urban poor. In the future, there will be many areas for improvement in assessing Malaysia's level and rate of poverty. Whether PLI or MPI is used as the definition and tool for poverty measurement, both methods must correspond to the country's present state of development and requirement for sustenance. Failure to account for the current state of needs would result ineffectiveness in addressing the needs of bottom 40 percent and absolute poverty. In due time, Malaysia may want to modify its official definition of poverty standards in line with other upper-middle-income countries. The Malaysian government must account for all the technical implications and whether such modifications in the definition of poverty are necessary and in line with the future development policies in Malaysia. With due respect, governments, the public, and the private sector must communicate their respective expectations to ensure all segments of society are accurately and adequately addressed.

Thailand has a relatively good record of poverty re-education compared to other developing countries. Since the early 1960s, the proportion of poor and local communities has been declining. The trend of an improving poverty incidence coincides with the impressive growth of the economy. Since the end of the Second World War, Thailand has proved that its

economy has achieved steady and high economic growth based on agriculture. Agriculture production in Thailand grew quite impressively in the past. Agriculture has transformed Thailand's social and economic sector into one of the most booming sectors in the region. Thailand is successful in utilizing its large resource base. Primary agricultural production is diversified and gains stability. The Philippines' dynamic economic growth is continuously emerging, and the government is exerting efforts via long-term and short-term initiatives to ensure consistent poverty reduction. Poverty in the country is based on many factors, mainly inequality, the provision of health and education facilities, and the availability of quality employment.

Efforts to assess poverty in Philippines were made via several assessment tools. The most widely used were the Poverty Assessment Tools (PAT), the Simple Poverty Scorecard – Poverty Assessment Tool, and the Progress out of Poverty Index (PPI). The assessment tools measure the probability of households living below the national poverty line. Indicators were mainly focused on assessing families' composition, employment information, ownership of household appliances, and children's educational background.

Although poverty rates in Indonesia have shown a slight decline, the Indonesian government and other responsible parties should come forward and work together to eradicate poverty. The Indonesian government is trying to cultivate a sense of ownership and shared responsibility for SDGs by developing collaboration across four platforms: government and parliament, academia and experts, civil society and the media, and philanthropy and business. Furthermore, the government's one-size-fits-all approach to alleviating poverty in Indonesia (allocating cash and distributing rice to the poor people) cannot solve some regions' poverty problems.

The data for the poverty rate in the aforementioned nations are still present, but they are decreasing. The assessment of this poverty is subjective and cannot be compared to methodologies used in other nations, particularly in European nations. This is due to the varied sources of national income and consequently, there are various ways to approach the issue of poverty. It is advised that future research explore the primary causes of poverty in a specific location in greater detail using the qualitative approach, such as structured interview. The researcher may have better results with this approach if they use primary data. The contribution of this research has reach into developing countries like Malaysia, Indonesia, the Philippines, and Thailand can, in general, adapt programmes implemented in adjacent nations whose goal is to eradicate poverty by fostering economic development in their individual country.

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INVESTIGATING THE MACROECONOMIC DETERMINANTS OF HOUSING PRICE INDEX (HPI) IN MALAYSIA

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ABSTRACT

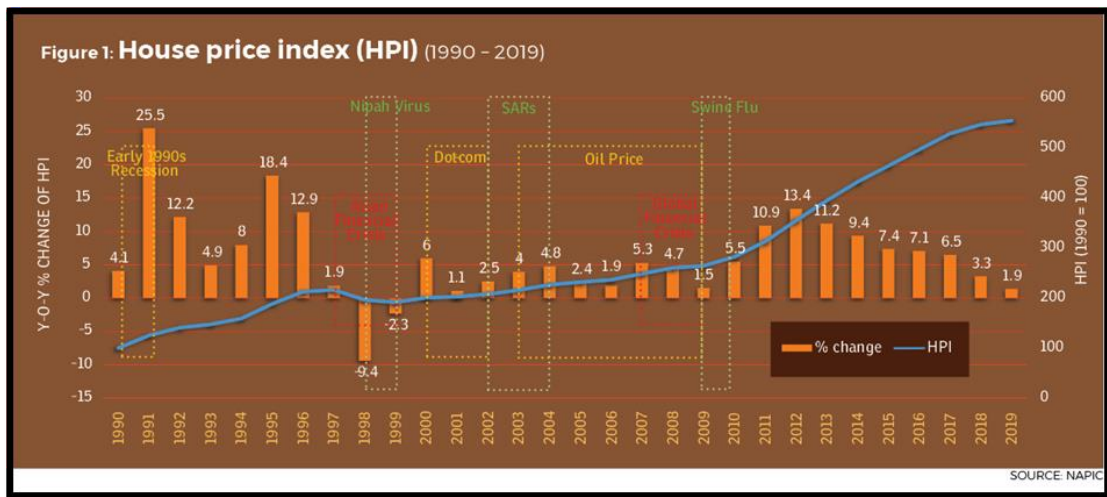
This research aims at identifying the macroeconomic factors that influence housing prices in Malaysia from 2001 to 2020, consisting of 20 observations. Nowadays, the cost of housing in Malaysia has steadily increased, negatively affecting households. It has generated plenty of issues for the country, especially in its economic development. As a result, this study aims at examining the relationship between the housing price index and macroeconomic variables that influence housing prices. The macroeconomic variables chosen are gross domestic product (GDP), lending rate (LR), inflation rate (IR), and unemployment rate (UR) in Malaysia. The regression analysis method is applied in this study to capture the effect of independent variables. This study concludes that the lending and unemployment rates are significant for the Malaysian housing price index. In contrast, the gross domestic product (GDP) and the inflation rate are not substantial with the housing price index in Malaysia. Although the lending and unemployment rates were significant, these independent variables negatively correlated with the house price index. The findings help the government, investors, policymakers, housing developers, and home buyers understand the influencing factors behind changes in house prices.

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1. Introduction

Malaysia's property price index is expected to be the 29th highest among 40 Asian countries in 2020, according to the World Bank (Numbeo, 2020). As a result of the COVID-19 pandemic, the demand for property has been restricted, placing downward pressure on housing prices. According to the Valuation and Property Services Department (JPPH), Malaysia's house price index rose 0.3% in the first quarter of 2021, compared to 1.9% in 2020, according to the same department. Prices increased by an average of 7.5% annually between 2010 and 2019. Furthermore, due to Malaysia's rapid economic expansion, there has been an increase in demand for residential accommodation in the country's metropolitan areas (Ong, 2013). A direct outcome of this has been a massive spike in the price of residential real estate over the past ten years.

Having a home is essential for every human being since housing is a fundamental requirement that may serve as a haven for people to live in and provide them with safety. However, the most significant problem for households when deciding to purchase a house is the fluctuation in housing prices (Nurul Azam Haron, 2013), as the housing prices index is comprised of indices of housing rent prices, real and nominal house prices, and ratios of price to rent and price to income, among other things. Studying this backdrop is important because it helps us understand how macroeconomic drivers like GDP, lending, inflation, and unemployment affect Malaysia's housing price level. In the eyes of consumers, investors, and policymakers, Malaysia's housing price level is critical. The reason is that changes in the price level can affect the efficiency and effectiveness of the Malaysian economy, investor decision-making, and household wealth (Sabrina Abdul Latif et al., 2020).



Source: National Property Information Centre (NAPIC)

Figure 1: Malaysia House Price Index and Year-on-Year Percentage Change

The Housing Price Index (HPI) in Malaysia has increased since 2001. From 2001 to 2009, the Malaysian house price index increased consistently; however, from 2010 to 2015, the Malaysian house price index increased significantly. However, due to the Global Financial Crisis in 2008, Malaysia's GDP fell from 3.32 percent (2008) to -2.52 percent (2009). Therefore, several businesses began to minimize costs by reducing labor working hours. Following then, the growth rate significantly increased by around 4.1 percent from the 2009 third quarter (1.5 percent) to the 2009 fourth quarter (5.6 percent). Furthermore, from the first quarter of 2010 to the first quarter of 2012, housing prices increased by an average of 8.83 percent yearly. This issue happened because Malaysia was still recuperating from the Global Financial Crisis. Between the first quarter of 2001 to the fourth quarter of 2015, the growth rate of the house price index was at its greatest, at 12.2 percent, and peaked in the fourth quarter of 2012 and the third quarter of 2013. After reaching a peak, the growth rate declined until the third quarter of 2016. In summary, due to the rising of Malaysian housing price index since 2001, it is critical for this study to identify and analyze the crucial factors of house prices in Malaysia. However, the government's efforts to boost the economy aren't entirely ineffective. To stop developers from overbuilding, the government has implemented several policies to prevent people from speculating and stop developers from overbuilding. Stamp duty on households worth more than MYR 1 million (US\$ 238,578) has increased from 3% to 4%. The government also added a 5% real property gains tax (RPGT) to selling properties owned for six years or more. To deal with the effects of the pandemic on the housing market, however, these rules have been temporarily eased up (Guide, 2021).

Only 72.5% of Malaysian citizens own homes out of the entire population (Ismail, 2015). According to Sherilyn Goh (2015), Malaysia's youthful generation with low or medium incomes, which accounts for almost half the population, is currently unable to acquire a dream home. The statistic indicates that most of the young generation or recent graduates cannot purchase a house since housing prices have risen faster than their income levels. If we ignore the impact of rising house prices on macroeconomic indicators, several implications or problems may develop. The rise in housing prices can be seen as a severe problem with negative implications such as financial insolvency stress and reduced economic growth. Small fluctuations in housing prices significantly impact households looking to buy a home, as evidenced by the high percentage. Most purchasers are concerned that they will be unable to keep up with the rising house costs (Ong & Chang, 2013). Governments and policy analysts have identified a need for more sufficient and reasonably priced housing as a critical challenge facing the country. As a result of the quick rise in house and land prices, households with a medium income level are finding it difficult to purchase a home. Thus, the continual rise in house prices in Malaysia has sparked interest in this study, which aims to analyze and identify the significant factors affecting house prices. Hence, this research seeks to understand the relationship between macroeconomic variables: gross domestic product (GDP), lending rate, inflation rate, unemployment rate, and housing price index (HPI) in Malaysia.

2. Literature Review

2.1 Gross Domestic Product (GDP)

A country's gross domestic product (GDP) is the total value of all the finished goods and services made inside its borders during a specific period. It is a broad measure of the total amount of domestic production (Jason Fernando, 2021). The Gross Domestic Product (GDP) is a way to measure how well a country is doing economically. Hence, a nation's GDP significantly affects the government, policymakers, and people who buy and sell homes. The real GDP is considered the main macroeconomic driver of house prices for a long-term period.

Several studies have been conducted to find the relationship between the GDP and the housing price index. It was found that GDP affects Malaysia's housing price index (Ong, 2013). He mentioned that housing investment is part of the GDP and that the housing price index will increase when the GDP grows. This statement is supported by Faiz and Ridzuan (2020), whose findings showed that increased

expenditure on consumption also contributes to a rise in GDP, ultimately leading to an increase in house prices. Finally, Nurul Azam Haron (2013) found that GDP and the housing price index have a significant relationship. These researchers concluded that growth and GDP increases would simultaneously cause the housing price index (Wee et al., 1999). On the other hand, several studies found that GDP was not the determinant of the housing price index in Malaysia (Pillaiyan, 2015). This research was supported by other research that indicated that GDP and the housing price index in Malaysia have a non-significant relationship (Trofimov, 2018). The researcher said that if there is much economic growth for a long time, it can make people want to build more housing, leading to an oversupply. He said that in 2005, there were a lot of uncompleted properties in Peninsular Malaysia, with 755,000 units still yet to be sold. Based on the literature review made by past researchers, there were arguments from researchers on whether GDP is the primary determinant of the housing price index in Malaysia.

2.2 Lending Rate

The lending rate, or "base lending rate," is defined as the cost of a loan (Banton, 2021). It is often called the "interest rate," the amount lenders charge as a percentage of the amount loaned over a specified period. The changes in lending rates will have a direct impact on the housing market in Malaysia. Teck-Hong (2010) stated in his analysis that base lending rates are the best essential driver of residential housing activity in Malaysia.

Researchers in previous studies found a significant relationship between the lending rate and the residence price (Abdul Latif et al., 2020) and (Shi et al., 2014). This finding was further supported by Lee (2009) and Vries and Boelhouwer (2005). They agreed with this conclusion and stated that macroeconomic variables such as lending rates have a major influence and significant impact on property prices. This is because the lending rate is linked to the cost of the property, making it an essential factor to consider when purchasing a home (Wang & Zhang, 2014). However, in contrast, research by Pinjaman and Kogid (2020) stated that an insignificant relationship exists between housing prices and interest rates where the rise in the stated macroeconomic factor triggers a decline in house prices. In addition, several researchers, such as Holstein et al. (2013) and Choudhury (2014), supported this statement by concluding that mortgage and lending rates have a non-significant impact on the housing price index. As observed in this review, many experts expressed their opinions based on their findings on lending rates. Some researchers found different results on whether the lending rate has a significant relationship with the housing price index in Malaysia.

2.3 Inflation Rate

Inflation can be defined as a persistent rise in the economy's price level. Most products in the economy will increase in price during inflation, according to Tsatsaronis and Zhu (2004). Housing is generally seen as an excellent inflation hedge since house prices grow in synch with inflation. Somehow, housing prices are not affordable for the younger generation in Malaysia.

According to Hossain and Latif (2009), the inflation rate affects housing price volatility since it can potentially drive-up property prices over the long term. Furthermore, inflation may impact housing prices in Malaysia since it affects people's expenditures, resulting in lower demand for housing. Although some studies have discovered a significant relationship between housing prices and inflation rates, these two variables have a non-significant relationship. According to Hao Guo et al. (2015), rising house prices can drive inflation in the short run, while increasing housing prices can control inflation in the long run. In other words, the influence of inflation on housing prices is lower than that of housing prices on inflation, implying that housing prices can hedge inflation over time (Kuang & Liu, 2015). In conclusion, past researchers found different outcomes on whether the inflation rate is the primary macroeconomic determinant of the housing price index in Malaysia due to various points of view and sources of studies.

2.4 Unemployment Rate

The unemployment rate is the percentage of individuals actively looking for work. During an economic downturn, the unemployment rate will rise, lowering demand for residential construction because most people cannot afford a house. As a result, home prices have dropped (The Investopedia Team, 2021). The previous studies by Mrochko (2020) found a non-significant relationship between the unemployment rate and housing prices. This study was supported by Aspden (2012) and Abelson et al. (2005) that the unemployment rate is inversely associated with housing prices. When a country experiences economic troubles, such as unemployment, housing prices are expected to rise. In the long run, the housing market acts as an equilibrium price based on the 'supply and demand' method. When the economy is in a deep recession, housing prices fall due to credit constraints, causing the unemployment rate to rise.

Moreover, Gan and Zhang (2013) discovered a non-significant relationship between the unemployment rate and house prices. On the demand side, if unemployment is high, a household's inability to enter the housing market is a financial barrier because they cannot obtain a mortgage. As a result, the number of buyers may be reduced. However, in past studies by Xu and Tang (2014) using a cointegration vector, they found a significant connection between the unemployment rate and housing prices. Based on a survey of prior researcher investigations, most of the results revealed an inverse connection between the two factors. However, other researchers have claimed a significant relationship between the unemployment rate and housing prices. Nevertheless, the arguments on whether the unemployment rate has a significant relationship with the house price index still occur due to different outcomes of the final research and views conducted by previous researchers.

3. Methodology

3.1 Research Design

The study will make use of secondary data, which is information that has already been obtained from primary sources and made available to researchers to use in their studies. Secondary data would be applied in this research because, unlike preliminary data, it can be computed in units of measurement and produce quantifiable results. The study will use secondary data gathered from various sources, including Thomson Reuters DataStream, Statista, World Bank data, Trading Economics, Google Scholar, EViews, the Department of Statistics Malaysia (DOSM), and the International Monetary Fund (IMF).

3.2 Conceptual Framework

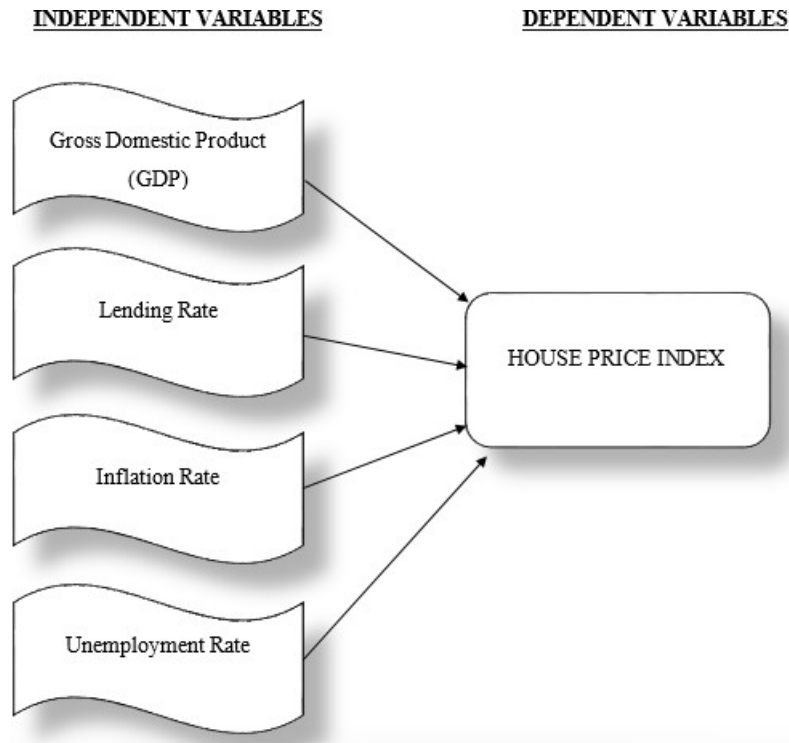


Figure 2: Theoretical Framework

3.2.1 Dependent Variable

A dependent variable (DV) is a variable that is influenced by the independent variables. The dependent variable is the outcome variable measured in each subject that independent variables have affected. In this research, the dependent variable is the housing price index in Malaysia.

3.2.2 Independent Variable

The independent variable (IV) modifies or adjusts the dependent variable and is assumed to influence dependent variables either in positive or negative correlation. Thus, it can be assumed that independent variance shall influence the variance of dependent variables.

Table 1
Independent Variables

Independent Variables	Measurements	Abbreviation
Gross Domestic Product	$[(GDP_1 - GDP_0) / GDP_0] \times 100$	GDP
Lending rate	The weighted standard rate offered by commercial banks on all loans in national currency. The rate is weighted by loan amounts.	LR
Inflation rate	$[(Consumer\ price\ index_1 - Consumer\ price\ index_0) / Consumer\ price\ index_0] \times 100$	IR
Unemployment Rate	$(Unemployed\ people / Labor\ force) \times 100$	UR

3.3 Method of Data Analysis

3.3.1 Descriptive Analysis

The descriptive analysis examines what exists and attempts to prepare new ways of discovering facts. It entails acquiring data about products, people, individuals, events, and circumstances and organizing, tabulating, depicting, and describing the output. Descriptive analysis, also known as descriptive analytics or descriptive statistics, defines or summarizes data using statistical techniques. As one of the major types of data analysis, descriptive analysis is famous for extracting accessible insights from uninterpreted data. Descriptive statistics include types of variables as well as measures of distribution, central tendency, dispersion, and position. The data were described using the mean, median, standard deviation, variance, minimum and maximum variables, kurtosis, and skewness.

3.3.2 Correlation Analysis

A correlation is a statistical measurement of the relationship between two variables. Possible correlations range from +1 to -1. A zero correlation indicates that there is no relationship between the variables. Next, a -1 indicates a perfect negative correlation, meaning that as one variable goes up, the other goes down. A correlation of +1 indicates a perfect positive correlation, meaning that both variables move in the same direction (Kendra Cherry, 2021). A zero correlation suggests that the correlation statistic did not indicate a relationship between the two variables. A zero correlation is often demonstrated using the abbreviation $r = 0$.

3.3.3 Regression Analysis

According to Studenmund (2014), regression analysis is a quantitative approach that uses the quantification of a single equation to explain changes in one variable (dependent variable) as a function of changes in another set of variables (independent variable). It is essentially a quantification of economic theory to assess an entirely theoretical economic correlation.

4. Results

4.1 Descriptive Data Analysis

Date: 12/13/21 Time: 15:59 Sample: 2001 2020					
	HOUSING_...	GDP	INFLATION...	LENDING_...	UNEMPLOY...
Mean	5.358500	4.336000	2.027765	5.374306	3.379000
Median	4.075000	5.310000	1.917613	4.985000	3.300000
Maximum	13.400000	7.420000	5.440782	7.125003	4.500000
Minimum	1.200000	-5.590000	-1.138702	3.944425	2.900000
Std. Dev.	3.467850	3.083715	1.419198	0.900601	0.337138
Skewness	0.833979	-2.143030	0.255455	0.400726	1.728493
Kurtosis	2.700874	6.894288	3.670065	1.862324	7.227795
Jarque-Bera	2.392966	27.94649	0.591680	1.613859	24.83114
Probability	0.302255	0.000001	0.743907	0.446226	0.000004
Sum	107.1700	86.72000	40.55531	107.4861	67.58000
Sum Sq. Dev.	228.4937	180.6767	38.26834	15.41055	2.159580
Observations	20	20	20	20	20

Figure 2: Descriptive Analysis

Notes: The dependent variable is Housing Price Index. The independent variables are GDP, inflation rate, lending rate, and unemployment rate.

Figure 2 shows the average or mean, median, maximum, minimum, standard deviation, skewness, and kurtosis for the gross domestic product (GDP), lending rate (LR), inflation rate (IR), and unemployment rate (UR). For the dependent variable, the maximum amount for housing price is 13.40000 and a minimum of 1.20000. The gap between the lowest and the highest HPI value is 12.20000. Also, it has a mean of 5.358500. In addition, the standard deviation for the housing price index is 3.467850, and the median for the housing price index is 4.075000. The data skewness for HPI is positive at 0.833979, suggesting that the tail on the right side of the curve is more extensive. The kurtosis for the variable is 2.700874, which means that it is larger than the normal distribution and the tail of the distribution is heavy with a high degree of a peak, known as leptokurtic kurtosis.

Moreover, for the first independent variable, Gross Domestic Product (GDP), the mean for this variable is 4.336000, which tells the average absolute distance of each data point in the set. GDP has the highest median value, 5.310000, compared to the other variables. Besides, the maximum value in the gross domestic product (GDP) data is 7.420000, while the minimum is -5.590000.

The mean for the inflation rate is 2.027765, and this is the lowest value mean among the rest of the variables. The inflation rate also has the lowest median value, 1.917613, compared to the other variables. The most significant figure for the inflation rate reported is 5.440782, while the lowest figure is -1.138702. The range for these two values is 6.579484. The inflation rate recorded 1.419198 as the standard deviation, the square root of variance. For the last independent variable of the unemployment rate, it is recorded that the mean value is 3.379000 while the median value for the data is 3.300000. Furthermore, the standard deviation, which is the square root of variance for the

unemployment rate, is 0.337138, the lowest standard deviation value among other variables. The leading figure in the data for the unemployment rate is 4.500000 while the minimum figure is 2.900000.

Overall, the highest value of the mean is from the lending rate variable, 5.374306, while the lowest value is from the inflation rate, which is 2.027765. In terms of median, GDP recorded the most significant number, 5.310000, and the inflation rate recorded the smallest number, 1.917613. The housing price index has the highest value in the data set, 13.40000, and the lowest value goes to GDP, which is -5.590000. The highest standard deviation is 3.467850 from the housing price index, and the lowest standard deviation is from the unemployment rate, which was recorded at 0.337138.

4.2 Correlation Data Analysis

Covariance Analysis: Ordinary					
Date: 12/13/21 Time: 16:01					
Sample: 2001 2020					
Included observations: 20					
Correlation					
t-Statistic					
Probability					
	HOUSING...	GDP	INFLATION...	LENDING...	UNEMPLOY...
HOUSING_PRICE_...	1.000000				

GDP	0.424360	1.000000			
	1.988315	----			
	0.0822	----			
INFLATION_RATE	0.283502	0.569850	1.000000		
	1.264256	2.942103	----		
	0.2258	0.0087	----		
LENDING_RATE	-0.473405	0.227319	0.231562	1.000000	
	-2.280182	0.950359	1.009882	----	
	0.0350	0.3351	0.3259	----	
UNEMPLOYMENT...	-0.678158	-0.779759	-0.571506	0.017085	1.000000
	-3.914980	-5.284057	-2.954790	0.072496	----
	0.0010	0.0001	0.0085	0.9430	----

Figure 3: Correlation Data Analysis

Notes: The dependent variable is Housing Price Index. The independent variables are GDP, inflation rate, lending rate, and unemployment rate.

Based on figure 3, there is a moderate uphill linear relationship ($r = 0.424360$) between housing price and GDP. For housing price and inflation rate, it indicates a weak uphill linear relationship ($r = 0.283502$). In contrast, the relationship between housing price and lending rate shows a different trend: a moderate downhill linear relationship ($r = -0.473405$). In terms of housing price and unemployment rate, they also offer a moderate downhill linear relationship ($r = -0.678158$) as the value is close to -1. This indicates that all these four-independent variables (GDP, inflation rate, lending rate, unemployment rate) influence the dependent variable (housing price index). In conclusion, the independent variables, which are the lending rate and unemployment rate, have a significant relationship with the housing price index due to its value that is less than the significant level of 0.05. The other variables, GDP and inflation rate, have an insignificant relationship with the housing price index because the p-value is more than 0.05. Furthermore, although the lending and unemployment rates have a significant level, it has a strong negative correlation with the dependent variable, which is the housing price index. On the other hand, although the GDP and inflation rate are insignificant, it has a strong positive correlation with the dependent variable, the housing price index.

4.3 Regression Data Analysis

Dependent Variable: HOUSING_PRICE_INDEX				
Method: Least Squares				
Date: 12/13/21 Time: 16:08				
Sample: 2001 2020				
Included observations: 20				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	37.52088	9.542236	3.932085	0.0013
GDP	0.020390	0.290195	0.070264	0.9449
INFLATION_RATE	0.024680	0.464671	0.053112	0.9583
LENDING_RATE	-1.804990	0.631676	-2.857462	0.0120
UNEMPLOYMENT_RATE	-6.688449	2.686565	-2.489591	0.0250
R-squared	0.673434	Mean dependent var	5.358500	
Adjusted R-squared	0.586350	S.D. dependent var	3.467850	
S.E. of regression	2.230370	Akaike info criterion	4.654530	
Sum squared resid	74.61828	Schwarz criterion	4.903463	
Log likelihood	-41.54530	Hannan-Quinn criter.	4.703125	
F-statistic	7.733127	Durbin-Watson stat	1.045149	
Prob(F-statistic)	0.001370			

Figure 4: Regression Data Analysis

Notes: The dependent variable is Housing Price Index. The independent variables are GDP, inflation rate, lending rate, and unemployment rate.

Regression evaluation is used to evaluate the relationship between two variables and to decide whether independent variables explain the effect of the dependent variable. The result of the regression analysis is shown in Figure 4. When analyzing the econometrics formula, the results obtained can be explained. The value used for the econometric equation is the value of the coefficient, so the econometric procedure is the following:

$$\text{Housing Price Index} = 37.5209 + 0.0204 (\text{GDP}) + 0.02469 (\text{Inflation}) + -1.8050 (\text{Lending}) + -6.6884 (\text{Unemployment})$$

For each one-unit increase in Gross Domestic Product (GDP), the housing price index will increase by 0.0204 units withholding other independent variables constant. Furthermore, for each one-unit increase in the inflation rate, the housing price index will increase by 0.0247 units withholding other independent variables constant. In lending rate, the housing price index will be decreased by 1.8050 units withholding another independent variable constant. For the unemployment rate, the housing price index will be reduced by 6.6884 units withholding another independent variable constant. Analysis F-test is used to test the model's overall validity or to test whether any independent variable (explanatory variables) has a linear relationship with the dependent variable (response variable). According to the table above, the F-statistic is 0.001370. It is significantly based on the p-values, which are below 0.05. Hence, the linear model is overall valid. Furthermore, the R^2 0.6734 indicates the percentage of the variance in the dependent variable explained by the conflict in the independent variables. The R^2 of 67.34% shows that the dependent variable, the housing price index, influences the independent variables: Gross Domestic Product (GDP), Inflation rate, Lending rate, and Unemployment rate. The independent variables cannot explain the remaining 32.66%. This indicates that other independent variables are not included in this study and could further strengthen the regression equation. Moreover, the p-value of the F-statistic is 0.001370, used to test the overall significance of the regression model. Thus, researchers can reject the null hypothesis. On the other hand, the adjusted R^2 is 0.586350, which is smaller than the R^2 . This indicates the variables in the regression model are robust fitting models and can be used to predict the housing price index (HPI).

GDP is the first independent variable. The table shows that the GDP coefficient is 0.020390, 2.039%, which means that inflation shows a positive correlation. The probability value is 0.9449, which is more than the significance level of 0.05. Thus, the null hypothesis should not be rejected since the p-value is insignificant with the dependent variables. The second independent variable is the inflation

rate. Based on the table, the coefficient of inflation value shows 0.024680, which is 2.468 percent. This means that inflation shows a positive correlation while the probability value is 0.9583, which is more than the significance level of 0.05. Thus, the null hypothesis should not be rejected since the p-value is insignificant with the dependent variables.

The third independent variable is the lending rate. Based on the table, the coefficient of lending value shows -1.804990, which is -180.499%. Therefore, it means that the lending rate shows a negative correlation. The probability value is 0.0120, less than the significance level of 0.05. Thus, the null hypothesis should be rejected since the value is significant for the dependent variables.

Lastly, there is the unemployment rate. Based on the table, the coefficient of unemployment is -6.688449. It means that income inequality shows a negative result. In comparison, the probability value is 0.0250, which means less than a significant level of 0.05. Thus, the null hypothesis should be rejected since the value is substantial for the dependent variables.

5. Discussion

In the result of the test carried out in the analysis, it can be concluded that only two of the independent variables are significant: the lending rate (LR) and unemployment rate (UR). In contrast, the gross domestic product (GDP) and inflation rate (IR) are insignificant.

5.1 Research Objective 1

The first independent variable is Gross Domestic Product (GDP). According to our studies, it was discovered that the independent variable, which is GDP has an insignificant relationship with the housing price index. Thus, this research supported study by Pillaiyan (2015) in her analysis by identifying real GDP was not the long-term driver of house prices. The housing price rate reacts conversely to the GDP rate; she justified that there is a real danger that the house prices are in a bubble as GDP was not identified as a driver of long-term house prices. In addition, the study conducted by Trofimov (2018) stated that GDP and housing prices were found to have a non-significant relationship and are not the main determinants of a house price index. Thus, we concluded that GDP has an insignificant relationship with the housing price index. This means that the null hypothesis had to be accepted for the independent variable of GDP, which is:

H_0 : There is no significant relationship between GDP and the house price index in Malaysia,

5.2 Research Objective 2

The study found a significant relationship between the lending rate and the housing price index. It is proven by past research (Ok et al., 2019), which saw a positive correlation between real estate prices and lending rates in developed and developing countries. Besides that, Xu and Tang (2014) examined the determinates of UK house prices and found that the lending rate significantly impacts house prices. In addition, Lee (2009), Shi et al. (2014), and Vries & Boelhouwer (2005) also supported this conclusion and stated that macroeconomic variables such as lending rates have a significant influence on property prices. This is because the lending rate is linked to the cost of the property, making it an essential factor to consider when purchasing a home (Wang & Zhang, 2014). Finally, for our final research, we concluded that the lending rate has a significant relationship with the housing price index. Thus, the objective of identifying the relationship between the lending rate and housing prices was achieved and had to be supported by the hypothesis:

H_1 : There is a significant relationship between the lending rate and the housing price index in Malaysia.

5.3 Research Objective 3

The third independent variable is the inflation rate. This research study shows that the inflation rate has an insignificant relationship with the dependent variable, which is the housing price index. Based on the past research by Hao Guo et al. (2015), these two variables react conversely to each other, showing an insignificant relationship using the theory that rising house prices drive inflation in the short run while rising housing prices can control inflation in the long run. In other words, the influence of

inflation on housing prices is lower than the effect of housing prices on inflation, implying that housing prices can hedge inflation over time (Kuang & Liu, 2015). By this, the objective of identifying the relationship between inflation rate and housing price index was achieved as a result of this research is also in line with and proven by past research, implying that the null hypothesis was supported. The hypothesis for the objective is as follows:

H₀: There is no significant relationship between the inflation rate and the housing price index in.

5.4 Research Objective 4

The study of this research shows that it has a significant relationship between the unemployment rate with housing prices. This finding is consistent with empirical findings from various journal articles, such as Xu & Tang (2014) found a significant link between the unemployment rate and housing prices. The researchers stated, however, that the result is still rational in analyzing the UK property market because UK housing prices and unemployment rates are not associated. Other than that, Karamelikli et al. (2016) also stated that there is a significant relationship between the unemployment rate and housing prices. An increase in the unemployment rate affects the number of potential buyers and thus the demand for property investment. As a result, these signal effects may impact future house price predictions. Thus, the objective of identifying the relationship between the unemployment rate and housing prices was achieved and had to be supported by the hypothesis:

H₁: There is a significant relationship between the unemployment rate and the housing price index in Malaysia.

6. Conclusion

This research study focuses on finding and analyzing additional information on the macroeconomic determinants of housing prices in Malaysia. We can conclude that four major macroeconomic factors affect the housing price index in Malaysia: Gross Domestic Product (GDP), lending rate, inflation rate, and unemployment rate. Our analysis shows an insignificant effect of Gross Domestic Product (GDP) and inflation rate (IR) on the housing price index in Malaysia. Still, it has a positive correlation with the dependent variable. In contrast, the lending rate (LR) and unemployment rate (UR) on Malaysia's housing price index are significant but negatively correlated toward dependent variable. It was revealed that the GDP has an insignificant but positive correlation with the house price index. The research stated that home price rates react opposite to GDP rate, advancing the argument that there is a severe risk that house prices are in a bubble since GDP was not recognized as a driver of long-term house prices. Aside from Gross Domestic Product (GDP), the inflation rate was also identified as an insignificant but positive correlation with the house price index throughout our research. These two variables respond insignificantly to each other, demonstrating an insignificant relationship utilizing the notion that growing home prices fuel inflation in the short term. In contrast, rising house prices can reduce inflation in the long run. In other words, the impact of inflation on house prices is smaller than that of housing prices on inflation, meaning that home prices can hedge inflation over time. These conclude that GDP and inflation rate is not the determinant of the housing price index. Moreover, the other remaining independent variables used in our research which are the lending rate and unemployment rate, show significant and negative correlations simultaneously with the dependent variable. This verified that macroeconomic variable such as lending rate has a substantial impact on property values because the loan rate is related to the cost of the property, making it a significant consideration when acquiring a home. The same scenario goes for the unemployment rate as the fundamental driver that influences the housing price index in the country. Malaysian property costs are far higher today than in past decades.

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Conflict of Interest

There is no conflict of interest associated with this publication.

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PRE-SERVICE SCIENCE TEACHER'S MISCONCEPTIONS OF THE CHEMICAL BONDS

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ABSTRACT

Science teachers in Malaysia could enter the profession via a science education degree programme, or by taking a diploma in education after completing a separate degree in pure science. Misconceptions of key concepts such as chemical bonds are a highlighted issue among pre-service science teachers. The objectives of this study were to: (i) identify the scientific and non-scientific conceptions of chemical bonds held by pre-service science teachers, (ii) identify factors that influence pre-service science teachers' conceptions, and (iii) offer strategies to overcome pre-service science teachers' misconceptions about chemical bonds. A mixed-method research methodology (qualitative and quantitative) i.e., paper-and-pencil test, and open-ended interview was adopted. Thirty respondents consisting of pre-service teachers in Science Education (majoring in Chemistry) from a Faculty of Education in a public university in Malaysia were non-randomly selected based on the purposive sampling technique. Our findings showed a high level of misconceptions that also did not alter significantly through the respondents' four years of training. The correct scientific conceptions about key concepts such as chemical bonds should be comprehensively strengthened among pre-service science teachers before they graduate to ensure that they can deliver the best quality chemistry knowledge to their future students.

1. Introduction

Science is often regarded as one of the more difficult subjects due to the need of understanding numerous concepts (Sirhan, 2007). Teaching science in school should involve a variety of ideas to present scientific concepts. It needs to be simple and understandable for the learners (Nahum, Hofstein, Mamlok & Ziva, 2004). Teachers should have a good understanding of basic scientific concepts in order to deliver a meaningful instruction. Two significant goals in teaching are to assist students' comprehension of the main concepts in a topic instead of memorizing facts (Dunlosky, Rawson, Marsh, Nathan & Willingham, 2013) and to identify any mistakes or misconceptions in learning concepts among the students (Özmen, 2004).

Learning science is a cumulative process, whereby every new information would be incorporated into the prior knowledge regarding the topics (Darling-Hammond, Flook, Cook-Harvey, Barron, & Osher, 2020). This additional new information could possibly contribute to the wrong scientific and non-scientific conceptions, fine-tuned and influenced by the previous knowledge. Griffiths and Preston (1992) stated that the new personal experiences, the media and interactions with people could be sourced from the teachers during discussions or activities in the teaching. Taber and Watts (2000) added that knowledge is personally built by the learners and they would interpret the information in order to make sense of the world. Thus, the learners could possibly construct scientific and non-scientific conceptions about certain topics based on their own interpretations. This self-constructed knowledge or information would then influence the learners' existing knowledge and social context (Gray, Wilcox & Nordstokke, 2017).

Chemistry is one of the significant subsets of science which is considered to be a strenuous and challenging subject for students (Özmen, 2004). Chemical bonds, which indicate the strength of attractions within molecules, is a central topic in the chemistry subject. Chemists are expected to understand the properties of matter and the types of bonds that hold the atoms together (Urbanger & Kometz, 2014). The topic of chemical bonds is also one of the most important topics taught in chemistry for upper secondary school students and is essential for other topics in chemistry (Tsaparlis, Pappa, & Byers, 2020). In order to have a good understanding of chemical bonds, pre-service science teachers need to know about the various models of chemical bonds (Coll, 2008).

The chemical bond models involved in this study are the intra-molecular bonds i.e., (i) ionic, and (ii) covalent bonds. These bonds are the main types of chemical bonds that are being taught in upper secondary school (Coll, 2008). A chemical bond could be defined as the "forces that hold the atoms of element together in a compound" (Sproul, 2001) and as an attractive force between atoms that is strong enough to permit the combined aggregate to function as a unit (Constable & Housecroft, 2020). The forces between particles that arise from the electrostatic force attractions between different charges are labelled as chemical bonds. Due to its difficulty, most of the pre-service science teachers and students have a variety of scientific and non-scientific conceptions regarding this topic (Kenneth, 2020). This situation could lead to the topic becoming burdensome for some teachers (De Jong & Taber, 2007).

The key aspect of learning is conceptual understanding (Khiyarusoleh, Ardiyansyah, & Wilujeng, 2018). Learning would be focused on the 'conceptual change' (Özdemir & Clark, 2007). The pre-service science teachers were introduced to the fundamentals of chemical bonds during their time in high school. Some of them might later struggle to self-construct the interpretation of detailed concepts in chemical bonds, resulting in a wrong understanding that can hinder the accurate conceptualization of scientific concepts (Canpolat, Pınarbaşı, Bayrakçeken & Geban, 2006). These incorrect ideas are known as alternative conceptions, misconceptions, non-scientific conceptions, and pre-conceptions (Goris & Dyrenfurth, 2010). However, the most accepted description is 'alternative ideas' (Mintzes & Wandersee, 2005). This is because the term better describes the experience-based explanations created by learners and also refers to the intellectual respect for the learners who hold those ideas (Burr, Haas, Ferriere & West, 2015).

Major sources of non-scientific conceptions can occur due to the teachers' methodologies and the ways of knowledge presentation in the textbooks. All of the alternative ideas that cause non-scientific conceptions are constructed based on their experiences, expectations, beliefs and emotions (Awan & Khan, 2013). Teachers with a good understanding of chemistry concepts are needed to create an education system that would benefit the students (Childs, Hayes & O'dwyer, 2015). Therefore, having chemistry teachers with a solid understanding of the key concepts of chemistry can prevent the formation of non-scientific conceptions among students (Boo, 2000). It is also important to identify the scientific and non-scientific conceptions in order to deliver the precise conceptual information to the students (Özdemir & Clark, 2007). To address this problem, pre-service science teachers should be trained to have a clear understanding of basic chemistry concepts before they start their teaching career (Sheehan, Childs & Hayes, 2011a).

In this research, we have chosen to focus on the topic of the pre-service science teachers' understanding of chemical bonds. Ideally, they should have a good understanding of this topic since it underpins many other advanced concepts in chemistry (Bergqvist, 2017). This research aims to investigate the factors that influence the pre-service science teachers' non-scientific conceptions and offer the strategies to overcome this issue.

Several studies have pointed out that undergraduate or future-teachers who were having difficulties in understanding the topic of chemical bonds would later face significant challenges when learning advanced chemistry concepts (Barker, 2000; Pabuçcu & Geban, 2012). One study found that the common non-scientific conception among pre-service science teachers was about the equal sharing of the electron pair that occurs in all covalent bonds (Coll & Taylor, 2001). Teachers were unable to define the covalent bonds accurately and were unsure about ionic, covalent, and hydrogen bonds. In another study, most of the pre-service science teachers in a university were also unsure about chemistry topics and numerous science concepts such as chemical bonds (Suat, Coştu, & Alipaşa, 2010). An earlier study by Hein, (1991) found only a small number of teachers who realized that they had been teaching several incorrect concepts to their students. Some teachers were also experiencing difficulties with creating suitable analogies to deliver concepts due to inaccurate comprehension, which could lead to non-scientific conceptions among students (Inel-Ekici & Ekici, 2021). Hence, the aims of this study are to: (i) identify the scientific and non-scientific conceptions of chemical bonds that are held by pre-service science teachers, (ii) identify factors that influence the pre-service science teachers' conceptions, and (iii) offer strategies to overcome pre-service science teachers' misconceptions about chemical bonds.

2. Methodology

The research is divided into sub-sections as follows:

2.1 Participants

The study was conducted among 30 respondents consisting of pre-service teachers in Science Education (majoring in Chemistry) from the Faculty of Education in a public university in Malaysia. The respondents were selected non-randomly using the purposive sampling technique.

2.2 Research Instruments

For the investigation and data collection, a mixed-method of both qualitative and quantitative research methodology was used to extensively document the real situation in the context of pre-

service science teachers' knowledge and understanding of chemical bonds, and to quantify data and generalize results from the sample of population, respectively (Figure 1). Two instruments were utilized in this current work to collect the necessary information which were: (i) paper-and-pencil test on the concepts of chemical bonds, and (ii) focus group interviews. The instruments were constructed and validated based on the literature (Kemmis & Wilkinson, 1998). The adopted test questions were adapted from the literature (Chudowsky & Pellegrino, 2003; Verger, Parcerisa & Fontdevila, 2019) and consisted of 18 items (5 objective and 13 subjective questions) to examine the pre-service science teachers' understanding of the fundamental concepts of chemical bonds. The duration of the test was limited to 30 minutes. Interview sessions with open-ended questions were then carried out after the paper-and-pencil test to investigate the respondents' individual thoughts regarding scientific and non-scientific concepts, and strategies to overcome non-scientific concepts about chemical bonds among pre-service science teachers.

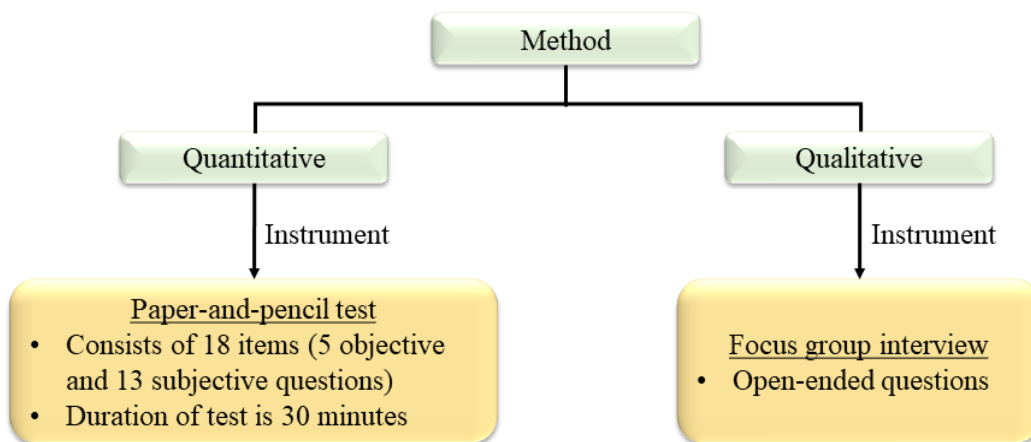


Figure 1. Summary of The Research Methodology Used

2.3 Data Analysis

The data were collected and analyzed using quantitative and qualitative analyses. The collected data from the paper-and-pencil test was analyzed using descriptive statistics. Then, the respondents who got low marks in the paper-and-pencil test were selected to be interviewed with open-ended questions. The demographic background was in section A i.e., gender. The data are presented in the form of a pie chart. For section B, the number and percentage of pre-service science teachers who responded to each question were calculated and analyzed in the chart. All responses were tabulated and categorized into their specific themes based on the number of respondents with the specific responses. The data obtained are then further discussed in the next section. Categories of diagnostic test responses were assigned based on the level of understanding of respondents. An analysis scheme was adopted from Unal et. al (2002) which consisted of 5 categories as shown in Table 1:

Table 1
Criteria of Classification Concept

Conception	Description
Sound understanding	Responses that include all correct and logical answers of all components.
Partial understanding	Responses that include at least one correct and logical answer without any misconception occurring.
Partial understanding with specific misunderstanding	Responses that show partial understanding and contain misconceptions.
Specific misconception, no understanding	Responses that include incorrect or illogical answers.
No understanding	Responses include irrelevant ideas and no answers.

3. Results

3.1 **Pre-service Science Teachers' Understanding of the Non-scientific Concept of Chemical Bonds**

This study was carried out to identify the scientific and non-scientific conceptions of chemical bonds among the pre-service science teachers. Based on the diagnostic test, most of pre-service science teachers only have a partial understanding of the chemical bond topic. It showed that pre-service science teachers had specific misconceptions about a few fundamental concepts i.e., (i) definition (items 6, 8 & 9), (ii) bonding (items 1 & 2), (iii) lattice (items 3 & 4), (iv) formation of chemical bonds (items 11, 13 & 17), and (v) types of chemical bonds (item 18).

3.2 **Definition (items 6, 8 & 9)**

Based on the paper-and-pencil test results, it was found that 13 of the pre-service science teachers were unable to define several scientific terms correctly. Examples of misconceptions in the definition of chemical bonds among the pre-service science teachers are shown below:

Answers from respondents	Respondents
Attractions between atoms that allow the formation of chemical substance that contain two or more atoms.	1
The force that hold atoms together within molecules.	2
Any rearrangement of electron in two atoms that generate force, causing the atom to bond.	5
The bonding that allow elements together to form new properties.	8
Chemical bond is the relationship with two or more atom with a chemical mean in order to form a compound.	9
(no answer).	10
Elements are sharing or transfer electron to form ionic and covalent bond.	11
Bond that used to tie or to fasten molecules together so that atom in the molecule achieves stable octet/duplet electron arrangement.	13
Chemical bond is a formation of bond when two or more atom bond together.	14
Chemical bond is a bond that hold the atom.	17
Form a achieve stable electron either sharing or transfer electron.	21
Sharing or transfer electron to achieve stable octet electron arrangement.	26
Bonding between two or more element to become stable.	27

These non-scientific ideas showed that the pre-service science teachers have difficulties in writing the accurate definition of chemical bonds. Pre-service science teachers who have a low confidence level in defining the actual understanding of the physical meaning of the terms, will encounter problems in describing the correct concept (Lloyd, Braund, Crebbin & Phipps, 2000). It appears that pre-service science teachers were experiencing confusion to differentiate between the term 'bond' and 'bonding' that should be used in explaining the definition of chemical bonds. This finding is supported by Boo (2000) who carried out interview sessions with trainee teachers and found that most of them have a lack of knowledge pertaining to the differences between the term 'bond' and 'bonding' (Boo, 2000). In the present study, 15 of the respondents were also unable to define both ionic and covalent compounds correctly in items 8 and 9. Examples of the non-scientific conceptions are shown below:

Answers from respondents	Respondents
<i>Ionic compound: compound formed through the formation of ionic bond.</i>	1
<i>Covalent compound: compound form through covalent bonding</i>	
<i>Ionic compound: compound that contain only ionic bond.</i>	2
<i>Covalent compound: compound that contain only covalent bonds</i>	
<i>Ionic compound: No answer</i>	4
<i>Covalent compound: No answer</i>	
<i>Ionic compound: compound that contain both metallic and non-metallic compounds.</i>	6
<i>Covalent compound: compound that contain both non-metallic compounds</i>	
<i>Ionic compound: compound that form between metal atom and non-metal atom (transfer electron).</i>	7
<i>Covalent compound: Compound that form between metal and non-metal.</i>	
<i>Ionic compound: metal and non-metal.</i>	8
<i>Covalent compound: non-metal and non-metal</i>	
<i>Ionic compound: set of metal and non-metal that combine chemically by electrostatic force.</i>	9
<i>Covalent compound: sharing electron of non-metal with non-metal</i>	
<i>Ionic compound: transfer electron to form metal to non-metal.</i>	10
<i>Covalent compound: sharing electron of non-metal with non-metal.</i>	
<i>Ionic compound: element transfer electron to form stable molecule.</i>	11
<i>Covalent compound: element sharing electron to form stable molecule.</i>	
<i>Ionic compound: compound that contains metal atom and non-metal and contains ionic bond.</i>	14
<i>Covalent compound: compound that contain non-metal atom and metal and contain covalent bond.</i>	
<i>Ionic compound: combination of positive ion and negative ion.</i>	16
<i>Covalent compound: compound that are hot soluble in water but soluble in organic solvent.</i>	
<i>Ionic compound: combination of 2 ionic bond.</i>	18
<i>Covalent compound: combination of 2 covalent bond.</i>	
<i>Ionic compound: compound which consists of 2 ions chemically, bonded by ionic bond and by donating or receiving electron.</i>	28
<i>Covalent compound: compound that consist of two atoms that chemically bonded together by covalent bond and by share electron</i>	
<i>Ionic compound: chemical compound in which ions are held together in a structure by electrostatic force terms ionic bonds.</i>	29
<i>Covalent compound is a chemical bond that involves the sharing of electron pairs between atoms.</i>	

Ionic compound: chemical compound which ion are attach together to form ionic bond. 30

Covalent compound: non-metal molecule that hold together to form a covalent compound.

Unal, et al., (2002) suggested that a possible reason for this non-scientific conception is that students were unable to distinguish between ionic and covalent bonds with that of the ionic and covalent molecules due to a weak memorization skill (Ünal et al., 2002).

3.3 Bonding (items 1 and 2)

The pre-service science teachers had various misconceptions regarding the chemical bonding in the atom. One example of the misconceptions which has been indoctrinated among the pre-service science teachers included that sodium chloride (NaCl) exists as a molecule when the sodium atom donates its valence electron to the chlorine atom (item 1). The main factor that causes the respondents to accept the molecular framework is the way ionic bonding is presented (Vladušić, Bucat & Ožić, 2016). The 15 respondents demonstrated the topic of ionic bonding by drawing the transfer of an electron from the sodium atom to the chlorine atom, which then eventually forms positive and negative ions. They also believed that a pair of ions would be attracted by a strong electrostatic force. The drawn figure of a discrete unit of sodium chloride could lead to their future students deducing an incorrect understanding towards ionic bonding, in which they thought that both atoms formed the molecules of the ionic compound (Taber, Tsaparis & Nakiboğlu, 2012). Moreover, 5 of the pre-service science teachers also showed non-scientific conceptions in item 2 due to a non-thorough understanding of the octet rule in ionic bonding as shown in the examples below:

Answers from respondents	Respondents
By sharing and transferring electron.	6
Transferring and sharing electron.	7
By the electrostatic arrangement.	10
Transferring or sharing electron.	11
transfer: Van Der Walls forces	
Sharing electron: electrostatic force.	
Based on electrostatic attraction.	14
Held by strong electrostatic force.	15
It is either to share electro or to donate electron and also to accept electron.	17
By strong electrostatic force.	22
By donating or sharing of electrons.	23
Ionic bond: strong electrostatic forces.	20
Covalent bond: weak intermolecular forces.	
Through the electrostatic force and Van Der wall s forces.	24
By strong electrostatic force.	26
By sharing electron or donating or receiving electron.	28
By one of these two methods which are electron transfer ad electron sharing.	29
By sharing and donate electron to achieve stability.	30

Nevertheless, 9 of the respondents managed to accurately explain that both the metal and the non-metal ions had stable octets of electrons, though they showed a lack of knowledge in the ratio of the metal and non-metal ions (Taber et al., 2012).

3.4 Lattice (items 3 & 4)

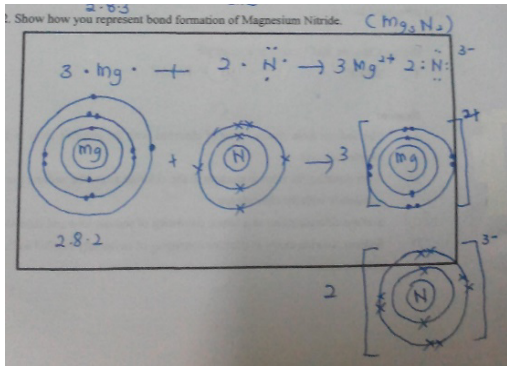
The third part of the paper-and-pencil test was related to the lattice, in which the pre-service science teachers showed various misconceptions related to lattices. It appears that 15 of the respondents were puzzled regarding the nature of the continuous covalent and molecular lattice. A similar finding was reported by Coll and Treagust (2003), who found that their respondents described the continuous covalent lattices and ionic lattices as having molecular properties. In our study, the respondents believed that the term 'simple' is equivalent to 'uncomplicated', which is an example of a non-scientific conception (Coll & Treagust, 2003). Vladušić, et al., (2016) explained that many educators tend to believe that macromolecules are big molecules, while simple molecular lattices are made up of only 2-4 atoms (Vladušić et al., 2016). Meanwhile, giant covalent lattice consists of a three-dimensional lattice of covalently bonded atoms. These atoms could be all of the same types, such as silicon atoms (silicon dioxide) and carbons (diamond and graphite) (Collins & Avouris, 2000). The non-scientific conception was indoctrinated due to the overgeneralization based on past university lessons regarding silicon, graphite and diamond that led the respondents to think that all covalently bonded atoms would form macromolecules.

3.5 Formation of Chemical Bonds (item 11)

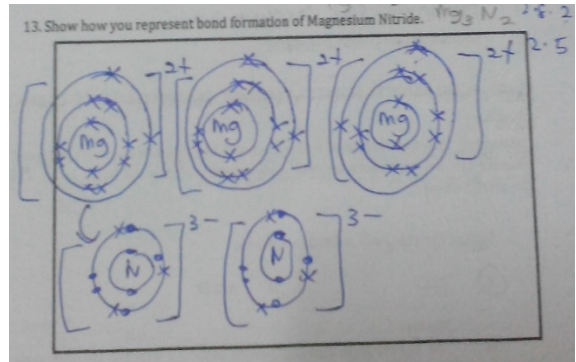
Fifteen pre-service science teachers had various non-scientific conceptions of how ionic and covalent bonds are formed. The most common non-scientific conceptions included "by the electrostatic arrangement" and "by sharing and transferring electron." in their explanations for item 11. It is hypothesized that the pre-service science teachers were indoctrinated with the non-scientific conceptions that the ionic bond is formed by "transferring using Van Der Waals forces or covalent bond is sharing electron using electrostatic force". These misconceptions probably arose due to a partial understanding about the types or properties of atoms that would form covalent and ionic bonds. Another study reported a similar finding, in which students thought covalent bonding was formed through electron transfer due to the unclear explanation from the teachers (Suat et al., 2010). The non-scientific conceptions were inculcated among the pre-service science teachers due to a poor understanding pertaining to the sub-microscopic level. According to Peterson et al. (1989), students could predict correctly the characteristics of atom formation in covalent bonding and how a chemical bond was formed between atoms only if they are able to visualize the atoms (Peterson, Treagust & Garnett, 1989).

3.6 Types of Chemical Bonds (items 13, 17 & 18)

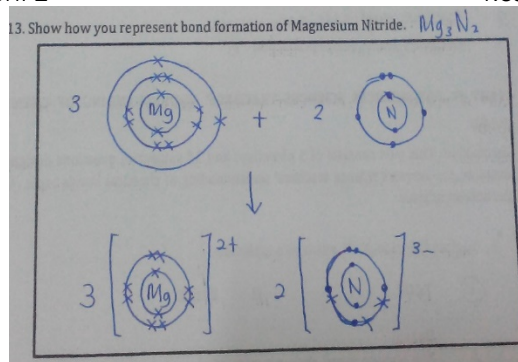
Item 13 was designed to investigate pre-service science teachers' understanding about the formation of magnesium nitride (Mg_3N_2). They should be able to deduce the chemical formula for the formation of Mg_3N_2 and the correct type of chemical bond present. An accurate answer given by 3 of the pre-service science teachers was classified as "sound understanding" which means they could respond correctly and logically by writing the chemical formula, determine that the Mg_3N_2 possesses ionic bonds, and draw the correct formation of Mg_3N_2 . The "sound understanding" answers are as follows:



Respondent 2

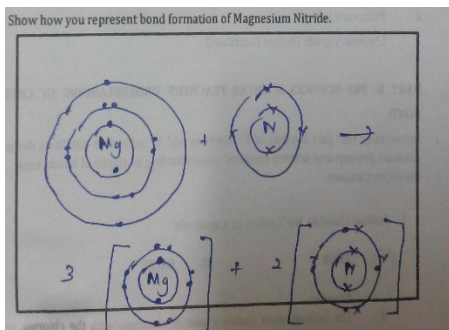


Respondent 19

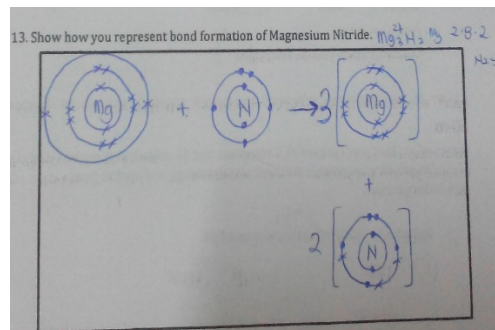


Respondent 23

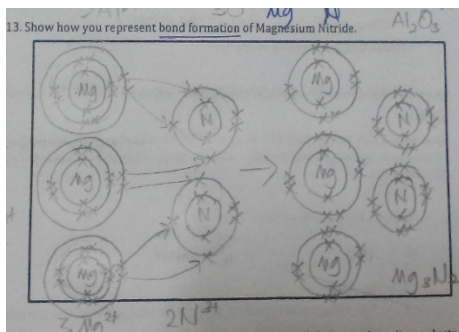
Meanwhile, a “*partial understanding*” response was classified as having correct but incomplete answers, where 3 of the respondents were able to write chemical formula and draw the formation of Mg_3N_2 , though they missed some information in the drawing, such as the ionic charge in the formation of the product. Examples of answers for this category are as follows:



Respondent 1

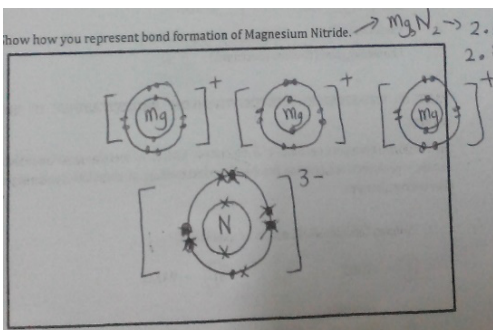


Respondent 15

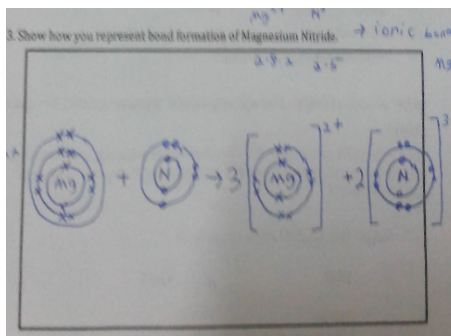


Respondent 17

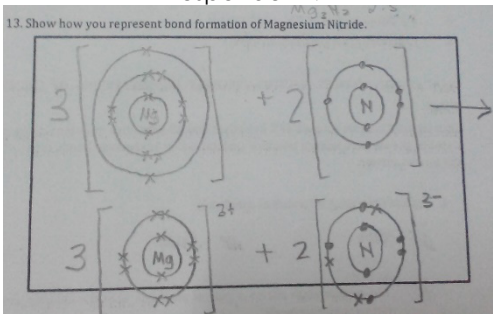
Four responses classified as having “*partial understanding with specific misunderstanding*” were due to ability to determine the chemical formula, and to draw the formation of Mg_3N_2 , though they provided some incorrect conception in the drawing including coefficient or ionic charge of each product formed. Examples of answers for this category are as follows:



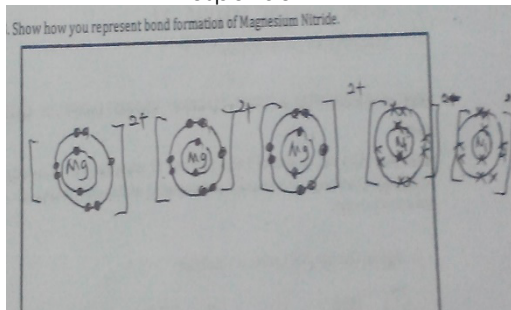
Respondent 9



Respondent 14

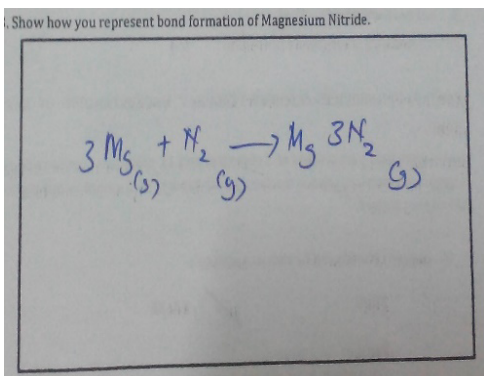


Respondent 24

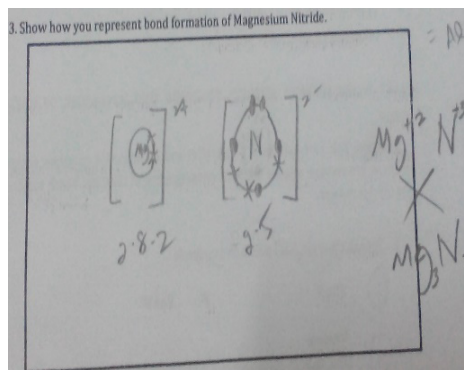


Respondent 4

Responses classified as having “*specific misconception, no understanding*” were due to poorly answered questions on the instrument and non-logical formation of Mg_3N_2 . In this category, 2 of the respondents showed an incorrect chemical formula and drawing of Mg_3N_2 . Examples of answers for this category are as follows:

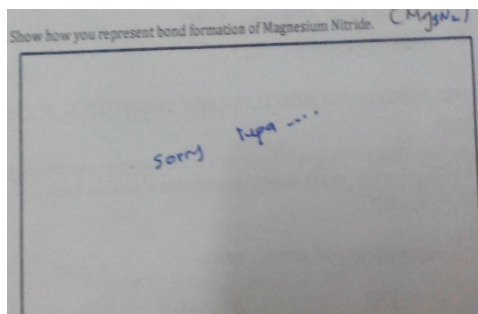


Respondent 5

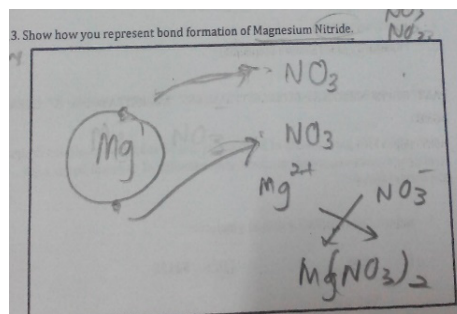


Respondent 27

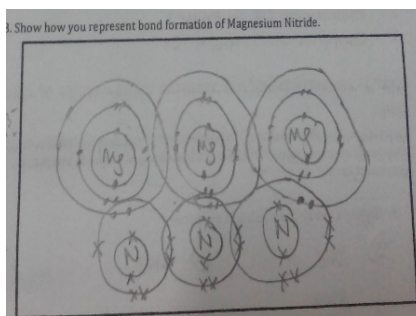
In responses classified as having “no understanding” the respondents were unable to draw Mg₃N₂ or the most poorly answered of all questions in the instrument. Three of the respondents were unable to state the correct chemical formula due to not knowing the type of bonds present in Mg₃N₂. Examples of answers for this category are as follows:



Respondent 6



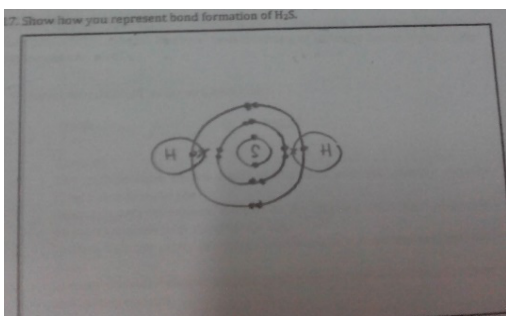
Respondent 25



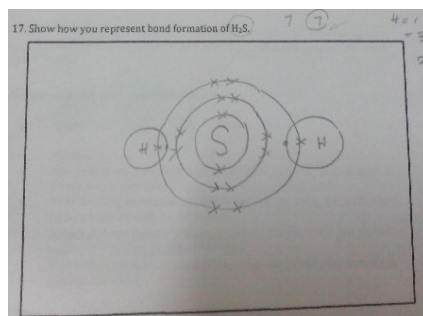
Respondent 28

Item 17 investigates the pre-service science teachers' understanding of the formation of hydrogen sulphide (H₂S). They should be able to state the chemical formula for the formation of H₂S, and the correct type of chemical bond present. The responses could be classified as having a “sound understanding” if they gave accurate and logical answers by being able to write the chemical

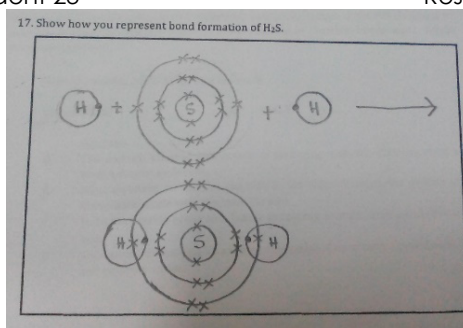
formula, determine H₂S as having covalent bonds, and draw the correct formation of H₂S. Examples of answers for this category are as follows:



Respondent 23

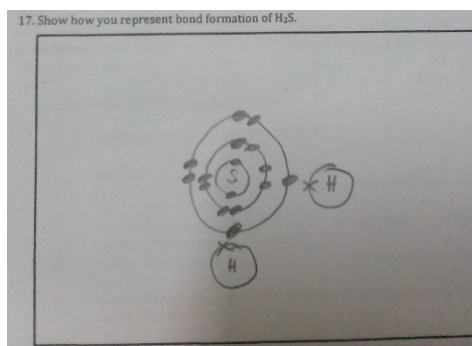


Respondent 21



Respondent 24

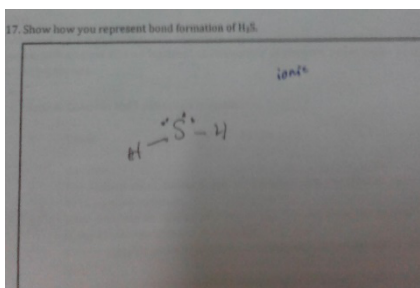
Responses classified as having a “*partial understanding*” showed correct but incomplete answers. The respondents were able to draw the formation of H₂S correctly, however they missed some information in the drawing, such as an incomplete drawing of H₂S. An example response for this category is as follows:



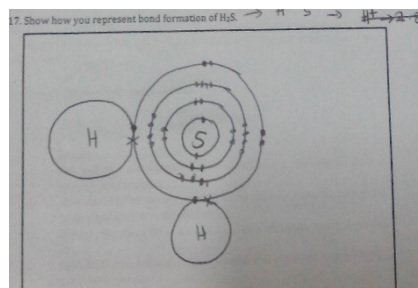
Respondent 18

Meanwhile, in responses classified as having a “*partial understanding with specific misunderstanding*”, the respondents showed the ability to draw the H₂S, though they stated misconceptions due to the omission of important points, such as the correct electron configuration

or they used the same symbol after the valence electron was shared. Examples of responses for this category are as follows:

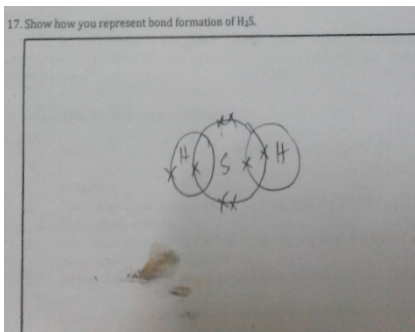


Respondent 6

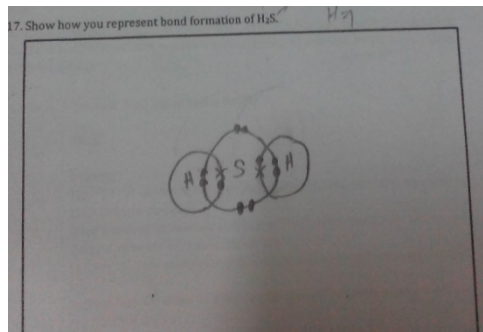


Respondent 9

Responses classified as having a “specific misconception, no understanding” showed the respondents were unable to provide the correct and logical formation of H₂S, such as giving the incorrect electron configuration for each atom or an incorrect drawing of H₂S. Examples of responses for this category are as follows:

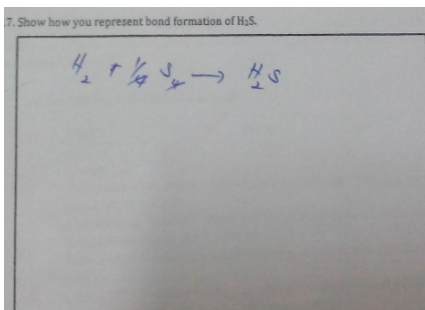


Respondent 19

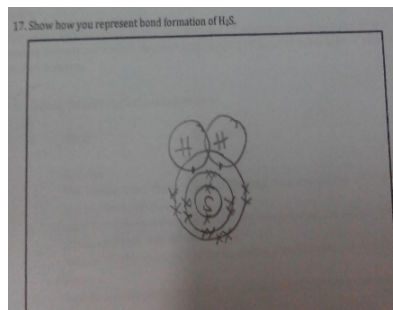


Respondent 27

Responses classified as “no understanding” showed the respondents' inability to draw H₂S or giving no answer at all. Some of the respondents were unable to state the correct chemical formula of H₂S due not being able to determine whether the formation of H₂S was based on the ionic or covalent bond. Examples of responses in this category are as follows:



Respondent 5



Respondent 27

Item 18 showed the pre-service science teachers' understanding about the classification of molecules according to whether they had ionic bonds or covalent bonds. It was found that half of the pre-service science teachers were unable to classify molecules according to the correct type of bonds, while others were unable to explain clearly about the concept of ionic and covalent bonds.

The respondents were classified as having a "sound understanding" if they were able to answer correctly or logically, and able to elaborate on why the molecule had ionic or covalent bonds. Examples of responses in this category are as follows:

Respondent 24	C ₂ H ₂ : Covalent Bond (Triple Bond) H-C ≡ C-H	Reason: electron arrangement (C=2,4, H=1) C atom will share 3 pair of the valence electron with another C atom and another 1 valence electron with H atom.
Respondent 15	C ₂ H ₂ : Covalent Bond	Reason: C= 2,4, H=1 Sharing between 2 C atom & 2 H atom. Form triple bond between C and C Form single bond between C and H.

The respondents were classified as having a "partial understanding" due to the ability to provide correct but incomplete answers. They were also able to elaborate about the formation of ionic or covalent bonds. Examples of responses in this category are as follows:

Respondent 17	C ₂ H ₂ : Covalent Bond	Reason: C has 4 valence electrons. It will share electron with H as H has 1 valence electron.
Respondent 25	C ₂ H ₂ : Covalent Bond	Reason: Non-metal + non-metal (carbon + hydrogen). Sharing electron.
Respondent 3	C ₂ H ₂ : Covalent Bond	Reason: Sharing electron between C and H atom

The respondents were classified as having a "partial understanding with specific misunderstanding" due to the ability to classify whether the element had ionic or covalent bonds, though with an incorrect reason. An inaccurate scientific term was also used in explaining the formation of ionic or covalent bonds. Examples of responses in this category are as follows:

Respondent 9	C ₂ H ₂ : Covalent Bond	Reason: Sharing pair of electrons between two C atoms and two H atoms. Double covalent bond
Respondent 11	C ₂ H ₂ : Covalent Bond	Reason: Non-metal and non-metal

		Sharing electron (two electrons). 2 valence electrons for C2 and H2 for each element
Respondent 13	C ₂ H ₂ : Covalent Bond	Reason: C has 4 valence electrons. H has 1 valence electron. 1 C share 4 valence electron with 4 H Single bond

The respondents were classified as having “no understanding” due to not being able to correctly classify the type of bond present in the molecules. No relevant explanation was elaborated to strengthen the answers. Examples of responses in this category are as follows:

Respondent 21	C ₂ H ₂ : ionic bond	Reason: Transferring
Respondent 19	C ₂ H ₂ : ionic bond	Reason: Transfer
Respondent 18	C ₂ H ₂ : ionic bond	Reason: C is metal and H is non-metal (transfer)
Respondent 7	C ₂ H ₂ : ionic bond	Reason: H transfer valence electron to C
Respondent 4	C ₂ H ₂ : ionic bond	Reason: Transferring

The respondents were classified as having a “sound understanding” due to closely correct response or logical answer provided. Nevertheless, they were able to explain the molecules were identified as having ionic or covalent bonds based on their prior knowledge. Examples of responses in this category are as follows:

Respondent 2	MgCl ₂ : Ionic Bond	Reason: Magnesium atom has 2 valence electrons. Magnesium atom donating one electron to one Cl atom and another one valence electron to another Cl atom.
Respondent 11	MgCl ₂ : ionic bond	Reason: Mg contains 2 valence electrons. 2Cl need 2 valence electrons from magnesium.
Respondent 13	MgCl ₂ : ionic bond	Reason: Mg has 2 valence electrons. Cl has 7 valence electrons. 1 Mg need to transfer 2 valence electrons with 2 Cl atom.

The respondents were classified as having a “partial understanding” due to only giving incomplete correct answers, but with the ability to distinguish the ionic or covalent bond. It was found out that they were able to list more than one reason regarding the ionic bond or covalent bond. Examples of responses in this category are as follows:

Respondent 27	MgCl ₂ : Ionic bond	Reason: Because they transferring electrons.
Respondent 25	MgCl ₂ : Ionic Bond	Reason: Metal + Non metal (Mg + Cl) Transferring electron.
Respondent 29	MgCl ₂ : Ionic Bond	Reason: Formed when metal react with non-metal.

The respondents were classified as having a “*partial understanding with specific misunderstanding*” due to being able to correctly classify the type of bond present in the MgCl₂, but using incorrect reasons to identify the ionic or covalent bond. The formation of chemical bonds was explained using incorrect scientific terms. Examples of responses in this category are as follows:

Respondent 20	MgCl ₂ : Ionic bond	Reason: Mg transfers 2 ions to Cl. Each Cl receive 1 ion Metal + non-metal
Respondent 30	MgCl ₂ : Ionic Bond	Reason: Mg ionic compound and Cl halogen

The respondents were classified as having “*no understanding*” due to the inability to correctly classify type of bond present in MgCl₂. Also, no relevant explanations were given. Examples of responses in this category are as follows:

Respondent 27	MgCl ₂ : covalent bond	Reason: Sharing electron
Respondent 19	MgCl ₂ : covalent bond	Reason: Sharing

Item 18(iii) investigated the pre-service science teachers' understanding of the type of chemical bond present in the N₂ molecule with a detailed explanation. Two respondents were found to have a “*sound understanding*” due to their ability to respond correct and logic in explaining whether the type of chemical bond in the molecule was ionic or a covalent bond. The stated answers are as follows:

Respondent 2	N ₂ : Covalent Bond :N ≡ N:	Reason: triple bond two atoms share three pairs of electrons as in nitrogen molecule
Respondent 9	N ₂ : Covalent Bond	Reason: sharing of electron between N atoms triple covalent bond

Respondents with a “*partial understanding*” were able to provide incomplete correct answers, classify N₂ with the correct type of bond, and list more than one explanation pertaining to the formation of the ionic or covalent bond. The responses for this category are as follows:

Respondent 3	N ₂ : Covalent Bond	Reason: Share three pairs of electrons
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Respondent 8	N ₂ : Covalent Bond	Reason: Non-metal with non-metal N is non-metal Sharing electron
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Respondents with a “*partial understanding with specific misunderstanding*” were able to classify N₂ into the correct type of bond, but with an incorrect reason. They pointed out the incorrect scientific terms in explaining the formation of the ionic or covalent bond. The responses are as follows:

Respondent 20	N ₂ : Covalent Bond	Reason: Weak Van Der Waals between N ₂
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Respondents with a “*specific misconception, no understanding*” were unable to provide the correct and logical definition of the type of bond present in N₂. In this study, they provided the right classification of covalent bond, though, non-scientific conceptions were given. The responses are as follows:

Respondent 11	N ₂ : Covalent Bond	Reason: N contain 1 valence electron Sharing electron
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Respondents with “*no understanding*” were unable to classify whether N₂ had ionic or covalent bonds. No relevant explanation was included in the response. Examples of responses for this category are as follows:

Respondent 5	N ₂ : Covalent Bond	Reason: Not stated
Respondent 30	N ₂ : Covalent Bond	Reason: Not stated

Overall, it was found that the respondents showed misconceptions in drawing the formation of the ionic or covalent bonds in items 13 and 17. Thus, some of the pre-service science teachers demonstrated an inability to understand the concept of formation of chemical bonds. In contrast, drawing the diagram supposedly should be correctly performed by the respondents as educators. This is because the learning process would be highly effective by drawing the diagram based on a person’s comprehension due to reduction of comprehension errors (Butcher, 2006). The visual learning would be the most effective way to support cognitive process. In this study, the respondents were asked to draw Mg₃N₂ for item 13 and H₂S for item 17. Therefore, prior knowledge on how to differentiate the type of bonds present in the molecule is needed. The respondents showed a weak understanding of the scientific concept of chemical bonds based on the responses for the C₂H₂ molecule in item 18(i):

- “...Sharing pair of electrons between two C atoms and two H atoms...” (Respondent 9)
- “...Double covalent bond...” (Respondent 11)
- “...C has 4 valence electron. H has 1 valence electron...”

"...1 C shares 4 valence electron with 4 H..."

(Respondent 14)

"...Single bond..."

(Respondent 21)

(Respondent 27)

The C_2H_2 molecule contains triple bonds between two carbon atoms and all valence electrons are involved in the bonding, but some respondents were not sure of the type of covalent bond present and were ambiguous in their explanation on this matter. This indicates that they only have a partial understanding of the double and triple bonds (Treagust, 2012). The misconception of types of chemical bonds may occur due to a lack of knowledge about the concept of electronegativity and confusion of the terms "polar" and "nonpolar" among the respondents. Therefore, they were unable to relate between the terms and types of covalent bonds (Suat et al., 2010). Furthermore, they were unable to differentiate between ionic and covalent bonds in item 18(ii) based on the response:

"... $MgCl_2$ is a covalent bond and it involves sharing of electron..."

(Respondent 29)

This suggests that the respondents were unable to differentiate between ionic and covalent bonding. This was supported by Uce (2015) who reported that students were unable to differentiate between covalent and ionic bonds of a compound (Uce, 2015). The misconceptions found in the pre-service science teachers taking part in our study are likely to have persisted from their early study in secondary school if not possibly from their primary education (McCormack, 2009). Misconceptions are known to interfere with new learning (Sheehan, Childs, & Hayes, 2011b; Tarchi, Brante, Jokar, & Manzari, 2022). Therefore, the Malaysian education system is producing learners with high numbers of misconceptions and low conceptual understanding of chemical bonds in chemistry. Several possible factors of non-scientific conceptions that could induce the misconceptions about chemical bonds will be discussed in the next section.

3.7 Factors of Non-Scientific Conceptions of Chemical Bonds Among Pre-service Science Teachers

The first factor that influence the pre-service science teachers' conceptions is book and reference. The feedback obtained from respondents 9, 10, and 27 were as follows:

"...I always refer 2- or 3-times reference book per day to study chemistry. Most of the times, I will choose 2 to 3 books reference books. I believe that reference book has a lot of information compared to text book but the problems in reference book are I have difficulty in understanding certain scientific term and make me confuse about the concept. But I believe all the reference book or text book will explain right concept and give good yet simple example for me to refer during learn chemistry..."

(Respondent 9)

"...I prefer using textbook because textbook follow syllabus and give easy and simple example. For reference, I prefer local book compare to international book because easy to understand. But sometimes reference book are difficult to understand because too much long explanation. There are also contain difficult scientific term that I have never heard before. There has a reference book that I use before have different explanation with textbook and I am not sure which one should be followed..."

(Respondent 10)

"...I prefer reference book when learning chemistry. But reference book is quite complicated because of the language uses in English make me difficult to understand. A few scientific terms are difficult to understand because of the language uses. The explanation is too long and not direct. I can draw chemical bonding only if I have ever seen in the books but others than that, I can't..."

(Respondent 27)

The second factor that was obtained was the use of chemistry websites or internet. The feedbacks obtained from respondents 14, 21, and 27 are as follows:

"...Sometimes I refer to any chemistry website if I confuse the explanation from reference book and also find a various of chemical bonding example from internet because in internet contain more difficult example to be discuss..."

(Respondent 14)

"...I always refer note from internet. For me, it is more easy compare to books because I need to read one by one but when using internet, I can find simple note that summarize the whole topic..."

(Respondent 21)

"...sometimes I used internet to find simple mind map in any chemistry blog. I believe it is prepared by experience teacher so that I can use it in my learning process. I also can share it with my friends and students. Moreover, it is easy to understand because already summarize it one topic into one mind map..."

(Respondent 27)

The third factor that influence the pre-service science teachers' conceptions is teacher explanation. The feedbacks obtained from respondents 10, 14, 15, and 27 are as follows:

"...sometimes, I don't understand the explanation from the teachers because I do not know which point, she/he said is important. Moreover, my teacher only used chalk and talk method and I cannot visualize what she/he explained about the concept..."

(Respondent 10)

"...Chemistry is difficult because what had been come out in examination were not same what had been taught in class. Teacher explanation sometimes was different and too simple but in examination come out more difficult question. Teacher always used explanation inside the text book because they do not have more time to find others explanation yet the explanation from text book are simplest..."

(Respondent 14)

"...I believe explanation from my lecturer or my previous chemistry teacher is important but sometimes my lecturer and teacher tend to explain in a simple explanation but they don't explain more due to time consuming..."

(Respondent 15)

"...during my schooldays, sometimes I confuse what have been said by my teacher because explanation from my school teacher was different with my tuition teacher. They are both using

different ways in explaining the concept and I don't know which one should be follow. Teacher always used chalk and talk method so it's quiet boring in a class..."

(Respondent 27)

3.7.1 The Influence of Text Books

The analysis from the interview revealed that there were three main factors which contributed to the pre-service science teachers' non-scientific conceptions i.e., (i) text books or reference books, (ii) the internet, and (iii) educator's explanations. Most of the respondents agreed that their misconceptions were influenced by reference or text books. This was supported by Nooteboom (2006) and Segesten (2011) which stated that the source of misconceptions would be inculcated from the textbooks (Nooteboom, 2006; Segesten, 2011). This could be due to a poor "treatment of the topic" of ionic bonds, in which many textbooks only provided illustrations with a small number of atoms or molecules and with unclear explanations on the crystal lattice formation.

3.7.2 The Internet

The internet would contribute to misconceptions due to the accessibility of uploading information from the uncertified educators (Fausto et al., 2012). The use of the internet in education has become the first-choice option for students (Acar Sesen & Ince, 2010). Although surfing the internet would allow instant access to information, its reliability is questionable. Incorrect information could lead to the misconceptions related to the topic of chemical bonds or other science concepts.

3.7.3 Educator's Explanations

Educators would be the key source for pre-service science teachers to gain knowledge about chemical bonds. An incorrect concept or incomplete teaching explanation would lead to misconceptions (Chi, 2009). Students who gained prior knowledge about chemical bonds since secondary school, tend to resist modifying their pre-existing ideas in future. The new knowledge would be self-interpreted using their lack of pre-knowledge (lonas, Cernusca, & Collier, 2012). Besides, the way educators teach their lessons about chemical bonds would contribute to an unclear understanding of scientific or non-scientific conceptions among students (Fatokun, 2016). Educators should be highly knowledgeable to promote a detailed discussion about abstract concepts in class and provide opportunities for students to ask questions and share their opinions. This practice would increase students' chances to promote their own ideas and remediate their existing misconceptions (Halim, Finkenstaedt-Quinn, Olsen, Gere, & Shultz, 2018).

3.8 Strategies to Overcome Non-Scientific Conceptions of Chemical Bonds Among Pre-Service Science Teachers

The first strategy to overcome non-scientific conceptions of chemical bonds among pre-service science teachers is make mind-map or own notes. The feedbacks obtained from respondents 9, 14, and 27 are as follows:

"...In order to overcome my non-scientific conception, I think I should do my own map or note so that I can understand well. In order to do that, I think I have to read more than 4 books so that I can compare contain inside the books..."

(Respondent 9)

"...if I have misunderstanding in chemical bonding, I always refer more books than usual. Then, I'll make my own note follow my own understanding. I also will refer science dictionary to find meaning for scientific term..."

(Respondent 14)

"...I will use simple word to make me understand the explanation from books. I will use more than 2 books because I believe to have better understanding, I should create my own words to understand the difficult concept. Then, I will make exercise or past year questions to test my understanding..."

(Respondent 27)

The second strategy to overcome non-scientific conceptions of chemical bonds among pre-service science teachers is using an interactive web-based program to learn chemistry. The feedbacks obtained from respondents 14, 21, and 27 as follows:

"...I think there are so many interactive chemistries online website that helps in learning chemistry. I rarely look into it but I know some of the interesting chemistry website such as ChemBalancer and ChemCollective that I have always used during my teaching practicum. It just not helps me to understand the lesson but also help my students ..."

(Respondent 14)

"...I think using interactive chemistry website can help gain more understanding because it is more interesting and we can visualize it..."

(Respondent 27)

"...I have tried one interactive website for chemistry. Inside it contain explanation, games and experiment. I can try it and can see the colour changes in experiment. Its help me but I cannot use it every day because of time constrain..."

(Respondent 21)

Third strategy to overcome non-scientific conceptions of chemical bonds among pre-service science teachers is by using teaching aid or model. The feedbacks obtained from respondents 9, 10, 14, and 27 are as follows:

"...I think used model can also help me in understanding chemical bonding because people can see clearly by using model..."

(Respondent 9)

"... Teaching aid helps me to visualize more and I can identify which part that make me confuse by using the model..."

(Respondent 10)

"...Teaching aid can help to overcome misconception in this topic because chemical bonding involving electron sharing and transfer. So, it's good if we can see the electron transfer and sharing rather than imagine it..."

(Respondent 14)

"...other than that, by using teaching aid such as model of chemical bonding. I prefer teaching aid more than books because I can see more clearly..."

(Respondent 27)

3.8.1 Use of Mind Mapping and Exercises

The analysis from the interview revealed three key strategies to overcome pre-service science teachers' non-scientific conceptions i.e., (i) mind mapping and exercises, (ii) web-based learning, and (iii) using models. The use of mind-mapping could promote critical thinking skills and help to construct new ideas related to the topic of chemical bonds. Mind mapping could also be used to assess the students' understanding (Yunus & Chien, 2016). The practice and training of using mind mapping could assist the respondents to memorize the facts and relate the new knowledge with that of the previous knowledge of chemistry concepts (Liu, Zhao, Ma, & Bo, 2014).

3.8.2 Web-based Learning

Interactive web-based learning has already been implemented in chemistry, such as the *ChemCollective* and *ChemBalancer* online games to improve learners' understanding. These web-based learning tools provide explanations, exercises, games, formula and assessment. According to Frailich et al., (2009), web-based learning activities could integrate the visualization tools with the active cooperative learning style. Therefore, web-based learning could assist pre-service science teachers to construct their knowledge of chemical bonds and obtain a better understanding of this topic. In an earlier paper, Frailich et al. (2007) also stated that effective web-based learning could also enhance students' comprehension of the concept of chemical bonding. Meanwhile, Dori et al. (2013) also supported the use of computer-based learning to enhance students' understanding of chemistry and improve the understanding of the chemical concepts, theories and molecular structures among educators (Dori, Rodrigues, & Schanze, 2013).

3.8.3 Using Models

Hybrid models have already been used as curricular models in learning about chemical bonds (Bergqvist, Drechsler, De Jong, & Rundgren, 2013). Molecular models, simulations, and animations could contribute to the effective learning of chemistry for a better understanding of chemical bonds among the pre-service science teachers (Galvez, 2018; Listyarini, 2021).

4. Conclusion

In conclusion, the pre-service science teachers were shown to have non-scientific conceptions in five areas related to chemical bonds, i.e., definition of terms, bonding, lattice, formation of chemical bonds, and type of chemical bonds. The three key factors that contribute to the misconceptions are text books, the internet, and poor explanations from educators. Several learning and teaching strategies were suggested to overcome these non-scientific conceptions i.e., mind mapping, web-based learning, and the use of models. These strategies could remediate the misconceptions related to chemical bonds among pre-service science teachers. The implications in this research i.e., most of the pre-service science teachers still have a partial of misconceptions; understanding of the chemical bonding topic. If the issue is pro-longed, it would hinder the process of delivering the right concepts in a classroom. Recommendations suggested for future research are (i) a large research sample (more than 30 respondents) should be used to obtain a highly reliable finding, and (ii) Faculties of Education in all universities in Malaysia should be included in the research.

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Nur Farha Shaafi: Writing-Reviewing and Editing, Writing-Original draft preparation, Conceptualization, Methodology, Investigation, and Validation. **Muhammad Mubarrak Mohd Yusof:** Data curation, and Supervision.

Conflict of Interest

There is no conflict of interest associated with this publication.

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REALISING SUSTAINABLE DEVELOPMENT GOALS VIA ORGANISATIONAL MENTAL HEALTH WORK PLAN: RESOURCE-BASED VIEW PERSPECTIVE

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ABSTRACT

The Covid-19 outbreak not only hit the world economy but also negatively impacted people's mental health as Covid-19 became a foundation of intense stress for the entire global population. The first objective of this paper is to review the latest strategies related to promoting mental health work plans to stay relevant in this uncertain environment. The second objective is to suggest the importance of an organisational mental health work plan as the organisational capability using the Resource-based View Theory to sustain competitive advantage. This paper recommends several actions that promote the implementation of an organisational mental health work plan i.e. 1) empathetic leadership; 2) proper communication; 3) moral or psychological support; and, 4) promote mental health awareness. This is among the first paper that conceptualises the organisational mental health work plan as the organisational capability. This paper also proposes a hierarchical model of the mental health work plan for the business, national, and sustainable development goals.

1. Introduction

The coronavirus (Covid-19) attacked humans broadly starting in the year 2020 causing great damage and loss of life. Covid-19 is a nightmare to all people worldwide, especially those who are badly impacted by the virus. On March 31, 2020, the World Health Organisation (WHO) stated the virus has spread to 202 countries with 693,224 confirmed cases and 33,391 deaths which means a global illness outbreak threatening and terrifying the entire world. The Malaysian government commenced various measures to prevent the spreading of Covid-19 including travel bans to and from countries with a high level of infection for example Italy, Iran, and South Korea (Wong & Alias, 2021). The Malaysian government also announced the national movement control order (MCO) to control the outbreak on 18 March 2020 including the closing of schools and higher education institutions, prohibition of movements interterritorial and states, prohibition of gatherings across the country including sports, religious, cultural and social activities (Wong & Alias, 2021; Wong et al., 2021).

The execution of MCO gave an undesirable impact on the economy and caused downfalls to businesses especially companies that are struggling to survive. National MCO announced squeezed the global supply chain of goods and services where most businesses show a major reduction in revenue (Joseph et al., 2020). Social distancing policies, self-isolation orders, and travel restrictions caused a decreased workforce for all economic sectors and loss of employment (Wong et al., 2021). The closing of schools and instruction of working from home by the Malaysian government has impacted business operations, and consequently reduction in the demand for commodities (Wong et al., 2021). Nonetheless, certain businesses are allowed to operate such as restaurants and cafes, but their operations are restricted to only takeaways and deliveries (Wong & Alias, 2021). Consequently, all these challenges pushed businesses to face financial difficulties in meeting expenses, putting countless people unemployed and undeniably badly hitting the economy completely.

The Covid-19 outbreak not only hit the world economy but also negatively impacted people's mental health as Covid-19 became a foundation of intense stress for the entire global population. The current pandemic can be connected to numerous stressors that may drain workers' mental health, during and after the pandemic (Hamouche, 2020). A study conducted by Hamouche (2020), stated two mental health outcomes caused by an epidemic outbreak or pandemic which are psychological distress and major depression. Psychological distress refers to a state of an individual's emotional suffering, together with symptoms of depression (e.g. loss of interest and sadness) and anxiety (e.g. restlessness) (Drapeau et al., 2011). Whereas, depression is a psychiatric mood disorder triggered by a person's struggle in surviving stressful life situations, and presents tenacious feelings of sadness, negativity, and difficulty handling routine tasks (Cummins et al., 2015). The severity of mental health problems is similar to other physical diseases as it can influence people's daily lives and family members. Thus, mental health education should be exposed more to the society in order to eliminate prejudice about mental health, and early diagnosis and treatment can be delivered to the mentally ill person.

In Malaysia, Covid-19 undisputedly affected the mental health of citizens because of the series of quarantine orders, and the closure of businesses, industry, and education institutions to curb the spread of the Covid-19 virus. A study conducted by Wong and Alias on Malaysians during the initial phase of the Covid-19 outbreak in Malaysia indicated that study participants were significantly impacted by the Covid-19 pandemic in their family's day-to-day routine for both non-work and work-related travel. The study by Wong and Alias (2021) shows that there are three factors influencing a high anxiety level which are severity and susceptibility, impact, and fear during the early phase of the Covid-19 outbreak. Early diagnosis of anxiety can provide proactive intervention and mental health support to the affected persons (Wong & Alias, 2021).

Mental health problems became one of the health concerns of the Malaysian government due to the constantly growing numbers of mental disorders over the past 10 years even before the Covid-19 pandemic. Consequently, Covid-19 infection significantly has

deteriorated economic, social, and mental health. In Malaysia, there were 78 suicide attempts from March 18 to June 9, 2020, through the early lockdown period as compared to only 64 suicide cases in the previous year, which was not during the Covid-19 period (Koh, 2022). A Malaysian Mental Health Association report issued in October 2020 also indicated mental illness among Malaysians increased "two-fold" during the Covid-19 lockdown, causing more Malaysians to look for counseling; commonly for stress and anxiety-related issues (Yusri, 2022). A survey on mental health and wellness conducted in Malaysia in May 2022 found that 59 percent of the respondents aged between 16 and 24 years and 56 percent of the respondents aged between 25 and 34 years had a higher level of stress or anxiety in the previous 12 months (Statista Research Department, 2022). The results show that the young generation in Malaysia aged between 16 and 34 years who contributed to the economy as human capital highly suffered from mental health problems particularly due to the Covid-19 pandemic.

Healthcare workers continuously fought the pandemic as they are involved directly in the management of the patients infected with Covid-19. Consequently, healthcare workers are at risk of suffering psychological symptoms. A study conducted between 1 May 2021 and 31 August 2021 among psychiatric healthcare workers working at the Department of Psychological Medicine, University Malaya Medical Centre (UMMC) revealed that the prevalence of anxiety and depressive symptoms among psychiatric healthcare workers was 22.0 percent and 16.7 percent, respectively (Narendra Kumar et al, 2022). Furthermore, another study conducted involving 200 frontline healthcare workers at UMMC in April and May 2020 discovered a far higher prevalence of anxiety and depression; 36.5 percent and 29.5 percent, respectively (Chow et al, 2021). In the same review, university employees were also exposed to depression, anxiety, and stress symptoms during Covid-19. A study focused on mental health status among staff in a higher institution between September to October 2020 showed that the prevalence of depression, anxiety, and stress symptoms was 26.5 percent, 36.2 percent, and 21.3 percent, respectively (Yusof et al, 2022). All these findings demonstrate that most of the employees are emotionally suffering during a challenging situation, for instance, the Covid-19 pandemic.

Organisations are exposed to a dynamic and uncertain environment specifically due to Covid-19. The changes in technology, political, social, and legal condition provide a great impact on a business's survival (Citeman, 2009). Consequently, companies must come out with a work plan in order to provide direction, lessen waste and redundancy, reduce the impact of change, and set the standards to facilitate control (Citeman, 2009). An effective work plan will drive organisational focus and objectives toward desired results (United Nations, 2015). In facing mental health issues at the workplace, a specific work plan is suggested to be integrated into the overall organisational action plans.

The first objective of this paper is to review the latest strategies related to promoting good mental health work plans to stay relevant in this uncertain environment. The second objective is to suggest the importance of a good mental health work plan as an organisational capability using the Resource-based View Theory to sustain competitive advantage. The definition of a good mental health work plan, the importance of good mental health in the organisation, strategies related to promoting good mental health, Resource-based View Theory, organisational good mental health work plan, and sustainability are discussed in the following sections. The future directions of a good mental health work plan are clarified in the closing section.

2. Definition of a Good Mental Health Work Plan

In Malaysia, similar to other countries, the Covid-19 pandemic has initiated an economic crisis and social disruptions. The social distancing policies, self-isolation order, and travel restrictions, together with employment and financial uncertainty, caused a substantial mental health crisis distressing the well-being of populations all over the world (Wong, et al., 2021). In Malaysia, the

undesirable impact on mental health was proven during the early phase of the Covid-19 pandemic (Wong & Alias, 2021).

Mental health is important since humans need psychological and emotional well-being to be productive and live normally. People need to express and experience their emotions as it is part of life and promotes good mental health. World Health Organisation (WHO) describes mental health as a state of well-being when an individual realises his or her own capabilities, can manage the normal stresses of life, can work effectively and fruitfully, and is capable to contribute towards the community. According to Fusar-Poli et al. (2020), individuals in good mental health are normally sad, unwell, and angry as this is part of a normal life for a human being. There are three mechanisms of mental health which are emotional well-being, psychological well-being, and social well-being (Fusar-Poli et al., 2020). Emotional well-being consists of happiness, interest in life, and satisfaction while psychological well-being involved liking most parts of an individual's personality, being good at managing everyday tasks and responsibilities, having virtuous relationships with others, and being fulfilled with personal life (Fusar-Poli, 2020). Furthermore, social well-being involves positive functioning and contribution to society, feeling part of a community, and considering that society is the finest place for all people (Fusar-Poli et al., 2020). Consequently, to obtain good mental health, an individual should get support not only from family members and friends but also from society by providing adequate support and accepting a mentally ill person as a part of society.

Mental illness does not happen abruptly but arises after a person suffers for a long time because of many factors that lead to and trigger distress and depression. Psychological distress and depression are the impacts of intense or continuous stress which have not been properly managed, mainly due to the person's struggle to handle stressful life situations (Cummins et al., 2015; Drapeau et al., 2011). A study conducted by Wong and Alias (2021) found that people with poorer health status had higher probabilities of developing depression compared to individuals with a higher health perception. Besides, the study also found that young people, particularly students, females, and individuals with bad financial situations, were more exposed to mental health symptoms such as depression, anxiety, and stress. The destructive mental effect of the people continues to increase even though the shift from Conditional Movement Control Order (CMCO) to Recovery Movement Control Order (RMCO) due to unexpected life situations during the pandemic, including job loss, financial difficulty, and extended confinement at home (Wong & Alias, 2021).

Mental illness is not a remote problem but it arises across the world and worsens because of the pandemic Covid-19. The number of cases of mental health problems rises even after the quarantine order was lifted and most businesses and industries are back to normal operation. In China, a study conducted by Hou et al. (2020) found that depression and anxiety increased among the Chinese population during the Covid-19 pandemic. Females, fewer adjusted to the epidemic, spent more than 60 minutes on Covid-19-related information and suffered higher stress would raise the severity of depression and anxiety (Hou et al., 2020). Social media may lead to information overload related to Covid-19, hence, intervention should be executed, such as counseling over hotlines and social media, posters in public, and mental health promotion programmes on television, radio, and social media (Hou et al., 2020; Gao et al., 2020). Therefore, individuals have to take corrective actions to protect themselves from fictitious information, especially from unauthorised or illegal sources such as social media platforms that can initiate unpleasant reactions such as panic and anxiety.

A work plan is a regular tool used by a decent business to plan their particular project or tasks that need to be accomplished in workdays. According to the United Nations (2015), work plans are used by managers to communicate objectives and strategies to employees and develop work agendas for an individual. United Nations define work planning as the process of determining what a company aims to do for a period of the work cycle. The work plans should be developed with the direction and attention of the strategic plan and should encompass

procedures in detail that clarify the services and value that will be provided (United Nations, 2015). A work plan also can be described as an approach designed to resolve problems and increase employees' productivity by listing the goal, strategies, tasks, and procedures for any project (Weedmark, 2019). Indeed, a work plan is vital as a roadmap to employees that describe a project from beginning to end.

Employees are special and unique resources, unlike other business financial property, for instance, employees are the human capital that comprehends social skills, education and technical skills, mental health, and personal emotional state. Covid-19 has a serious negative impact directly or indirectly on employees that may produce various bad consequences and create specific fears known as Stress by Corona (SBC) (Opatha, 2020). The fears include the fear of losing a job; the fear of continuity of business operations; the fear of inability to implement plans developed and the fear of inability of formulating new plans for a better future (Opatha, 2020).

The mental health work plan should be introduced by the organisation to reduce the negative impact of uncertain situations particularly due to Covid-19 on the employees. Mental health problems, such as depression and anxiety, are the main reasons for incapacity and early retirement in various nations and directly become a major burden to economies, demanding policy action by developing mental health work plans in organisations (World Health Organisation, 2015). The managers and human resource experts have to develop an intervention mental health work plan for the period throughout and after Covid-19, to sustain an efficient and productive employee (Hamouche, 2020). Mental health work plans could be defined as strategies or mitigation measures that need to be developed by companies to reduce potential negative impacts on individuals' mental health which consist of short- and long-term organisational plans (Hamouche, 2020).

3. Importance of Mental Health Work Plan in an Organisation

When Covid-19 cases are skyrocketing around the world, the working style in an organisation has changed. It requires staff to continue working remotely and receive more workload burdens which negatively impacted the mental health of employees and leads to decreased performance (International Labour Organisation, 2021). Unsurprisingly, many employees often dealt with mental health in the workplace such as anxiety, depression, stress, and burnout when working in a stressful environment (Cai et al., 2020; Gabriel & Aguinis, 2022). It is crucial to provide a working environment that is psychologically safe to work in to sustain good mental health among employees, besides it is one of the most critical aspects of organisational success.

The mental health work plan is essential to prepare employers in helping employees who are struggling with bad mental health and ensure good corporate well-being. The work plan is helpful to encourage employees to be more open about their feelings, and their job and enable managers to understand and cater to employees' needs. This has become a realisation among employers to prioritise the employees' mental health as people with good mental conditions are more likely to be more productive and perform well while they are working (Hamouche, 2020; World Health Organisation, 2020).

Poor mental health is displaying bad consequences on employers' perspectives in terms of productivity. This can be seen by observing the level of absenteeism and presenteeism of employees (Johnston et al., 2019). Employees that have severe depression symptoms are more likely to be absent from work because of a depressed mood and not getting proper sleep which prevents them from performing their job properly. Potential human error, lack of work accuracy, and high exposure to injuries and accidents can be avoided when they are mentally ready to work (Papandrea & Azzi, 2020).

According to the Centers for Disease Control and Prevention Control (2019), working with a good mental state can increase job engagement, build a good rapport with co-workers and enhance physical capability and daily functioning. Employees would feel more engaged in their work which leads to performance improvement when they are able to give full attention to their job for a long period, put more effort into job responsibility, and feel emotionally attached to the job roles given to them (Tisu et al., 2020). The work plan also can help the company in terms of the financial aspect. Employers can lower the expenditure incurred on health care for their organisation and employees as mental health has a connection with physical health, hence poor mental health can contribute to physical sicknesses such as hypertension, diabetes, cardiovascular disease, headaches, and others (Papandrea & Azzi, 2020).

The mental health action plan is imperative and can be used as a preventive measure. The work plan is not only applicable to employees who have mental health problems, but it is also useful to employees that are in a good state of mind (Mehta, 2022). This can help employees with what they need to do to keep mentally healthy at work. If employees show early symptoms that worsen their mental health condition, managers can address the issue early and deal with it in the future efficiently to help the employees. As a result, good mental health is imperative for employees to maintain their work performance especially when they are working in a decent workplace, consequently, the company gains benefits in both financial and non-financial aspects.

4. Development of Mental Health Work Plan in an Organisation

Employers must always be thoughtful in improving employees' mental well-being by addressing mental health issues in the workplace. The employees are facing a few challenges due to the Covid-19 pandemic such as received disturbance at home when working from home, no proper workspace, motivational issues, and more workload burden which contribute the mental health problem among the workers (Hamouche, 2020; Muzammir, 2020). Recognizing and promoting mental health is imperative in creating a safe and healthy workplace in line with sustainable development goal 3 (SDG 3) – Good Health and Well-being, therefore mental health work plans must be developed by organisations during and after the pandemic. To achieve the first objective of this paper, several procedures for developing mental health work plan in the workplace are discussed in this section.

LaMontagne et. al., (2014) presented an integrated approach to mental health work plan as shown in Figure 1, which consists of three (3) main areas that are in line with the World Health Organisation (2022) guidelines.

1. Prevention of mental health problems

Employers who prioritise employees' mental health should access and mitigate any psychological risks that can influence mental illness at every level of management regardless of job position, gender, age, and disability such as workload burden, lack of staff, short deadlines, abuse, and insufficient office equipment. The organisation needs to come up with proper controls in dealing with work-related mental health problems since the emergence of Covid-19 that can ease employees' burdens such as offering flexible working hours, allowing to remotely, modifying work schedules according to situations for those who tested positive for Covid-19 and others.

2. Promotion of good mental health

Organisations need to develop mental health work plans that are able to promote good mental health in the workplace by displaying positive aspects of work and appreciating employees' strengths and capabilities. The manager of each management level and the employees themselves must be equipped with knowledge and skills in handling mental

issues to ensure they are capable to overcome any unexpected event that arise due to Covid-19. Employers also must offer open communication and be a good listener to encourage employees to open up about their mental health problems to superiors, hence can keep employees stay longer in the company as they feel connected to the organisation and are pleased to work in a psychologically safe workplace.

For example, one company in Malaysia, Glove Corp Bhd has organised mental health training and talks to their employees and successfully attracted them to accept consultations for counseling dan psychotherapy as they felt comfortable to seek help from professionals (The Malaysian Reserve, 2022).

3. Establishment of a support system

Mental health work plan needs to include any availability of a support system provided to employees who are living with mental health conditions. For example, the proper return-to-work plan offered to employees that went through the quarantine period or working remotely and have suffered mental issues during the period.

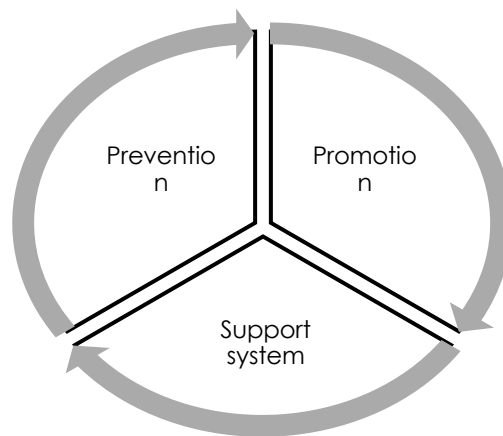


Figure 1: Integrated Approach of Mental Health Work Plan

Organisations may already develop mental health policies or made a few initiatives to support the mental health of employees. As presented in Figure 2, the following procedures launched by Beyond Blue can be used in improving the existing mental health work plan (Beyond Blue, assessed December 2022).

1. Obtain senior leadership support

Every group of people may have a different goal to address mental issues. Senior leaders, for instance, are motivated by legal, ethical or moral, and financial aspects when dealing with the mental health of their staff, while others are driven by improving productivity, efficiency, risk management, and securing good relationships with clients. Therefore, it is crucial to ensure the work plan has a connection with the goals, values, and key performance indicators (KPIs) of the company. It is also imperative to establish a steering committee where senior leaders are personally engaged in developing a work culture that is accepting and supportive of employees who are struggling with mental health issues.

2. Determine needs

Organisations need to identify the existing policies, programmes, supports, and practices. Subsequently, they need to review and evaluate its policies by accessing existing data and research such as absenteeism rates, turnover rates, and employee performance review feedback to find any loopholes, then consult with employees and other stakeholders to develop an updated mental health work plan.

3. Develop a plan

Prior to revising the existing mental health work plan, an organisation must identify its desired outcomes and goals. They may seek collaborations with internal expertise in the organisation or external expertise if necessary to gain knowledge and find additional support such as psychologists and insurance companies. For example, the collaboration between an insurance provider, AIA Bhd, and ThoughtFull, a Southeast Asian-based digital mental health platform as AIA has launched a first-in-market Mental Health Solution that enables employers to provide mental health support to employees who are struggling with mental illness (Murugesan, 2022).

4. Monitor and review the implementation of the latest work plan

The organisation must monitor the implementation of the most recent mental health work plan to ensure that it is being carried out for the right people with the best methods for the best results. Feedback and the ability to understand employee concerns are important to determine the effectiveness of the most recent work plan at the workplace.

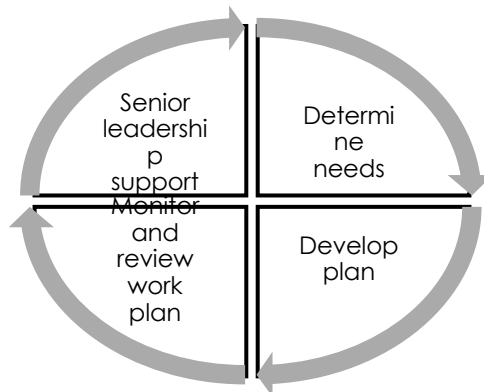


Figure 2: Procedure for Improving the Existing Mental Health Work Plan

5. Resource-based View Theory, Mental Health Work Plan, and Sustainability

This section is associated with the second objective of this paper. Resource-Based View Theory (RBVT) is a theory that considers a firm's resources as an important element in designing a competitive advantage. Resource-Based View Theory combines the analysis of the firm's internal and external environment. The three types of resources are tangible resources, intangible resources, and organisational capabilities. Tangible resources are assets that can be identified physically, for example, physical assets, financial resources, organisational resources, and technological resources. Intangible resources are the assets that are not physically identified due to their inclusion in the business's daily activities, such as human capital and the firm's reputation. Human resources involve trust, experience, the ability of staff, managerial skills, and the efficacy of work teams. Innovation resources are technical and scientific expertise and ideas, and

innovation capabilities. Reputation resources include brand names, reputation for fairness with suppliers, and reliable product quality with customers. Organisational capabilities are the capabilities and abilities that the company employs to convert the inputs into outputs such as the capability to employ, influence, and maintain manpower (Dess et. al., 2016).

In creating a competitive advantage, a resource needs to own four key attributes i.e. valuable, rare, imperfectly imitable, and non-substitutable (Barney, 1991). Valuable is a situation wherein the company's resources are able to make use of the outside opportunity or lower external threats (Hesterly & Barney, 2010). In the meantime, a company's resource is rare when there are only a small number of its rivals that possess equivalent resources. Another attribute of a resource's sustainable competitive advantage is imperfectly imitable (Barney, 1991). This happens when the firm's resources are pricey to be emulated by its rivals due to physical uniqueness, path dependency, causal ambiguity, or social complexity (Dess et. al., 2016). The final attribute of a firm's sustainable competitive advantage is non-substitutable i.e. there are no tactically equivalent useful resources that by themselves are not unique or incomparable.

In this paper, the mental health work plan is perceived as an essential organisational capability that permits business stability in the long run. In Malaysia, if the organisations are unceasingly promoting mental health well-being at the workplace by implementing specific work plans, this would help to materialise both the government's National Mental Health Strategic Plan 2020-2025 and the UN sustainable development goals. In this paper, the mental health action plan refers to the capabilities and abilities that the company uses to transform staff that have mental health issues into staff that have improved well-being. Consequently, staff that have improved well-being would be able to work efficiently and productively, which, in turn, contributes back to the organisation.

Consistent with the RBVT, hence, it is put forward that the mental health work plan is vital to create a sustainable competitive advantage, especially during the post-pandemic recovery era. Organisations must ensure that they own four attributes of competitive advantage that need to be embedded into their strategies and action plans which are as follows:

1. Valuable – Organisations could consider planning and employing strategies that improve employees' mental health. Having mental health work plan could indicate the organisational commitment to uphold the well-being of employees in the organisation.
2. Rare – Organisations may consider how to be unusual i.e. unique as compared to other competitors. For example, reading about mental health prevention strategies and continuous upskilling and reskilling by attending seminars and workshops on mental health prevention strategies.
3. Imperfectly imitable - Distinctiveness is vital to value creation because it reduces competition. Hence, being creative is one way to create a competitive edge. This could be assisted by having employees that possess positive well-being, with minimal mental health problems. The organisations must come up with unique mental health work plans that are embedded in the human resource management or policy.
4. Non-substitutable - To be a source of sustainable competitive advantage means there must be no strategically matching valuable resources that are themselves not rare or unique. This may be possible to achieve if organisations are willing to undertake external environment analysis and acknowledge the availability of internal resources and capabilities at all times, including the unique mental health work plan to promote the well-being of staff.

The following explanation is on the conceptualisation of the mental health work plan and sustainability. The mental health work plan as an organisational capability plays an important role in achieving the UN SDGs agenda. Table 1 presents the connection between the mental health work plan and indicators of sustainability.

Table 1

The connection between Mental Health Work Plan (Organisational Capability) and Sustainability

SDG	Indicators explanation	Connection
3 - Ensure healthy lives and promote well-being for all at all ages.	By 2030, reduce by one-third pre-mature mortality from non-communicable diseases (NCDs) through prevention and treatment, and promote mental health and well-being. (Target 3.4)	By implementing the mental health work plan, the well-being of staff at organisations could be promoted.
4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.	By 2030, substantially increase the number of youths and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs, and entrepreneurship. (Target 4.4)	Both formal and informal knowledge acquisition contribute to improvement in the well-being of employees in organisations.
8 - Promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all.	<p>Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity, and innovation, and encourage the formalisation and growth of micro-, small- and medium-sized enterprises, including through access to financial services. (Target 8.3)</p> <p>By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value. (Target 8.5)</p>	As a result of the implementation of the mental health work plan, the well-being of employees would be improved. This would certainly provide positive impacts on others, such as job productivity.
10 - Reduce inequality within and among countries.	By 2030, empower and promote the social, economic, and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic, or status.	As a result of implementing the mental health work plan, this would encourage equality by involving all staff in well-being and expand to be involved in the social, economic, and political. Thus, inequalities

	<p>(Target 10.2)</p> <p>Ensure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies, and practices and promoting appropriate legislation, policies, and action in this regard.</p> <p>(Target 10.3)</p>	<p>could be reduced.</p>
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Finally, Figure 3 proposes a hierarchical model of the contribution of the mental health work plan to the business, national, and sustainable development goals.

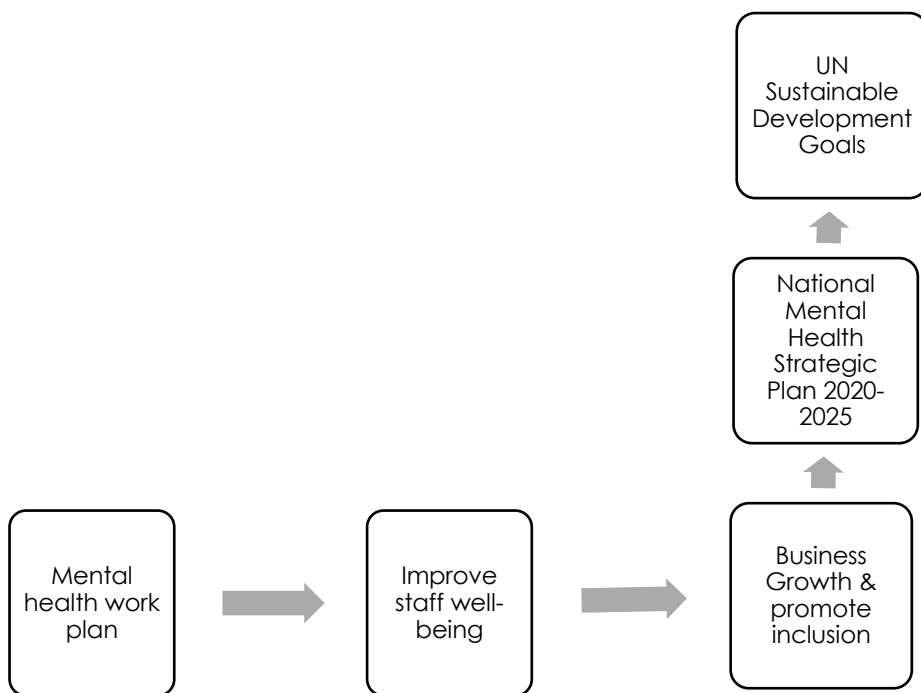


Figure 3: Hierarchical Model of Mental Health Work Plan

6. Ways Forward

This paper has reached its objective, which is to suggest several actions to promote good mental health and work plan. The actions are 1) empathetic leadership; 2) proper communication; 3) moral or psychological support; 4) promote mental health awareness. Organisations should implement the latest strategies so as to promote good mental health and work plans to stay relevant in the uncertain environment after the Covid-19 pandemic.

Firstly, managers, as a leader should have empathetic leadership skills by demonstrating the highest level of empathy for their employees at work after Covid-19. Managers should focus on listening to hear the problems employees are facing at the workplace and accepting opinions from employees. For example, providing a flexible working schedule to employees that

allow them to align working hours on the job with their lifestyle, hence can lead to reducing stress level and greater productivity.

Secondly, communication barriers must be prevented between employers and employees. Communication is a key tool in dealing with employees to manage the company's operation. Accurate and up-to-date information about the company's plan and the job should be delivered to the employees when necessary. This can help to ease the feeling of insecurity and uncertainty that crossed employees' minds related to their work. Besides, communicating with professional therapists and attending seminars or workshops conducted by the company also can improve their mental health condition.

Thirdly, offering moral or psychological support is one of the best ways that can support employees emotionally. Employers should offer professional therapist services to employees who have mental health problems such as anxiety, stress, depression, burnout, and others in order to help them in improving their state of mind and motivate themselves to perform well at work in the future. Working with good mental health can increase the performance and productivity of personnel directly.

Lastly, the organisation should actively promote mental health awareness such as conducting seminars or workshops on mental health for the employees. Employers nowadays take employees' mental health into consideration to secure organisational success. Therefore, it is crucial to educate the employees on how to manage properly their stress level and other mental illnesses as bad mental health will affect their performance.

In conclusion, the hierarchical model of good mental health and work plan possibly will contribute significantly to company, nationwide, and sustainable development aims if it is implemented in the government's mental health action plan organised by the Ministry of Health. Furthermore, organisations must be aware and reminded regularly about the importance of good mental health and work plan to stay pertinent in the marketplace. This is because good mental health and work plans provide new opportunities to approach indefinite resources to the organisation.

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Conflict of Interest

There is no conflict of interest associated with this publication.

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NEW TRENDS OF CLOUD KITCHEN TECHNOLOGY AND CONSUMERS' PURCHASE DECISIONS: A CONCEPTUAL STUDY

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ABSTRACT

This conceptual paper aims to explore the potential research area of Cloud Kitchens and their impact on consumer purchase decisions. With the ever-increasing demand for food delivery, Cloud Kitchens have emerged as a viable alternative to traditional restaurant models. Operating without a physical location or dining area, they present unique challenges and opportunities for stakeholders in the food industry. By identifying potential predictors of Cloud Kitchen purchase decisions through a literature review, this study can contribute to promoting and ensuring the quality of Cloud Kitchen products and services in the future. The findings of this study can benefit all stakeholders, including Cloud Kitchen operators, consumers, and policymakers, by providing insights into the key factors influencing consumer purchase decisions. This paper highlights the need for further research in this area and contributes to the existing literature on Cloud Kitchens and their impact on the food industry.

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1. Introduction

The business concept for cloud kitchens is based solely on delivery and does not have a physical store location. The expansion of cloud kitchens has been an important factor in expanding the food sector as a whole. "Cloud Kitchen" derives its name from the fact that customers can order online via food aggregator applications or restaurant apps. Hence, these kitchens are also known as ghost kitchens and virtual kitchens (Volpe, 2020). In response to the continuously growing demand for meal delivery, "cloud kitchens" have emerged as an effective alternative to traditional

restaurant operations. As COVID-19 struck the world in 2020, the F&B industry was seriously affected, leading to many restaurants and other hospitality businesses closing due to the lockdown (Latip et al., 2021). The idea of "Cloud Kitchen" started spreading very quickly, and has satisfied the need for a solution ever since. Restaurants transformed themselves into cloud kitchens to remain abreast of the changing times and adapt to new business models. This allows them to determine what factors can influence customer purchase decisions in cloud kitchen services.

The emergence of cloud kitchens and their demands seem to increase. The response given by the industry to the skyrocketing demand for off-premises orders and third-party online delivery providers has led to the emergence of cloud kitchens even before the COVID-19 pandemic (occasionally referred to as the pandemic). Cloud kitchens were created as part of the restaurant industry's reaction to the skyrocketing demand for off-premises orders (Rivera, 2019). Furthermore, Choudhary (2019) states that kitchens are fully online-based food aggregators that supply prepared meals in the delivery mood only, with no physical presence that consumers can visit. Cloud kitchens operate on a low-cost, demand-based model relying solely on online food delivery and have been an essential element in sustenance during COVID-19 lockdowns in every country, and beyond. In addition to that, many restaurants in Malaysia now provide takeaway or delivery services as a result of these new food service trends. The idea of a cloud kitchen is significant since COVID-19 has caused changes in customers' behaviour, especially "foodies" and younger people (Itani & Hollebeek, 2021). In this context, the term "cloud kitchen" refers to an idea of a commercial cooking area (Indianexpress, 2021) that allows for takeout without dining, often through calls and online platforms (Outlook, 2020). Consumer behaviour is influenced by a variety of factors, including perceived benefit and risk, consumer knowledge, E-Word-of-Mouth, halal aspect, and trust in product assurance. Thus far, a limited empirical study has been carried out to investigate this game-changing innovation to provide the food service business with insights and advice. Because of this, the purpose of this study is to fill the gap in the existing research by employing the prospect concept to help understand the underlying mechanisms that link up roots with the consumers' behavioural responses toward cloud kitchens. Thereby, the past studies related to cloud kitchens are still limited, which is the gap in this research in the food services industry. However, some consumers do not have enough information regarding cloud kitchens. The term "cloud kitchen" is somewhat unknown among the majority of consumers. A cloud kitchen is restaurant, food place, or food hawker that offers its customers multiple benefits. These benefits include open online delivery and take away to a specified area or outside of their delivery zone, as well as assistance in generating new business and increasing brand awareness. One of the reasons why not many people are familiar with cloud kitchens is due to the fact that the term "cloud kitchen" is still relatively new. A "cloud kitchen" is a specific kind of restaurant that caters mostly to customers who want their meals to be taken away or delivered. Due to the nature of the business, which is referred to as a "cloud kitchen,". The goal of this study is to shed light on the ways in which independent variables influence consumer purchasing decisions about cloud kitchen services.

Therefore, the following research objectives are proposed for future empirical study, which is crucial to develop better and maintain the management and regulation which govern the industry.

Research objective 1

To investigate factors that influence consumer purchase decisions in cloud kitchen services.

Research objective 2

To determine the strongest factor contributing to consumer purchase decision to use cloud kitchen services.

2. Literature review

Cloud kitchen

A cloud kitchen is a food service establishment that specialises in takeout and delivery; it does not offer dine-in (Restaurant Times, 2018). A cloud kitchen is similar to a food court concept; the distinction is that it solely serves meal delivery. A profitable business or venture regardless of location, atmosphere, or infrastructure. Cloud Kitchen also has a website, takes food orders online, and delivers food to customers' homes. Cloud kitchens can serve food to customers without having to hire people to talk to customers because they have a technical interface and are connected to the backend of popular delivery apps. The coronavirus pandemic has severely impacted almost all industries, including the food industry and altered the behaviour of consumers' purchase decisions, which resulted in the rising demand for cloud kitchens (Yang et al., 2020; Mehrotra, 2020). In such circumstances, a cloud kitchen might be an effective solution for business owners. On the other hand, it is essential to grasp what the customer is looking for. In order for the same information to be utilised in the context of improving business. As a result, we would like to run an experiment to study how it influences customers' purchasing decisions.

Purchase decision

The consumer buying decision process is the process of decision-making in which the consumer begins to acquire products or services in exchange for money in the market before, during, and after purchasing goods or services. This process can be broken down into three stages (Lumen, 2019). Furthermore, according to Kotler and Armstrong (2014), the purchase decision is the stage of the buyer's decision-making process in which an individual decides whether or not to actually purchase the product that is being considered. "Consumer behaviour" is defined as the activities and decision-making processes of people who make purchases of products and services for their own personal consumption, as Engel, Blackwell, and Mansard stated. "Consumer behaviour" is defined as "the choice process and physical action that individuals participate in when evaluating, acquiring, utilising, or disposing of goods and services," as stated by Loudon and Bitta (Smirti, 2019).

In addition, Mramba (2015) insists that a wide range of factors, including personal, psychological, social, and cultural factors, impact a consumer's purchase decisions. As a result, it is challenging for marketers to forecast how consumers will purchase a specific product. In a similar vein, Djatmiko and Pradana (2015) claimed that the stage of the process that involves consumers actually purchasing the product is the stage where purchase decisions are made. Indeed, it is initiated by the intention to purchase or use the product (Latip et al., 2020). So based on past paper research, we can observe that consumer purchase decisions are significantly affected by numerous factors such as perceived benefit, benefit risk and consumer knowledge. By identifying the triggers that initiate a consumer's intention to purchase or use a product, businesses can tailor their messaging, product features, pricing, and distribution channels to better appeal to their customers and create a satisfying experience that can lead to loyalty and positive word-of-mouth.

Perceived benefit

The internet presents significant risks in cloud kitchen services but also provides numerous benefits that impact consumer purchasing decisions. The perceived benefits are consumer belief and satisfaction with cloud kitchen services, as well as consumer purchase decisions. This is because cloud kitchen services are practical and simple, offer a wider range of products, and are less risky. In the hospitality and tourist sectors, subjective and objective knowledge is associated with perceived benefits and hazards, while various knowledge types exert distinct effects (e.g., Klerck and Sweeney, 2007; Sharifpour et al., 2014). When customers perceive greater personal benefits such as convenience, a variety of high-quality food options, and societal benefits such as reduced traffic and food waste, job creation, and economic contribution, they will develop a higher level of trust and be more likely to consider cloud kitchens in the future.

Customers may consider cloud kitchens beneficial to the local economy since they provide new business options for existing and new restaurateurs by allowing them to expand or enter a market with low overhead costs. Furthermore, cloud kitchens reduce road traffic, carbon emissions, and food waste (Fabricant, 2020). Perceived benefits are based on heuristics and actual experience, while perceived risks are mostly caused by how the brain processes information (Kahneman & Tversky, 2018). Holbrook (2005) defines the significance of customer perception in understanding intentions. Consumers will complete the purchase because they believe they will receive the benefits they expect from the online transaction. Some of the consumer expectations, such as discounts and quantity of items (Lai and Zhuang, 2006). Therefore, there is a potential relationship between perceived benefits and consumers' purchase decisions in cloud kitchen services which is worth to be examined.

Perceived risk

Dowling and Staelin (1994) define perceived risk as "the consumer's sense of the uncertainty and negative consequences of purchasing a product or service." In the early 1960s, perceived risk was studied in consumer behaviour and marketing research (Bauer, 1960), and many subsequent studies on perceived risk have demonstrated that perceived risk has a negative effect on customer behaviour (Adnan, 2014). For example, Youn and Kim (2018) investigated the food quality hazards in terms of flavour and value for money, as well as food safety issues in ethnic restaurants. Other research (Liang et al. 2018; Mao and Lyu, 2017) discovered that perceived values and perceived risks were key drivers of users' repurchase intentions. Similarly, in the area of cloud kitchens, this study employs perceived risks and advantages as determinants of client behavioural intentions. The cloud kitchen is regarded as a game-changing invention in the food service business. These disruptive technologies cause two types of disruption (Schuelke-Leech, 2018). The first level has an impact on the industry and the market, while the second level has an impact on society as a whole. Similarly, this study employs two levels of perceived risks, personal and societal hazards, as advised by previous literature, as well as two levels of perceived benefits, personal and social benefits, as applicable in the current situation. Based on the earlier discussion, the following sections of this study propose and verify a new framework of perceived benefits and risks for cloud kitchens. According to Stone and Gronhaug (1993), perceived risk is the most important factor influencing purchase decisions. Therefore, there is a potential relationship between perceived benefits and consumers' purchase decisions in cloud kitchen services which is worth examining in future research.

Consumer knowledge

The customer's knowledge of a product, packaging and design, and menu indirectly influence on purchase intention, whereas consumer knowledge of a product is the most important component. Customers frequently rely on their personal memory and knowledge to make purchasing decisions. The study by Jayachandran et. al (2004) demonstrates that customer product knowledge is crucial to purchasing decisions. The correlation between customer product knowledge and purchase intent is favourable and highly significant.

According to Chi et al. (2021), knowledge is crucial in situations with high uncertainty or risk. Subjective and objective knowledge have distinct implications for the processing of customer information and subsequent decision-making (Raju et al., 1995). For instance, Raju et al. (1995) and Pieniak et al. (2010) discovered that subjective knowledge influences customers' decisions more than objective knowledge. In contrast, Lee and Lee (2009) found that customers with high objective knowledge (as opposed to subjective knowledge) are less likely to be influenced by negative product cues. Customers typically lack the understanding to comprehend a novel and unique service like a cloud kitchen. The results of this study provide empirical proof that education is important and can raise the perceived benefits and decrease the perceived risk of cloud

kitchens among customers. The results highlight additional distinctions between the effects of subjective and objective information. Specifically, subjective knowledge helps customers identify the benefits, whereas objective knowledge reduces the perceived danger, which boosts customers' faith in cloud kitchens and their propensity to order from them. Research (Klerck and Sweeney, 2007) shows that subjective and objective customer knowledge serve different purposes. Thus, consumer knowledge potentially influences consumers' purchase decisions in cloud kitchen services which is worth to be examined.

E-word of mouth

The rapid growth of the internet has altered how customers interact with one another by creating a central location for the exchange of thoughts and feedback. As a result, the potential influence of the perspectives of others has significantly expanded. According to López and Sicilia (2014), this method of communication is referred to as "electronic word of mouth" or "e-WOM." In this context, it is important for marketers to make every effort to guarantee that favourable e-WOM regarding their company and its products is maintained. Consumers are sensitive to influence by the word-of-mouth (WOM) recommendations of those in their immediate surroundings, such as friends, peers, and family.

The term "Electronic Word of Mouth" refers to an effort to spread opinions (such as those on the goods and services offered by a particular firm) from one user of the internet or social media platform to the next. EWOM is a way for customers to express themselves and is a powerful instrument that may be used to influence purchasing decisions. For instance, Moses et al. (2016) proposed that brand equity has a role in consumers' purchasing decisions for footwear products like shoes. Building brand equity is of utmost significance for branded products, as stated by Tong and Hawley (2009). This is especially true in markets that are highly competitive and brand aware. Severi & Ling (2014) strongly agree that customers are influenced toward certain products based on the feedback left by other customers that is visible online, such as on websites or online forums which also supported by May et al. (2021). Digital technology, especially social media platforms and online forums, greatly impacts how customers decide what they like. Thus, e-word-of-mouth potentially influence consumers' purchase decisions in cloud kitchen services which is worth to be examined.

Trust in product assurance

To begin, a number of researches have been conducted that have analysed the features of trust assurances and aimed to investigate the implications that these qualities have on the level of consumer's trust. Lala et al. (2002) focused their attention on the guarantees of confidence and the quality of the information. According to their findings, providing consumers with trustworthy information and information of high quality boosted the likelihood that consumers would make a purchase. When a consumer has trust in a product, they believe it will live up to their expectations (Wongkitrungrueng et al., 2020). According to a study that was carried out in the hospitality industry, consumers preferences are highly impacted by whether or not they have confidence in the organisation (Erkmen & Hancer, 2019).

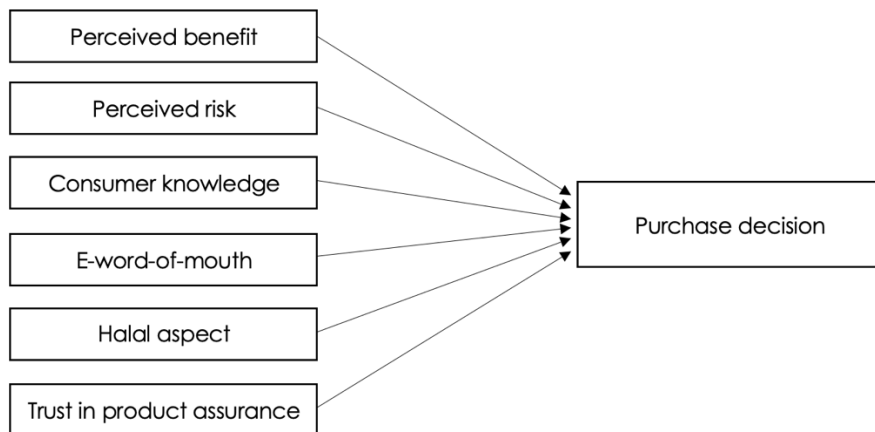
In addition, according to Shareef et al., (2019), consumers' intentions to make online purchases may be influenced by a variety of factors, including trust and operational performance. Current studies show that user behaviour is favourably associated with consumers' happiness. This is the case despite the fact that social influence, variety seeking, advertising, convenience, trust, and product aspects are all factors that are positively related to consumer behaviours (Rahman et al., 2018). It has been demonstrated by this previous research assertion that religiosity is able to influence the purchasing behaviours of consumers. All of these studies that have resulted in halal and religiosity have a significant influence on the purchase decisions made by consumers in the field of cloud kitchen services. However, do religiosity, and generate cluster differently influence consumers' purchase decisions in cloud kitchen services which is worth to be examined.

Halal Aspect

Halal is significant in Malaysia since it is essential to the country's Muslim way of life and culture. Identifying food labelling impacts on consumer behaviour (Araya et al., 2018) and Halal labels have been the subject of several research in recent years, as the topic of food labels receives an increasing amount of attention on a worldwide scale within the food industry (Iranmanesh et al., 2020). According to Wibowo and Ahmad (2016), halal products have successfully attracted a large number of consumers. After that, the Halal label is the most important piece of information for Muslim buyers to verify that the food they purchase complies with their religious obligations (Iranmanesh et al., 2020). In addition, the consumption of halal food is a necessary obligation under Islamic jurisprudence, often known as Syariah law. Muslims who disobey these regulations are seen as religiously repugnant and shameful (Bassiouni, 2012). According to one study, halal certification was linked favourably to brand perception and consumers trust in food products (Yunos et al., 2014). This emphasises how crucial halal certification is as a factor that might affect consumers' confidence and purchasing choices. Similar to this, Yener's (2022) study discovered that halal certification influences consumers perceptions and purchase intentions for such items in a favourable way.

In addition, a study was carried out by Awan et al. (2015) with the purpose of determining the factors that may impact the decision of Muslim consumers to purchase halal products. According to the conclusions of the survey, Muslim consumers are affected when it comes to making halal purchases by societal reasons, personal considerations, and the halal emblem. According to L. S. Yan et al. (2017), Muslim consumers have been the subject of several studies in the past. The results demonstrated that trust in the product influences consumers' purchasing decisions positively. This previous research has shown that a customer's level of faith in the quality of the goods they are purchasing might have an effect on their purchase behaviours. All of these studies that have led to increased customer confidence in product assurance have had a major impact on the purchasing decisions that customers make when it comes to cloud kitchen services. Thus, trust in products potentially influences consumers' purchase decisions in cloud kitchen services which is worth to be examined.

Propose Research Framework



3. Proposed methodology

There are many research designs that can be utilised in the research, but this research focused more on conclusive research design. The conclusive research design is implemented when the purpose of the research is to acquire information that can either be used to reach conclusions or to make decisions. The vast majority of the information gathered in this manner of study is quantitative, which indicates that it is capable of being represented by numerical values. Meanwhile, the type of research used in this research is the quantitative method. The quantitative method refers to the process of amassing and analysing numerical data, which can be collected from various sources.

In this research, a causal design is utilised to investigate the subject of whether or not there is a significant link between the independent variable and the dependent variable. Causal research is a research approach for determining the cause and effect relationship between two variables. This research is mostly utilised to determine the cause of a specific behaviour. Using causal research, we determine what changes occur in an independent variable due to a change in the dependent variable.

A non-probability sampling design will be utilised in this research, which is also suitable with the convenience sampling method. The method best suits the study due to the no sampling frame available for the target population. The unit of analysis for this study is individuals who have had previous experience utilising cloud kitchens in Kuala Lumpur and Selangor and either uses foodpanda or grabfood, which are the two companies that account for the majority of cloud kitchen service vendors. Furthermore, we use a self-administered questionnaire survey method with a design with a 5-value Likert scale measurement: strongly agree, agree, neutral, disagree and strongly disagree.

4. Conclusion

With rising demand for the ease of services, technology has streamlined many industries and sectors to a large extent, with the food industry being one of these. Cloud kitchens may influence the consumer purchase decision based on several factors or variables. The independent variables are perceived benefit, perceived risk, consumer knowledge, E word-of-mouth, halal aspect and trust in product assurance. In addition, the dependent variable is mainly consumer purchase decisions. Changing consumer behaviour and purchase decision has increasingly made consumers seek out the latest models, such as cloud kitchens, where the essential factors are met. However, there is still a long way to go for the industry and cloud kitchens owing to the large contribution to the food services industry's future.

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Authors Contributions

Nurul Syahirah Idris and Muhammad Afiq Zulkifly led this study and wrote the paper; Muhammad Safuan Abdul Latip supervised, reviewed and improved the article.

Conflict of Interest

No conflict of interest is associated with this publication.

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SOCIAL MEDIA INFLUENCER IN MALAYSIA: A REVIEW OF LITERATURE AND FUTURE DIRECTION

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ABSTRACT

The emergence of the digital economy and a disease outbreak like the Pandemic Covid-19 have raised concerns about Social Media Influencers (SMI). SMI has been seen as important to complement the business and management. SMI acted as a marketing tool that utilised the social media platform. This paper aims to review past research in Malaysia related to SMI. Relevant articles were available on Google Scholar in the period between March 2020 to July 2022 and have been screened and analysed. Our review shows that research related to SMI varies in all aspects including awareness, perception, role, impact, causal analysis study and descriptive. The finding has also shown that SMI has been involved in consumer products, healthcare, automotive, advertising, fashion, tourism and hospitality and others. In conclusion, SMI is widely accepted as one of the marketing tools in various business sectors. Policymakers and businesses need to strengthen SMI in Malaysia. Legalise SMI is vital, especially in today's digital businesses. Future study is encouraged to examine the impact of SMI on business while suggesting a sustainable business model for SMI.

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1. Introduction

The digital economy brings new trends in business and marketing including created jobs that use social media platforms such as Facebook, Instagram and WhatsApp. The digital economy in Malaysia contributed 22.6% to gross domestic product (GDP), increasing 10.4% to RM320 billion in 2020 compared to 2019 (Department of Statistics Malaysia, 2022). In line with Malaysia's aspirational National Entrepreneurship Policy 2030 (NEP 2030) and Shared Prosperity Vision 2030 plan, Malaysia is committed to be the heart of the Digital ASEAN economy (Ministry of Entrepreneur Development and Cooperatives, 2019; MAMPU, 2019; MDEC, 2022). The usage of social media in business has also increased recently, especially during the COVID-19 pandemic situation. The United Nations Conference on Trade and Development (2020) indicates that the world's consumer trends are now shifting to more frequently rely on the internet for shopping, news, health-related information and digital entertainment during this pandemic. Furthermore, in 2021, more than 65% of consumers in Malaysia purchased the majority of items they needed via an online platform instead of going to a physical store (Google, Temasek & Bain and Company, 2021; Narula, 2022). The COVID-19 pandemic has persistently changed online shopping behaviours which eventually help to materialise the digital economy aims.

Recently, most digitally powered businesses integrated social media as the medium of business and marketing strategy as this platform is considered the most assessable and convenient. Facebook, Twitter, Instagram, YouTube, Pinterest and Reddit are among the social media platform in Malaysia (StatCounter, 2022). Social Media Influencers (SMI) emerged from the increased use of the social media. SMI is known as an influencer, a person who uses and utilises social media to create their brand or influence their followers to buy products or services and support a brand and others' business agendas (National Geographic Society, 2021). SMI also refers to someone that has the power to affect or change people and their behaviour through social media. Most businesses use SMI in their business and marketing strategy and the trends consistently increasing (Google Trends, 2022). SMI uses its platform to promote products or services to its followers and potential consumers. Therefore, the objective of this study is to explore the research conducted in Malaysia specifically related to SMI to recommend areas for future research. To the best knowledge of the researcher, limited study has been offered about SMI, especially in Malaysia (Schouten, Janssen, and Verspaget 2020; Charles, 2020; Pop, Săplăcan, Dabija, & Alt, 2021; Ahmad & Bruno, 2021; Kim & Kim, 2022;). The following section of this paper is a literature review, methodology, finding and conclusion.

2. Literature Review

SMI is known as "digital influencers" since they use and rely on social media to influence people's behaviour, attracting consumers' attention to organisational products through their knowledge, skills and expertise of the products or services, attitudes, opinions and their reviews (Khalid, Jayasainan, & Hassim, 2018; Zak & Hasprova, 2020). SMI also influences and modifies consumer's behaviour as to persuade them to buy products or services, support a brand, or support business agendas (Jiménez-Castillo & Sánchez-Fernández, 2019; National Geographic Society, 2021). Khan and Phung (2021) mention that consumers rely on SMI before making any future purchases as they have a high level of trust on the SMI. SMI acts as new business and marketing tools, shifting from being traditional towards digitally based business.

SMI resulted in a brand reputation, positively boost sales and revenue, generate engagement, increase expected value and behavioural intention regarding the recommended products and build a network of fans and supporters (Jiménez-Castillo et al., 2019; Wei, Singh & Kularajasingam, 2021; Zak et al., 2020). SMI attracts consumers' attention to the organization brands, resulting in more effective brand communications (Jiménez-Castillo et al., 2019). SMI also helps the organisation in developing a network of fans and supporters, then they use this network to express themselves and influence potential customers, while fans and supporters can easily

communicate their opinions, ideas, and product experiences (Zak et al., 2020). With these advantages, it is not surprising that SMI is gaining popularity around the world, including in Malaysia.

As a result of the COVID-19 pandemic and the subsequent uncertain global economic events, there is now a critical need for entrepreneur' skills for the world of complexity, whereby advancement of digital technology concurrently take hold in the era of Industry Revolution 4.0 (IR4.0). As digital technologies become more prevalent, the digital economy has been identified as a key economic growth area (KEGA) in realising *Wawasan Kemakmuran Bersama 2030* (WKB 2030) to make Malaysia a country that is developing sustainably with fair economic distribution as well as equitable and inclusive growth (Economic Planning Unit, 2021). In addition, the Malaysia Digital Economy Blueprint 2021 highlighted that the digital economy would become the foundation of the modern economy, therefore entrepreneurs need to be equipped with the know-how, knowledge and skills needed to stay relevant.

3. Methodology

This study intends to review research related to SMI conducted in Malaysia specifically during and after the post-COVID-19 pandemic available in an online database. In this study, the researcher begins searching for journal articles in online databases namely Google Scholar. The keywords or search strings by the name of "social media influencer", "social media influencers", "SMI", and "in Malaysia" were used in the searching process. From this search, several related journal articles have been reviewed and analysed to be included in the review of this paper. The review process is to sort the most relevant articles that can fit the research objectives to present the issues of SMI specifically in Malaysia. In total 17 articles were collected and reviewed in this study. The review has been examined based on objectives, methods, and findings accordingly to all collected empirical studies.

4. Results & Discussion

4.1 Journal Articles Searching

Table 1 indicates the collected journal articles. In total 17 articles were reviewed based on key searching. Meanwhile, table 2 indicates the study of SMI in Malaysia. The theme of article is across various sectors including consumer products, automotive, fashion, healthcare, services and others. The reviews found that SMI roles exist in various sectors.

Table 1

Collected journal articles

Key searching	Number of articles(relevant)	Source
"Social media influencer" "social media influencers" "SMI" "in Malaysia"	17*	Google Scholar

*Relevant to the scope of review

Table 2

Theme of articles

No	Theme of article	Title	Authors & year	Key finding
1.	Consumer product (Pet Product)	Impact of Social Media Influencers on Purchasing Intention towards Pet Products.	Wei, L. Y., Singh, J. S. K., & Kularajasingam, J. (2021)	The study found that source attractiveness and source similarity were significant predictors of females'

		A Quantitative Study Among Females in Malaysia		intention to purchase pet products.
2.	Consumer product (Restaurant)	Social Media Influencers and Electronic Word of Mouth: The Communication Impact on Restaurant Patronizing	Azim, R., & Nair, P. B. (2021)	Familiarity of source and convenience of information have a strong impact on the intention to purchase.
3.	Consumer product (Food)	Social media influencers - shaping consumption culture among Malaysian youth	Khalid, N. L., Jayasainan, S. Y., & Hassim, N. (2018)	Social media influencers are significant in sharing new knowledge through the display of food tasting experiences that is highly curated and often emphasize on aesthetics.
4.	Consumer product (brand products)	"I follow what you post!": The role of social media influencers' content characteristics in consumers' online brand-related activities (COBRAs)	M.L. Cheung et al. (2022)	The findings suggest that creativity and design quality are necessary conditions for, and significant predictors of, parasocial relationships and the consumers' desire as measurement consumers' psychological connections with endorsers.
5.	Consumer product (Halal food products)	The Effects of Social Media Influencer towards Factors of Muslim Millennial Generation's Attitude into Halal Food Product Purchase in Malaysia	Hainnuraqma Rahim, Mohamed Saladin Abdul Rasool, Nadiah Rus Liyana Rusli, Noorazlin Ani. (2022)	Trustworthiness and Social Media Influencer Expertise's can affect attitude of halal food products purchasing among Muslim Millennial in Malaysia who are deemed as an influential group of consumers.
6.	Consumer product (Food)	Impact of social media influencer on instagram user purchase intention: the food industry	R.Sorakhaibam, S.Loitongbam and S.S.Singh (2021)	The findings of the study indicated that social media influencers' trustworthiness, expertise and familiarity are positively significant with Instagram users to purchase intention.
7.	Automotive Industries	Hypothesising the Effect of Social Media Influencer Roles, Credibility and Advertising Values on Attitude and Brand Love	Nor Azri Sharizal Abu Bakar, Rosidah Musa (2020)	Advertising value for social media video would help the influencers to enhance their video content to attract more viewers hence, to influence them to buy the brand.

8.	Online Advertising Industries	Impact of Social Media in Online Advertisement Industry	Bernice Titilola Gbadeyan, Bamidele Samuel Arije (2021)	Influencers on social media do affect the consumer's behaviour towards a product or service, in relation to purchasing behaviour and reliability of the product or service. Advertising in general affects people's behaviour, to an extent is difficult to predict. The purchasing behaviour is affected, whether it is in relation to purchasing products that the consumer believes are necessary or unnecessary after seeing advertising on social media. The more influencers you follow the more likely you are to purchase a product or a service that is being advertised, whether it is a direct advertisement, sponsorship or co-operation with an organization.
9.	Fashion Industries	Factors of Virtual Influencer Marketing Influencing Generation Y Consumers' Purchase Intention in Malaysia	Yap Yoong Ruey Nurlida Binti Ismail (2021)	it is confirmed that the identified factors (Parasocial Interaction, Attractiveness and Trustworthiness) have highly significant effects in influencing Generation Y consumers' purchase intention in Malaysia. Attitude towards virtual influencer strongly mediates the relationship between Parasocial Interaction, Attractiveness and Trustworthiness and purchase intention.
10.	Fashion Industries	Conceptual Review of Social Influencer Marketing on Purchase Intention; Dynamics in Fashion Retail Industry	Thilina DK (2021)	Study's results showed that influencer credibility plays an important role as an informational source. If consumers tend to believe a fashion influencer is credible, trustworthy, has expertise about the field he/she associates herself/himself with, it is then considered to be appealing.

11.	Healthcare Industries	Social Media Influencers and The Dietary Choices Among University Students	Syahrudin Ahmad and Diandra Eleanor Bruno (2021)	Investigated the attitude and subjective norms of students on Social Media Influencers (SMIs) towards the behavioural intent on their dietary choices in accordance with the Theory of Reasoned Action. The finding shows that attitude of students towards the SMIs does not affect their daily dietary choices, however, the subjective norms in the students' life on the SMIs actually makes a difference in their eating habits. This indicates that the students live are impacted by them.
12.	Environmental	The effect of social media influencer attributes towards pro environmental intention	Yaacob, A., Gan, J. L., & Yusuf, S. (2021)	Source credibility, and the attractiveness of social media influencers has had a significant effect on attitudes and intentions in the advertising campaign. Attitude has a positive and significant effect on pro-environmental intention. Attitude to mediate between exogenous and endogenous.
13.	Tourism and hospitality	Impulse buying in hospitality: The role of content posted by social media influencers	Szymkowiak, A., Gaczek, P., & Padma, P. (2021)	Arousal in a SMI's presentation influenced purchase intention. Arousing content increased buying urge compared to non-stimulating content.
14.	Consumer behaviour	Social Media Influencers and its Impacts on Consumer Behavior: Malaysia	Frah Rukhsar Khan, Siew Poh Phung (2021)	Consumers see social media as an important tool in purchasing decisions, and social media influencers play an important role in that decision.
15.	General	Literature Review on the Factors Influencing the Usage of Social Media among Entrepreneurs in Malaysia	Bakar, N. and Zaini, A. (2022)	Based on the preliminary findings, it can be concluded that studying social media usage as a marketing tool can help entrepreneurs gain competitive edges, build relationship with customers and build business presence in the market. Future

			research should include entrepreneurs' intention as mediating variable and gender, age and experience as moderating variable to enhance the findings on the factors that influence social media usage and to improve the possibility of generalization.
16.	General	Fear of Missing Out and Consumer Happiness on Instagram: A Serial Mediation of Social Media Influencer-Related Activities	Jung Ah Lee, Laura F. Bright, and Matthew S. Eastin. (2021)
			SMI-related activities are positively associated with a consumer's happiness. Individuals higher in FoMO (fear of missing out) more frequently visited SMI's account profiles leading to more frequent purchasing of products recommended by SMIs, which in turn positively influenced happiness. To better elucidate why usage related to SMIs have such a contrasting effect, future research should compare how influencer-focused activities differ from general social media use.
17.	General	Social media influencer marketing: the moderating role of materialism	Kian Yeik Koay, Man Lai Cheung, Patrick Chin-Hooi Soh, Chai Wen Teoh. (2021)
			SMIs' trustworthiness and expertise are significant predictors of followers' purchase intention. The influence of attractiveness on purchase intention is greater when materialism is high.

Most of the articles reviewed in Table 2 utilised the quantitative approach of research methodology such as survey questionnaire. However, certain articles adopt the qualitative approach in the research like contents analysis. Wei et al. (2021) found that attractiveness is one of the important requirements for SMI to succeed other than trustworthiness on females' intention to purchase pet products. Moreover, Zak et al. (2020) discovered that SMI also works in the service industries. SMI's skills is crucial especially in dissemination of information to the public (Szymkowiak, Gaczek, and Padma, 2021). SMI such as food bloggers reviews on restaurant food can give impact on the intention on dining decision (Azim & Nair, 2021). In addition, the consumer's intention to purchase in a restaurant can be influenced by the familiarity of the source and the convenience of the information stated by SMI. Consumers increasingly rely on SMIs' content in their decision-making processes and 6.9 times more effective than traditional marketing activities in reaching consumers (Martínez-L'opez et al., 2020). Cheung et al. (2022) adopts a theory integration approach examines the impact of SMIs' content characteristics, as manifested by information, design, and technology quality, and creativity, on consumers' parasocial relationships and wishful

identification with SMLs. Thus, the study also investigates the subsequent effect on consumer engagement behaviour with the endorsed brand. The findings revealed that creativity and design quality are necessary conditions for, and significant predictors of, parasocial relationships and wishful identification. Furthermore, it highlights the importance of preparing creative content with good design layouts and technological features to drive consumers' psychological responses.

Additionally, Rahim et al. (2021) found that Trustworthiness and Social Media Influencer Expertise's can affect attitude of halal food products purchasing among Muslim Millennial in Malaysia. The result provides new perspectives where Halal logo itself may not be sufficient to convince Muslim consumers. Credibility, honesty, knowledge, and likeability are factors that may influence Millennial Muslim consumers' decisions to seek out and purchase halal food items and services. Furthermore, Koay et al. (2021) examines the impact of SMLs' credibility, as manifested by trustworthiness, attractiveness and expertise, along with the moderating effects of materialism, on followers' purchase intention. Drawing samples from Instagram users, they show that followers are more likely to purchase endorsed products if they consider the information about the SMLs' endorsements is dependable, honest, genuine, sincere, and trustworthy.

Khan et al. (2021) grasps the idea whether social media influencers are playing a major role in purchasing decisions since social media become generic to the straightforwardness of Internet affiliation, especially around the urban areas in Malaysia. Using Social Learning Theory, they found that consumers now prefer to get their information from their friends, family, and like to see product reviews from actual consumers for purchasing decisions compared to get information from the company's website. Bakar and Musa (2020) construct a conceptual framework that examines the effect of social media influencers and advertising value on attitude and brand love, specifically in the context of Malaysia's national automobile. The framework generated by the study extends the study on marketing strategy, which concentrated on social media influencer either in the term of 'user specific effect' or 'content effect'. They found that advertising value for social media video would assist influencers in enhancing their video content in order to attract more viewers and persuade them to purchase the brand.

In essence, SMI has transformed the global business landscape from the traditional to the digital, and it is now a well-known marketing tool among Malaysian companies due to its benefits. Past studies show that all the SMI studied are leveraging social networking channels as the platform for creating value and engaging with their customers. However, technological elements that enable the survival of SMI in the digital economy continue to be contested. SMI characteristics on their ability to deliver information and recommendations capable of influencing user decisions. Also, the skill of creating trust in users is an important characteristic of social influencers. Therefore, organisations in the digital age of the economy view it as a critical important way to sustain the business for a long time.

4.2 Discussion

All reviewed studies demonstrate the high impact of SMI on consumers' and followers' behaviour and decisions. From the reviews, the trends for businesses or brands to acquire SMI as representative of their brand is increasing. SMI is used in the business to enhance its marketing strategy. Marketing strategy within social media is an effective marketing channel to reach out to the target audience. However, from the review, no study liked between the SMI towards business perspective on strategy and performance is limited. It is suggested that future studies should develop a theoretical model that integrates SMI into any existing business model or other digital business models to understand how SMI works and complement the business. It is also acknowledged that SMI works differently, for instance, a company that sells sports products should choose a young influencer who is physically attractive. The business tends to select the most suitable influencer that will most effectively appeal to a particular target audience rather than adopting a one-size-fits-all approach. Hence, distinguishing between the criteria, type and ability of SMI need to be considered in future studies.

The growth of the digital economy among SMI has become more and more intense. Researchers should actively integrate a more inclusive and sustainable business model for SMI, while championing the growth of the local digital economy, especially in this post-pandemic environment that primarily utilizes digital technologies. Researchers should not only consider factors related to the characteristics of SM influencers, but also external factors such as political-legal and economic factors need to be studied. Therefore, the future findings will provide guidelines to entrepreneurs who wish to venture into the digital economy in Malaysia.

5. Conclusion

In the era of the digital economy, the trend of consumer behaviour and expectations has now changed especially in the usage of social media as a purchase platform. Nowadays, most people rely on their social media as a platform for making purchases. This research reviews the journal articles available in an online database specifically in Malaysia during the period of post Covid19 pandemic. The reviews indicate that the trends for businesses or brands to acquire SMI as representative of their brand are tremendously increasing. SMI has been used in many businesses including consumer products, fashion, healthcare, environmental and automotive. On top of that, academicians are also interested to research the fundamental aspect of SMI. From the trends, it can be said that the emergence and growth of SMI as one of the professions.

From an academic perspective, this research contributes to the significant literature on SMI. The finding also provides insight to the relevant government agency and regulators to have proper guidelines and policies to govern the SMI practices in Malaysia including the registry of SMI, code of conduct, specific regulation to the operation of SMI, income reporting and taxation and other aspects to avoid any wrongdoings and misconduct of SMI. Businesses also can start integrating SMI into their business model since the research found that SMI brings a positive impact to the business. All parties need to collaborate with SMI is needed to strengthen their role as well as support the national agenda to be a hub in the digital economy. However, future studies could consider comprehensively examining the impact of SMI on the business to suggest a suitable business model with the integration of SMI in today's business environment.

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Authors Contributions

The corresponding author contributes to the contents as well as the publication process. Meanwhile, the other authors also provide the content required.

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No potential conflict of interest was reported by the authors.

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FREE TOOLS FOR PARAPHRASING: TO USE OR NOT TO USE

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ABSTRACT

Paraphrasing is generally considered a challenging skill to acquire but it is a necessity in academic writing. With the advent of technology, a plethora of applications both free and premium are now available to authors looking for shortcuts. This article reports the findings of a small-scale study to assess a free paraphrasing tool, the QuillBot paraphraser and ChatGPT, the artificial intelligence assistant that can be used to paraphrase texts. A paragraph from Purdue Online Writing Lab was extracted to generate the paraphrases. Results indicate that QuillBot generally failed to paraphrase original texts appropriately as it basically substituted words with synonyms with few to no structural changes. Users of the tool would be considered as patchwriting or plagiarising although the original author was cited. Although ChatGPT was more impressive, it also had limitations such as providing incorrect citations and non-existent sources. Users should be aware of the pitfalls of relying on these free tools and instead write their own paraphrases to avoid the potential risk of committing academic dishonesty.

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1. Introduction

"Publish or perish" is a common maxim among academicians in institutions of higher education. Publishing has become obligatory in academia and the consequences of this system are serious. Academic hiring may depend on the number of published papers in indexed journals. The

number of publications helps academics to obtain promotions, grants and scholarships. Academic publishing is now a key performance indicator in many universities. It is therefore unsurprising that research has found that due to the immense pressure on faculty members to increase publication, they may resort to short cuts that result in potential plagiarism (Chandere et al, 2021).

To encourage more publications by the academic staff in the author's institution, several free applications including the QuillBot paraphraser were recommended. Some questions immediately came to mind: Should a paraphraser be used to ease the burden of academic publishing? Is the output generated by paraphrasing tools effective? Does using these tools constitute plagiarism?

It is acknowledged that paraphrasing is a challenging task particularly for those whose mother tongue is not English (Chen et al., 2015; Rogerson & McCarthy, 2017; Shi, 2012). Academic writing guides will state that a good paraphrase retains the meaning of the original text without copying words or structure. To produce a legitimate paraphrase, Massachusetts Institute of Technology (2020) requires a combination of strategies such as:

- Replacing words that are not generic with synonyms.
- Changing sentence structure.
- Changing voice from active to passive and vice versa.
- Changing clauses to phrases and vice versa.
- Changing word form.

Authors who are under constant pressure to publish may turn to the numerous free tools to rephrase their previously published work and submit the paraphrased version without any addition of new content (Roe & Perkins, 2022). In a recent case study using DiffChecker, a plagiarism detection tool, Ansoorge et al. (2021) confirmed that an academic researcher from an Indian college had published an article which was created with the help of a paraphrasing tool in a scientific journal. A possible explanation could be due to the minimum requirements for academics in India whereby an assistant professor needs at least two publications, seven papers for an associate professor while for a full professor, a minimum of ten published works (University Grants Commission, 2018). In their analysis of the historical background of academic integrity in the Indian academic system, Shahare and Roberts (2020) posit that dishonesty in academia is a result of the individual's aspirations as well as the pressure from their institution.

Paraphrasers may claim to help users create the best paraphrases, but are these tools really able to produce output that have sufficient morphological as well as structural changes? Do these tools produce high quality paraphrases? Are machine-paraphrased texts legitimate?

To answer the above questions, the author conducted a small-scale study to assess the quality of a widely used paraphrasing tool, QuillBot and the newly released generative artificial intelligence (AI) tool, ChatGPT.

2. Literature Review

Many authors, whether they are using English as a first language (L1), second language (L2) or foreign language (FL) find academic writing a challenging task (Lin & Morrison, 2021). As a result, some may resort to using the numerous writing tools available to make their work less daunting. For this kind of paraphrasing, Fyfe (2022) uses the term AI-powered plagiarism while Roe and Perkins (2022) prefer the term paraphrasing plagiarism. Technology-enabled paraphrasing requires little effort and unfortunately, research has shown that machine-generated plagiarism is often difficult to detect by the present plagiarism detection software (Foltýnek et al., 2020; Prentice & Kinden, 2018; Roe & Perkins, 2022; Rogerson & McCarthy, 2017). Therefore, these paraphrasing tools pose a serious threat to academic integrity.

In a systematic review of academic plagiarism detection, Foltýnek et al. (2019) noted that with the advances in information technology, plagiarism has become much easier. The plethora of paraphrase generators all advertise the ability to rephrase text in such a way that the output cannot be detected by anti-plagiarism detection tools (Brown & Hammond, 2022). In a research using the paraphraser SpinBot, Foltýnek et al. (2020) found that although Turnitin was able to detect completely machine-spun articles, it failed to identify paraphrasing plagiarism in an article if only a few paragraphs were spun. This finding was similar to the findings of Rogerson and McCarthy (2017) who had tested the effectiveness of Turnitin using a paragraph generated by Paraphrasing Tool and Go Paraphrase. They reported that Turnitin was unable to recognise the spun paragraph as plagiarised text.

In a more recent study which expanded on the work of Foltýnek et al. (2020), Wahle et al. (2023) also utilised SpinBot and an extra tool, SpinnerChief to spin texts. The researchers similarly used Turnitin and another tool, PlagScan to test the accuracy of these widely used tools in identifying paraphrased text. They found that although Turnitin performed better than PlagScan, it still failed to identify a large portion of texts plagiarised from theses. Fortunately, the researchers suggested that newer tools such as Longformer has performed better than both Turnitin and PlagScan in detecting machine-paraphrased texts.

Authors are probably resorting to paraphraseres to make their writing easier as general consensus among academics is that learning to produce effective paraphrases is challenging especially for non-native speakers of English. This is because paraphrasing is a skill that takes time to develop (Wette, 2017). Walsh Marr (2019) also agrees that paraphrasing is indeed a sophisticated skill that does not develop overnight. To produce successful paraphrases, Keck (2010) concludes that it is an "incredibly complex skill that requires a high level of grammatical competence and lexical knowledge" (p. 216). According to Hirvela and Du (2013), acquiring paraphrasing skill demands the learner to invest a significant amount of time as mastering the paraphrasing strategies require a "host of interconnected subskills" (p. 88) such as being able to convey the exact meaning and positioning/stance of the original author as well as retaining very few words or sentence structures from the source text (Walsh Marr, 2019).

Paraphrases that acknowledge the original author but are only modified superficially such as by deletion or substitution of words or rearrangements of syntactic structures may be flagged for plagiarism (Dong & Shi, 2021). Mori (2019) suggests that when paraphrasing, writers should first attempt to make larger structural and morphological changes before deciding on lexical changes. Structural changes involve changing voice (active to passive and vice versa) and re-ordering of clauses. Writers can also change discourse markers such as subordinating conjunctions (although, despite, if, because), conjunctive adverbs (however, nevertheless, thus, furthermore) and coordinating conjunctions (for, and, nor, but, or, yet, so). As for lexical changes, writers can try to change the parts of speech, for example, beauty (noun) becomes beautify (verb), beautiful (adjective) or beautifully (adjective).

Frequently, inexperienced writers attempting to paraphrase may end up with instances of patchwriting, a term defined by Howard (1993) as "copying from a source text and then deleting some words, altering grammatical structures, or plugging in one-for-one synonym substitutes" (p. 233). In another article, Howard (1995) opines that for writers developing academic writing skills, patchwriting is an important stage that they will go through. In a project led by Howard and Jamieson, the definition of "patchwriting" has been updated as "restating a phrase, clause, or one or more sentences while staying close to the language or syntax of the source" (Citation Project, n.d.). Although patchwriting is considered a necessary developmental stage for student writers, it not an acceptable practice for serious academic writing. According to Goldsmith (2011), patchwriting by academics is deemed an offence similar to plagiarism.

Unfortunately, what is an appropriate or inappropriate paraphrase is not clear-cut (Mori, 2018; Roe & Perkins, 2022; Sun, 2013). Some disciplines may accept two- to four- word strings but some may consider copying strings of three or more words even with citations as inappropriate reformulation of source information (Neumann et al., 2019). Shi (2004) defines acceptable paraphrasing as “no trace of direct text-matching of two or three consecutive words from source texts” (pp. 178–179) while Pecorari (2003) suggests that if there is a 40% text-match with a published work, it “puts the writers at risk of a plagiarism accusation” (p. 325). In their research using iThenticate, an anti-plagiarism software, Higgins et al. (2016) judged a sentence or paragraph plagiarised if 80% of the words were copied verbatim. They found that a majority of the plagiarized manuscripts submitted to an American medical journal were written by authors from countries where English was not an official language.

In a recent research involving Thai undergraduates, Bowen and Nanni (2021) reported that their respondents were confused between the difference between patchwriting and legitimate paraphrasing which could result in paraphrasing plagiarism. To help novice writers decide on the adequacy of their paraphrase, Keck (2006) divided paraphrases into four major types: near copy, minimal revision, moderate revision, and substantial revision. She proposed that a paraphrase that has 50% or more similarity with the original text should be considered plagiarised, 20–49% as minimal revision, and less than 19% an appropriate revision. She found that writers who use English as an L2 or FL produced more near copy paraphrases compared to native English writers. However, non-native English writers can make moderate and substantial revisions if they are taught how to do so. Research has shown that it is important for educators to not only teach paraphrasing strategies but also provide sufficient practices so that their learners can produce paraphrases that are deemed legitimate (Cumming et al., 2016).

The numerous paraphrasers which are also known as spinners or rewriters claim to help writers struggling with paraphrasing. However, prior research has found these tools wanting. For instance, in their study of six free paraphrasing tools including Paraphrasing Tool, Prentice and Kinden (2018) showed that these free paraphrasers may produce unidiomatic language as they mostly use word substitution and do not make many structural changes. This finding is in line with those of Rogerson and McCarthy (2017) who also tested the same paraphraser, Paraphrasing Tool and another tool, Go Paraphrase and found that the paraphrased texts were actually patchwriting. When compared with Keck’s (2006) four paraphrase types, namely, near copy, minimal revision, moderate revision, and substantial revision, the generated paraphrases would be categorised under minimal revision. They also discovered that these paraphrasers generated word salad–unintelligible strings of words (p. 9). Roe and Perkins (2022) warn that to make the output text more coherent, users may then proofread and edit it. They view such authors to have committed paraphrasing plagiarism, an academically dishonest act.

Besides depending on traditional paraphrasers, authors may also turn to the latest AI tool, ChatGPT to perform the challenging task of paraphrasing. Its creator and owner OpenAI offers free access but has announced a new premium version called ChatGPT Plus that is faster and accessible even during peak times of the day and gets priority to feature updates (<https://openai.com/blog/chatgpt-plus/>). As it is widely known, this software is capable of interacting in a conversational way. It boasts its ability to generate texts that are not only coherent but also natural sounding.

Although it was launched only recently, numerous research has been carried out. A worrying finding was that ChatGPT passed US medical licencing exams (Kung et al., 2022). However, in another study, the performance of ChatGPT was lower than that of Korean medical students (Huh, 2023a). A research in the Netherlands reported that the chatbot passed a national, high-stakes exam which tested English reading comprehension (de Winter, 2023).

Other researchers have utilised ChatGPT to publish academic papers. For instance, Zhai (2022) asked ChatGPT to write an academic paper and found that it was able to write a paper that demonstrated characteristics such as coherence and accuracy most of the time. The

generated essay was also found to be systematic and informative. Similarly, a respected academician generated a scholarly paper using ChatGPT and was surprised that although the chatbot was sometimes imperfect and problematic, the text was sophisticated. In ChatGPT's own words: "a well-trained language model like me can produce responses that are coherent, grammatically correct, and reasonably well-structured" (OpenAI's Assistant & Perlman, 2022, p. 13). However, in their research, Kutela et al. (2023) found that ChatGPT could not be used to generate a complete manuscript for peer-reviewed journals.

Recently, several authors included ChatGPT as co-authors in their academic papers such as Andrew Perlman, Dean and Professor of Law, Suffolk University Law School (OpenAI's Assistant & Perlman, 2022). Another law professor at the University of Kentucky College of Law had included ChatGPT as co-author in his submission to a law journal but the forthcoming paper will not list the chatbot as co-author (Frye, 2022). Kitamura (2023) opined that to be considered an author, one must first agree to be accountable for all aspects of the paper which ChatGPT is unable to do. Huh (2023b) concurs, noting that as ChatGPT cannot take legal responsibility for its writing, it cannot be listed as author or co-author.

Similar to the issue concerning the use of paraphrasers and academic honesty, several studies have focused on the ethical issue of using ChatGPT to prepare manuscripts for publication. Some researchers who have raised their concern regarding this issue are Gao et al. (2022), Jabotinsky and Sarel (2022), McKee and Noever (2022), and Qadir (2022). In a recent research from the Philippines, Ventayen (2023) prompted ChatGPT to generate three research papers using the same title of previously published work in indexed journals. Running the generated papers through Ouriginal, an anti-plagiarism detector, results showed that the similarity index was between 0 to 10% which was below the reporting threshold of most plagiarism detection software. He then paraphrased the generated texts with the QuillBot paraphraser and the similarity index dropped to zero. This indicates that the present anti-plagiarism detectors are unable to distinguish between human-written and AI-generated text.

In brief, previous research shows that paraphrasers do not usually produce effective paraphrases. The machine-generated texts basically contain synonyms with few structural alterations, thus making the paraphrases too close to the original source. Users of such tools end up patchwriting which may result in charges of academic dishonesty. On the other hand, based on the results of recent studies, ChatGPT is capable of producing plagiarised texts that are difficult to be detected by current plagiarism detection tools. Thus, the use of the chatbot for academic writing has raised ethical considerations among the academic community.

This small-scale study aims to test the effectiveness of the free QuillBot paraphraser, a widely used tool. The newly released AI-powered chatbot, ChatGPT, which is currently free, was also tested to compare its ability to generate successful paraphrases.

3. Methodology

A short paragraph from Purdue Online Writing Lab (OWL) (2022) was used as a sample to test the two free tools for paraphrasing, QuillBot (<https://quillbot.com/>) and ChatGPT (<https://chat.openai.com/chat>). The suggested legitimate paraphrase and a plagiarised version provided by OWL were used as comparisons with the output generated by the respective tools. It should be noted that to avoid plagiarism, a citation should be provided for a paraphrase. However, the citation was excluded in the original text used for testing purposes as the author was only interested in evaluating the effectiveness of the generated paraphrases and not the accuracy of citations.

Original Text from Purdue OWL

Students frequently overuse direct quotation in taking notes, and as a result they overuse quotations in the final [research] paper. Probably only about 10% of your final manuscript should appear as directly quoted matter. Therefore, you should strive to limit the amount of exact transcribing of source materials while taking notes.

Suggested Paraphrase by Purdue OWL

In research papers, students often quote excessively, failing to keep quoted material down to a desirable level. Since the problem usually originates during note taking, it is essential to minimize the material recorded verbatim.

Sample Plagiarised text by Purdue OWL

Students often use too many direct quotations when they take notes, resulting in too many of them in the final research paper. In fact, probably only about 10% of the final copy should consist of directly quoted material. So it is important to limit the amount of source material copied while taking notes.

The QuillBot paraphraser was chosen to be tested not just because it was recommended by the author's institution, but because it is a highly recommended tool. QuillBot often appears among the top suggested software via a quick Google search using the term "best free paraphrasing tool".

Users can move the synonym slider to customise the generated text. Fewer changes will produce a more accurate rephrase while more changes will generate a more creative text. As there is also a built-in thesaurus, users can click on any word in the generated text and select the best word from the list of suggested synonyms.

However, the freemium version has a meagre 125-word limit per paraphrase and offers only two modes: standard and fluency. According to its website, paraphrasing using the standard mode means the tool "provides a middle ground between changing the input text and keeping its meaning" while the fluency mode "improves language and fixes grammatical errors." As the paraphraser allows users to generate a new output if necessary, all the various paraphrased versions were carefully copy pasted and checked for appropriateness.

ChatGPT was also chosen because it is touted as a tool that has many capabilities including paraphrasing passages. The author prompted the chatbot to paraphrase the original text in various ways. All paraphrased texts generated by the chatbot were carefully copied and analysed for acceptability.

4. Results

The original text taken from Purdue OWL was paraphrased using the chosen tools, QuillBot and ChatGPT. The machine-generated texts were carefully analysed to ascertain the quality of these tools by comparing them with the suggested paraphrase and the plagiarised version provided by Purdue OWL.

4.1 The QuillBot Paraphraser

Although the free plan only allows users to use two modes, namely, standard and fluent, users can rewrite the original text several times. Therefore, the various versions of the generated texts

are shown in Table 1. The outputs in both modes used the default synonym setting. The changes are indicated in **bold**.

Table 1
Paraphrased Texts by QuillBot Paraphraser

QuillBot: Standard Mode	
Version 1	When taking notes , students frequently overuse direct quoting, which causes them to overuse quotations in their final [research] paper. Only 10% to 15% of your final essay should contain explicitly quoted passages, ideally. As a result, while taking notes , you should try to restrict the quantity of precise transcription of the sources .
Version 2	When taking notes , students frequently overuse direct quotation, and as a result, their final [research] work has excessive quotations. Only around 10% of your finished manuscript should contain directly quoted material. As a result , you should make an effort to reduce the quantity of precise transcription of sources while taking notes.
Version 3	In their final [research] paper, students often misuse direct quotations because they usually overuse them when taking notes. Directly quoted material should probably only make up roughly 10% of your final manuscript. As a result, while taking notes, try to avoid doing too much precise transcription of the sources .
Version 4	Students usually overuse direct quotation when taking notes, and as a result, they overdo quotations in the final [research] paper. Only approximately 10% of your final essay should contain explicitly quoted material. As a result, while taking notes , you should try to minimise the quantity of precise transcription of the sources .
QuillBot: Fluency Mode	
Version 1	Students frequently overuse direct quotation when taking notes, which leads to an overuse of quotations in the final [research] paper. Only about 10% of your final manuscript should contain directly quoted material. As a result , you should try to limit the amount of exact transcription of source materials you do while taking notes.
Version 2	Students frequently overuse direct quotation when taking notes, and as a result, they overuse quotations in the final [research] paper. Only about 10% of your final manuscript should be directly quoted. As a result , you should try to limit the amount of exact transcribing of source materials while taking notes.
Version 3	Students frequently overuse direct quotation when taking notes, resulting in an overuse of quotations in the final [research] paper. Approximately 10% of your final manuscript should be directly quoted. As a result, while taking notes , you should try to limit the amount of exact transcription of source materials.

A detailed analysis of Table 1 shows that although QuillBot replaces more words with synonyms in the standard mode than in the fluency mode, the output is still too similar to the original passage. In all the four versions in the standard mode, the phrase "exact transcribing" in the last sentence was replaced with **precise transcription** which sounded odd. The fluency mode, however, suggested **exact transcription** which was more natural sounding in versions 1 and 3.

Furthermore, in the standard mode versions 1 and 2, QuillBot altered the sentence structure of the first and the last sentence of the original version. The phrase "in taking notes" which was in the middle of the original first sentence was moved to the beginning of the paraphrased sentence and the preposition *in* was replaced with **when**, a conjunction:

When taking notes, students frequently overuse ...

The phrase "while taking notes", originally placed at the end of the last sentence, was moved to the front in standard mode versions 1, 3 and 4 with no lexical change.

As a result, **while taking notes** ...

It is important to note that version 1 of the standard mode had included additional information not found in the original text, a practice which is not allowed in paraphrasing.

Original sentence:

Probably only about 10% of your final manuscript should appear ...

Paraphrased sentence:

Only 10% **to 15%** of your final essay should contain

When compared with the standard mode, the fluency mode made minimal changes. It generated output that contained very minor word substitutions especially in version 2. Moreover, no syntactic change was made in versions 1 and 2. In version 3, the phrase "while taking notes" originally located at the end of the last sentence was moved to the beginning of the last sentence in the paraphrase:

As a result, **while taking notes**, ...

In short, these machine-generated paraphrases merely substituted synonyms with few to no changes in syntactic structures. The paraphrases in fluency mode in particular were clear examples of poor paraphrasing.

4.2 ChatGPT

The author prompted ChatGPT to paraphrase the original paragraph in several ways. The responses to each prompt are presented in Table 2. Any original words or phrases that were not altered are in **italics**. A close analysis of the paraphrases found that this chatbot had the ability to generate fluent, natural sounding texts and according to the context requested.

Table 2

Texts generated by ChatGPT in Response to Author's Prompts

Prompt 1:

Response:

Paraphrase the text.

Many students often rely too heavily on direct quotations when taking

notes, leading to excessive use of quotes in their final research paper. It's recommended that only around 10% of the final document should consist of direct quotes. To avoid this, it's important to minimize the amount of verbatim copying from source materials while making notes.

Prompt 2:

Paraphrase the text into academic English.

Response:

The frequent overreliance on **direct quotations in** note-taking by **students** is a prevalent issue that can **result** in an overrepresentation of such quotes in the **final research paper**. It is advised **to limit** the use of direct quotes in the **final** manuscript to approximately **10% of** the total content. Thus, it is imperative for students to **strive** towards minimizing **the** extent of verbatim transcription of **source materials** during the note-taking process.

Prompt 3:

Paraphrase for the text a journal publication.

Response:

The overutilization of **direct quotations** in note-taking by **students** is a common phenomenon that can **result** in an overabundance of such quotes in the **final research paper**. It is advisable **to** restrict the usage of direct quotes in the **final manuscript** to around **10% of** the total content. In order to meet this objective, it is important for students **to minimize the** extent of verbatim transcription of **source materials** during the note-taking phase.

Prompt 4:

Paraphrase the text for academic purpose.

Response: Version 1

It is commonly observed that **students** have a tendency to excessively utilize **direct quotations** when **taking notes** (Smith, 2020). This overreliance on direct quotes can **result** in a disproportionate representation of such quotes **in the final research paper**, where it is advised to restrict their usage to approximately **10% of** the total **manuscript** (Jones, 2021). To overcome this challenge, students **should** make an effort to minimize **the** extent of verbatim transcription from **source materials** during the note-taking process (Brown, 2019).

References:

Brown, J. (2019). Effective note-taking for academic success. New York: Academic Press.

Jones, A. (2021). The impact of note-taking on academic performance. Journal of Education, 44(2), 123-131. <https://doi.org/10.1177/0013164420970219>

Smith, S. (2020). Overcoming the challenges of research writing. Journal of Research, 33(1), 56-63. <https://doi.org/10.1177/0013164420970219>

Response : Version 2

The excessive use of **direct quotations** in note-taking is a common

problem among **students**, which ultimately leads to an overabundance of **quotations in their final research papers**. To address this issue, it is suggested that **only about 10% of the final manuscript should** consist of direct quotes. As a result, students are encouraged **to minimize the amount of** verbatim transcription **of source materials** when **taking notes**.

Prompt 5:

Paraphrase the text for journal publication and include APA 7th edition citation.

Response: Version 1

The frequent overreliance on **direct quotations** in note-taking by **students** is a prevalent issue (Smith, 2020). This practice often leads to an excessive representation of such quotes **in the final research paper**, where it is suggested to limit the use of direct quotes to roughly **10% of** the total content (Jones, 2021). To address this issue, students **should strive to** reduce **the** extent of verbatim transcription of **source materials while taking notes** (Brown, 2019).

References:

Brown, J. (2019). Effective note-taking for academic success. New York: Academic Press.

Jones, A. (2021). The impact of note-taking on academic performance. Journal of Education, 44(2), 123-131. <https://doi.org/10.1177/0013164420970219>

Smith, S. (2020). Overcoming the challenges of research writing. Journal of Research, 33(1), 56-63. <https://doi.org/10.1177/0013164420970219>

Response : Version 2

According to research, **students** often rely too heavily on **direct quotations** when **taking notes**, leading to an **overuse** of **quotations in their final research papers**. In fact, it is suggested that **only about 10% of the final manuscript should** consist of direct quotations. To avoid this issue, it is recommended that students **limit** their **exact** transcription of **source materials while** note-taking.

APA 7th edition citation:

Hacker, D. (2011). Research and Documentation in the Electronic Age (5th ed.). Boston, MA: Bedford/St. Martin's.

Prompt 1: Paraphrase the text.

ChatGPT generated a paraphrase using natural language that was easy to understand. It even used a contraction, "it's" to make the response sound conversational. However, this would make the paraphrase unsuitable for academic purposes. There was evidence of word substitution but no changes in sentence structures.

Prompt 2: Paraphrase the text into academic English.

In response to the above prompt, ChatGPT generated a text that had a formal tone with more nominalisations and the use of passive voice.

An example of nominalisation is found in the first paraphrased sentence:

The frequent **overreliance** on direct quotations in note-taking by students is a prevalent issue that can result in an **overrepresentation** of such quotes in the final research paper.

The original compound sentence was transformed into a more complex sentence:

The frequent overreliance on direct quotations in note-taking by students is a prevalent issue that can result in an overrepresentation of such quotes in the final research paper.

The last sentence was altered to make it sound more academic by using advanced vocabulary. It also avoided using the second-person pronoun "you." The original sentence (17 words) was expanded to become much longer (22 words):

Thus, it is **imperative** for students to strive towards **minimizing the extent of verbatim transcription** of source materials during the note-taking process.

Prompt 3: Paraphrase the text for a journal publication.

The above prompt resulted in ChatGPT generating a text that contained nominalisations which is common in academic writing. For example, the first sentence had two instances of nominalisation:

The **overutilization** of direct quotations in note-taking by students is a common phenomenon that can result in an **overabundance** of such quotes in the final research paper.

Similar to the paraphrases for the earlier prompts, very few original words were retained. For the paraphrased middle sentence, the original phrase "Probably only about 10% of your final manuscript" was moved from the front to the back. Although the middle and last sentences of the paraphrase contained few nominalisations, they were still much longer (46 words) than the original (30 words) and were more difficult to read:

It is advisable to restrict the usage of direct quotes in the final manuscript to around 10% of the total content. In order to meet this objective, it is important for students to minimize the extent of verbatim transcription of source materials during the note-taking phase.

Prompt 4: Paraphrase the text for academic purpose.

When prompted to paraphrase the text for academic purpose, the chatbot actually included in-text citations together with matching references for version 1. However, the sources were incorrect as the original text was written by Lester (1976) and not the three cited sources. The sources were made up by ChatGPT as the book by Brown (2019) did not exist and the DOIs provided in version 1 were not found in the DOI system (<https://www.doi.org/>).

However, it is interesting to note that there were no citations in version 2 and it was longer with 66 words whereas the original text contained only 51 words. For example, the first sentence in the original excerpt was a compound sentence (20 words) but was transformed into a more complex one with 27 words:

The excessive use of direct quotations in note-taking is a common problem among students, which ultimately leads to an overabundance of quotations in their final research papers.

ChatGPT also made syntactic changes by breaking up and combining sentences. For instance, in version 1, the first paraphrased sentence was based on the first half of the original first sentence, "Students frequently overuse direct quotation in taking notes, and as a result ...". The transformed sentence is:

It is commonly observed that students have a tendency to excessively utilize direct quotations when taking notes (Smith, 2020).

The second paraphrased sentence in version 1 was a combination of the second half of the original first sentence "and as a result they overuse quotations in the final [research] paper." and the original second sentence, "Probably only about 10% of your final manuscript should appear as directly quoted matter." The paraphrased text is shown below:

This overreliance on direct quotes can result in a disproportionate representation of such quotes in the final research paper, where it is advised to restrict their usage to approximately 10% of the total manuscript (Jones, 2021).

The strategies of breaking up and combining sentences to generate a paraphrase demonstrated the ability of ChatGPT to produce sophisticated text suitable for academic purposes. In comparison, QuillBot did not produce such advanced structures.

Prompt 5: Paraphrase the text for journal publication and include APA 7th edition citation.

In response to the last query, ChatGPT version 1 contained nominalisations (overreliance, excessive representation) and advanced vocabulary (prevalent, verbatim transcription) appropriate for academic publication. There was also evidence of moving phrases and combining sentences, strategies commonly recommended for paraphrasing.

It is surprising to note that ChatGPT added information not found in the original text to make the paraphrase in version 2 sound more academic. The first sentence of the paraphrase has an additional phrase as highlighted in bold below:

According to research, students often rely too heavily ...

As expected, the citations provided were wrong for both versions. For version 2, there were no in-text citations but a real though incorrect source, Hacker (2011) was provided as a reference whereas the original text should be cited as follows:

In-text citation: Lester (1976, pp. 46-47)

Reference:

Lester, J. D. (1976). *Writing research papers: A complete guide* (2nd ed.). Scott, Foresman and Company.

The findings as presented in Table 2 indicate that ChatGPT is capable of generating different paraphrases according to the requested contexts. However, it may add additional information

and provide fake or incorrect citations particularly for paraphrases generated for academic or publication purposes. These results show that ChatGPT can be inaccurate at paraphrasing.

5. Discussion

The aim of the current small-scale study was to assess the quality of two free tools, QuillBot and ChatGPT in generating paraphrases. It was found that the quality of paraphrases generated by QuillBot were unsatisfactory. The paraphrases did not meet the standard expected of effective paraphrases.

Overall, the quality of the QuillBot paraphraser was unimpressive. The paraphrases were too close to the original paragraph. Paraphrases were inadequate with only simple word level modifications – usually by substituting words with synonyms with little alteration of the syntactical structures. These findings echo those of previous research (Roe & Perkins, 2022; Rogerson & McCarthy, 2017; Wahle et al., 2023).

The machine-paraphrased texts by QuillBot is what Keck (2010) calls 'close paraphrasing'. Howard (1995, 1999) used the term 'patchwriting' to describe this form of unacceptable superficial paraphrasing. According to Prentice and Kinden (2018), such paraphrases are "unidiomatic at best, incomprehensible at worst" (p. 6). More worrying is that free paraphraser such as QuillBot generate texts that may even cause users to be accused of plagiarising their sources (Roe & Perkins, 2022; Rogerson & McCarthy, 2017). Therefore, the machine-paraphrased texts should be considered as unsuccessful paraphrases and can be construed as plagiarism even with the inclusion of a citation (Dong & Shi, 2021).

Besides patchwriting, QuillBot actually added extra information in paraphrases. Student writers are taught that when paraphrasing, they should never add extra information or their personal opinion in it. According to Purdue OWL (2022), a paraphrase "accurately expresses all the essential information in a new form." This means that users of paraphraser such as QuillBot should check the output carefully for accuracy and not blindly copy and paste the machine-paraphrased text.

On the other hand, ChatGPT emerged as the better performer with its advanced capabilities to generate natural sounding texts. It is capable of breaking up and combining sentences, which unfortunately are not available in the QuillBot free paraphraser. However, it must be pointed out that ChatGPT is not perfect and had flaws such as providing sources which were incorrect or even non-existent. This finding is not completely unexpected as Jabotinsky and Sarel (2022) reported that the chatbot gave some references that could not be located. Qadir (2022) similarly found that ChatGPT provided a made-up article with a non-functioning URL. This is not unexpected because according to the ChatGPT website, it can sometimes produce responses that sound plausible but are incorrect or make no practical sense (<https://openai.com/blog/chatgpt/>). Therefore, users would be wise to check the paraphrases for accuracy.

As ChatGPT is capable of providing different answers using different wordings to the same question, this will probably make the paraphrases extremely difficult for present text-matching software to detect. However, according to Turnitin, it has successfully developed state-of-the-art technology that can detect AI-assisted writing and paraphrasing by tools such as ChatGPT (<https://www.turnitin.com/solutions/ai-writing>). Even OpenAI, the creator of ChatGPT is working on its own detector, AI Text Classifier, to distinguish between human-written and AI-generated texts (<https://platform.openai.com/ai-text-classifier>).

To summarise, the results of the current study suggest that if academics rely on the available tools to paraphrase, they should be mindful of the shortcomings which may possibly lead to breaching principles of academic integrity. Roe and Perkins (2022) opine that the increasing use of such tools are a threat to academic integrity. If these tools are utilised by academicians, they are considered dishonest because they have produced work which is not

original but generated by a machine. It is a form of plagiarism and unethical even with source attribution.

6. Conclusion

The present small-scale study reviewed two free tools, QuillBot and ChatGPT for their ability to paraphrase texts. Comparing the generated paraphrases by both tools, ChatGPT was more impressive but it had certain limitations such as citing wrong or fictitious sources.

The study highlights the fact that users should be aware of the unsatisfactory quality of the QuillBot paraphraser. Although grammatically correct and meaning was retained, QuillBot failed to generate appropriate paraphrases. The outputs were usually superficial modifications such as replacing content words with synonyms. There were few addition or deletion of words and had hardly any reformation such as structural changes. A successful paraphrase requires more than just some lexical modifications and minimal syntactic changes. Otherwise it will be labelled as plagiarised even with source attribution (Dong & Shi, 2021).

Using ineffective paraphrases generated by tools such as QuillBot is considered patchwriting or facilitated plagiarism (Rogerson & McCarthy, 2017). Instead of relying on paraphrasers which may lead to the risk of potential plagiarism, authors should make use of the tools available in Microsoft Word such as the synonym finder, built-in thesaurus, dictionary as well as spelling and grammar checker. In their research, Bailey and Withers (2018) reported that their university students found these tools helpful in completing their paraphrasing task. Authors could also use the tool, *Just The Word* (<http://www.just-the-word.com/>) to help choose the right words and phrases as well as collocations. This free tool is a corpus-based online resource that is capable of correcting unidiomatic phrases. Human-written paraphrases may require more time and effort but at least paraphrasing plagiarism will be minimised if done correctly.

In closing, this study provides evidence that the current free tools for paraphrasing are not dependable. Although academicians are pressured to continually publish, they should not depend on such tools as they are not presenting original work. Authors who resort to unethical practices such as using machine paraphrases would be engaging in academic dishonesty even with the inclusion of a citation. According to Rogerson and McCarthy (2017), "The capacity of students and academics to rephrase, frame and restate the ideas and intentions of original authors themselves with appropriate acknowledgements of sources is fundamental to the principles of academic integrity and personal development" (p.12).

With the advent of AI tools such as ChatGPT, editors and paper reviewers will be more cognisant of the use of machine-generated texts in the manuscripts submitted for publication because research has found that even the leading text-matching software, Turnitin and human detectors are not efficient at detecting paragraphs which had undergone machine-paraphrasing (Foltýnek et al., 2020; Wahle et al., 2023). As ChatGPT or newer tools may be utilised to ease the time-consuming work of writing papers for publication, editorial boards will endeavour to publish papers that are free from machine-generated texts. By using both human and newer AI content detectors, the likelihood of detecting submissions containing machine paraphrases will be much higher, so academicians should publish with integrity or rue the day they perish.

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TRAINING, REWARDS, AND APPRAISAL SYSTEM: PREDECESSORS AND INFLUENCES ON JOB PERFORMANCE

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ABSTRACT

Civil servants are resources that help the government to carry out administration and achieve goals. Quality human capital plays an essential role in determining the direction and performance of civil servants. This study examines the direct relationship between training, rewards, appraisal system, and job performance. The study was conducted on 250 employees in the support and professional group at the Immigration Department of Malaysia. The final valid of 208 employees' responses were analyzed based on reliability analysis, normality test, descriptive analysis, correlation analysis, and regression analysis using the Statistical Package for Social Sciences. Through correlation analysis, training, rewards, and appraisal system were highly correlated with job performance. Linear regression analysis also shows that rewards and appraisal systems explain a high variance in job performance. This finding implies that employees with sufficient training, rewards, and receiving a comprehensive appraisal system are more motivated to achieve organizational goals because they will always be enthusiastic and dedicated to completing the tasks. These characteristics enable the employees to give the best service to the community efficiently and effectively. This study is expected to enlighten the relationship between human resource management factors and job performance in Malaysia's public service context.

1. Introduction

The Malaysian Immigration Department is one of the agencies under the Ministry of Home Affairs. It provides services to Malaysian citizens, permanent residents, and foreigners visiting Malaysia. The Malaysian Immigration Department is one of the prominent government agencies in Malaysia. However, lately, there seems to be a mixed reaction of the public to the employees' work performance at the Malaysian Immigration Department. Immigration Malaysia has a long history of corruption, which allows the threat of terrorism and human trafficking to become a significant problem for the country. Despite the Malaysian government's desire to promote Malaysia's image as a progressive country, widespread abuse of immigration controls since at least the 2000s has tarnished that image. In 2017, former Minister of Melaka, Datuk Seri Utama Ir. Ts. Hj. Idris Hj. Haron named the Immigration Department in Melaka the state's most corrupt public service department (Murali, March 8, 2017). After being promoted as head of the Malaysian Immigration Department in 2017, Datuk Seri Mustafar Ali revealed that an internal audit and investigation by the Malaysian Anti-Corruption Commission (MACC) had revealed a passport fraud scheme carried out by officials in Selangor since 2014 (MalayMail, January 11, 2017). This situation attracts the interest of researchers to do an in-depth study about this matter. This aims to answer all the ambiguities about the employees' work performance at the Malaysian Immigration Department. This study will give importance and contribution to three parties involved in this study, namely the organization, employees, and interests in the academic field.

Organizations should optimize their human resources because they are the most critical factor for an organization. These human resources can be the driving force of other resources (Rigby & Ryan, 2018). The success of an organization is determined by human resource utilization activities that have quality and quantity and play an essential role in the organization's operational functions (Diamantidis & Chatzoglou, 2018). Realizing the importance of the workforce for the organization, the organization must pay special attention to its employees. The organization needs to understand and know the needs of its employees because it is one of the reasons for improving job performance (Rigby & Ryan, 2018). Employee performance is defined as the ability of an employee to achieve the standards set in the execution of tasks with accuracy, completeness, efficiency, and speed (Buil, Martínez, & Matute, 2019; Darvishmotevali & Ali, 2020). Among the factors affecting work performance are training, rewards, appraisal systems, stress, work environment, and workload (Chamberlin, Newton, & LePine, 2018; Manresa, Bikfalvi, & Simon, 2019; Rudman, 2020). Happy employees are productive employees who are satisfied with their jobs and will perform better. Good work performance can increase organizational productivity, directly increasing the national economy. Vice versa, less motivated employees will cause weaknesses in the administrative system of an organization due to a lack of commitment. One aspect of improving job performance is through training. According to Lee et al. (2020), training refers to aspects that are run to improve employee performance and enable the organization to achieve the objectives and goals that have been set. Training can be defined as planned systematic activities, and the results enable the development of employees' skills and knowledge in performing their duties more effectively (Manresa, Bikfalvi, & Simon, 2019; Tamsah, Yusriadi, & Farida, 2020). In addition, training can also improve employees' ability to think creatively to make good decisions (Erath, DiGennaro Reed, & Blackman, 2021).

Another way to optimize employee performance is by giving rewards in the form of incentives and work motivation. Incentives are deliberately given to employees so that a more excellent work spirit arises in them to improve work performance and increase productivity (Koo et al., 2020). Providing incentives in an organization plays a vital role because it is believed to overcome various problems in the workplace, such as low work motivation and absenteeism (Martono, Khoiruddin, & Wulansari, 2018). For an organization, incentives are expected to improve employee performance, work productivity, loyalty, discipline, and leadership quality (Puni, Mohammed, & Asamoah, 2018; Zafar et al., 2020). Employees could increase their income by providing incentives (Zafar et al., 2020). In addition to the incentive factor, a fair appraisal

system is needed to monitor the employee's achievements and progress and to encourage and support sustainable human resources development (Iqbal et al., 2019). The primary purpose of the appraisal system is as follows: (1) To monitor the organization as a whole, (2) To encourage and support continuous development, and (3) To encourage and motivate employees to continue to develop their skills (El Haddad, Karkoulia, & Nehme, 2018; Mohamad & Mohamad, 2022). The organization must have a proper compensation system. By assessing work performance, it will be known how well the employees have carried out the tasks assigned so that the organization can determine the appropriate remuneration for the work performance (Memon et al., 2019; Rubin & Edwards, 2020). The principle of "The right man in the right place" must be fulfilled so that the organization can run efficiently and effectively. Therefore, this study examined the influence of training, rewards, and appraisal system on Malaysian support and professional group job performance at the Immigration Department of Malaysia. This study is significant in delivering new insights into current literature and the theoretical context of human resource management. Despite many studies on job performance, most studies have been predominantly on police officers or general samples (e.g., Zainal et al., 2020), with a study that focuses on immigration officers often being neglected. Most past studies have been considered obsolete, and current research is needed to examine the determinant factors that influence the job performance of Malaysian immigration officers. On this premise, the purpose of the present study was to develop and determine the existence of training, rewards, and a comprehensive appraisal system for Malaysian immigration officers by evaluating its impact on job performance.

2. Literature Review

Theoretical Foundation: Public Service Motivation (PSM)

Human resources are the most important resources available and provide a competitive advantage to the organization. Humans can provide a competitive advantage when human resources are unique and have competencies and capabilities that are difficult to imitate (Barney, 1991). Researchers in the field of management have introduced the theory of public service motivation (PSM), which emphasizes practical human resources to reduce operating costs through developing employee competence (Mohamad & Mohamad, 2022). Organizations focusing on PSM, called High-Performance Work Systems (HPWS), will support employee development and enable effective organizational strategy (Boselie, Van Harten, & Veld, 2021). Based on this theory, the policy, and activities of human resources, which include recruitment and selection of employees, performance appraisal, training and development of employees, and the awarding of rewards based on performance, are necessary to achieve effectiveness in the PSM system (Chamberlin, Newton, & LePine, 2018; Manresa, Bikfalvi, & Simon, 2019; Rudman, 2020). The relationship between an effective PSM system and employee outcomes and organizational performance can be explained through the PSM model (Figure 1). According to this model, PSM best practices can improve employee performance and subsequently be able to improve organizational performance. According to Boselie, Van Harten, and Veld (2021), PSM activity that is carried out effectively can influence employees in terms of increasing motivation, job satisfaction, and commitment and reduce employee turnover and conflict in the organization. Applying this theory, training, rewards, and appraisal system act as PSM's main components, which can improve employee and organizational performance.

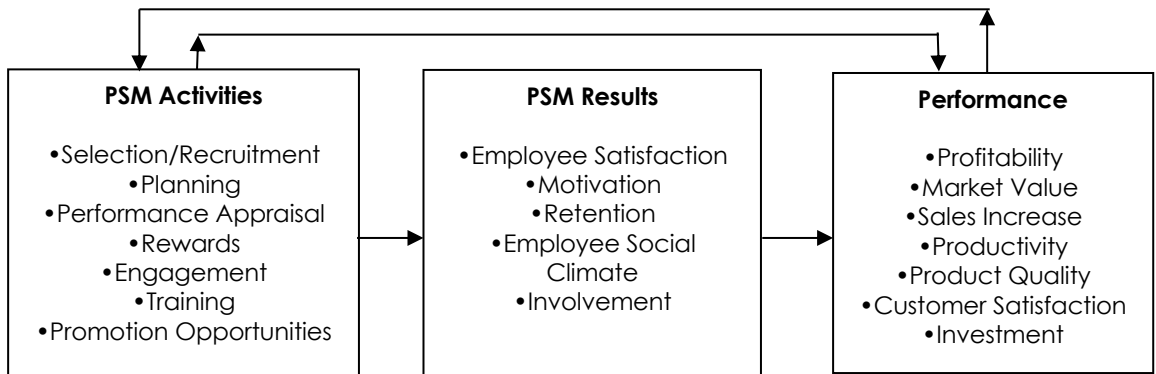


Figure 1. PSM Model that explains the relationship between PSM Activities and Employee Outcomes and Organizational Performance

Job Performance

Quality human capital plays a vital role in determining the direction of civil servants and ensuring efficient management. Therefore, the public sector must be efficient in ensuring the delivery of quality services. According to Darvishmotevali and Ali (2020), job performance is a set of behaviors relevant to achieving organizational goals. Job performance is a process in which managers ensure that employees' activities and productivity align with the organization's goals (Jiang, Siponen, & Tsohou, 2021). Borman and Motowidlo (1997) proposed two critical components of job performance: task performance and contextual performance. These two performance components can be used to differentiate behavior at work. Task performance refers to a behavior known as part of work and contributes directly to the particular purpose of the organization. In contrast, contextual performance represents behavior that does not directly support a goal in a particular organization. Instead, it generates a social and psychological environment in which organizational goals can be achieved more effectively. In the public sector, administrators have suggested a work culture based on performance using Key Performance Indicators (KPI) applied in public services to improve the quality-of-service delivery (Loga & Chand, 2019). In line with the agency's vision, mission, and function, every organization needs to measure service performance to ensure that all services are delivered to customers. This, in turn, can provide a clear picture of the organization's performance. It has been proven in past studies that job-related factors such as salary, working hours, promotion opportunities, appraisal system, training, and job security affect job performance (Chamberlin, Newton, & LePine, 2018; Manresa, Bikfalvi, & Simon, 2019; Rudman, 2020).

Training & Job Performance

Training is the primary domain to align employees' duties in the organization. Employees passionate about implementing tasks will take the training aspects included thoughtfully, which boosts work commitment and self-knowledge (Lee et al., 2020). Training and development are one of the approaches to generating human capital (Manresa, Bikfalvi, & Simon, 2019). This is very important to equip employees with the necessary skills to face all possibilities, such as technological changes. Training and development are designed for employees and organizational development. The training improves the knowledge and skills of employees for better performance, while development is an effort to shape attitudes and behavior. Training and development focus on understanding, knowledge, technique, and practice (Tamsah,

Yusriadi, & Farida, 2020). With proper training, new and existing employees receive the information and skills needed to perform their duties to their maximum potential (Erath, DiGennaro Reed, & Blackman, 2021). The training module must match the characteristics of the employees and the requirements of the current field of work so that the knowledge after the training (output) can be applied to carry out the work (Hildebrand, 2018). On the other hand, if the training is unrelated or impractical, it will have a negative effect because employees cannot contribute to the organization. Therefore, we posited the following hypothesis:

H1: There is a significant relationship between training and job performance of employees in the support and professional group at the Immigration Department of Malaysia

Rewards & Job Performance

Rewards are one of the critical factors that can contribute to an organization's effectiveness and positively affect individuals' attitudes and behavior (Koo et al., 2020). In addition, a well-managed reward system will increase employee motivation, and they will be more inclined to work harder to achieve organizational goals and strategies (Zafar et al., 2020). For example, the organization can use an efficient reward management system to increase employee commitment because it can attract and retain employees to increase the organization's efficiency and productivity (Martono, Khoiruddin, & Wulansari, 2018). Reward systems can be classified into two, namely extrinsic and intrinsic. Extrinsic rewards are results provided by the organization and include salary, status, job security, and fringe benefits. Intrinsic reward systems are developed to reward employees through self-esteem related to their feelings of achievement and growth within the organization. Employees feel satisfied when they have achieved something of value at work and are verbally appreciated by the organization. In other words, extrinsic rewards are monetary, while intrinsic rewards are non-monetary rewards. Previous studies have found that extrinsic and intrinsic rewards impact employee performance (Puni, Mohammed, & Asamoah, 2018; Zafar et al., 2020). Sihombing et al. (2018) found that rewards are the leading cause of motivation and job satisfaction and subsequently improve employee performance. The main objective of rewards is to attract and retain employees, to motivate employees to achieve a high level of performance, and to strengthen the behavior desired by employees (Chamberlin, Newton, & LePine, 2018). Therefore, the following hypothesis will be tested:

H2: There is a significant relationship between rewards and the job performance of employees in the support and professional group at the Immigration Department of Malaysia

Appraisal System & Job Performance

Most organizations today have implemented performance evaluation activities for administrative purposes and employee development. Performance appraisal is an evaluation process to measure a person's level of achievement in a certain period, and employees are given evaluation feedback (El Haddad, Karkoulian, & Nehme, 2018; Mohamad & Mohamad, 2022). Performance appraisal is also an important mechanism that allows organizations to assess the effectiveness of workers (Iqbal et al., 2019). Performance appraisal management allocates resources, such as rewards, to meet employees' needs and wants (Memon et al., 2019). However, implementing the performance evaluation process is a challenging task. This demands that organizations design effective performance appraisal management systems to encourage employee development and achieve organizational goals (Lin & Kellough, 2019). An effective performance management system must be planned and implemented according to the goals mutually agreed upon by employees and employers (Rudman, 2020). In Malaysia, one of the basic principles of the public service performance evaluation system is encouraging positive competition in improving quality and productivity to achieve organizational objectives. Giving

work performance feedback is necessary to maintain commitment, quality of work, and loyalty, in addition to being used as an instrument of control over employees (Rubin & Edwards, 2020). In the performance management system, the evaluators should provide quality feedback to make critical decisions, such as planning training needs and strengthening the quality of employee performance over time (Bayo-Moriones, Galdon-Sanchez, & Martinez-de-Morentin, 2020). Poor quality performance feedback can cause damage to the value of the performance evaluation system (Iqbal et al., 2019). Quality performance feedback allows the evaluators to be more open, positive, and motivated (El Haddad, Karkoulian, & Nehme, 2018). Therefore, the following relationship will be tested in the hypothesized model:

H3: There is a significant relationship between the appraisal system and the job performance of employees in the support and professional group at the Immigration Department of Malaysia

In this case, the conceptual framework describes the relationship between the independent variables, training, rewards, and appraisal system, and the dependent variable, job performance (see Figure 2).

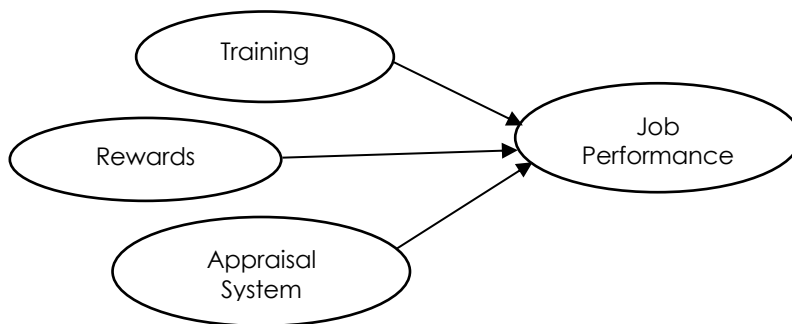


Figure 2. Conceptual Model of the Study

3. Methodology

This study used a quantitative approach survey that involves the process of data collection through a questionnaire. The sampling method used in this study is a non-probability sampling method that uses purposive sampling, which refers to the procedure sampling where a group of subjects owning specific characteristics is selected as study respondents. This research follows Green's (1991) thumb rule for calculating an acceptable sample size where $N < 50 + 8m$ for regression analysis, where m is the number of predictor variables. For this study, using Green's (1991) sample $> 50 + 8 \times 3 = 74$ participants, a sample of 250 should be sufficient. Therefore, the sample comprises 250 respondents among the support and professional group employees at the Immigration Department of Malaysia.

Measurement instruments for variables used in this study are adapted from past studies (see Table 1). The measurements are developed in English and translated into Malay using the back translation method. This measurement uses a Likert scale with five answer options with a scale of one representing "strongly disagree" and five representing "strongly agree." The reliability of the instruments was measured based on Cronbach's Alpha, where when the Cronbach Alpha value is between 0.6 to 1, it shows that all items have high reliability (Sekaran & Bougie, 2016). Then, to test the level of normality of data, Kline (2015) suggests that the skewness value is within

±3.0, and the kurtosis value is within the 10 to +10 cut-off point. Pearson's Correlation analysis was performed to examine the relationship between the proposed relationships. Correlation analysis (r) will state the direction, strength, and significance of the relationship between all measured variables. Finally, regression analysis was used to determine the most influential predictors that affect job performance.

Table 1
Measurement of the Variable

Variable	Item	Source
Training	1) The training provided is having what you need to do your job	Kirkpatrick (1994)
	2) The training provided has relevant courses content	
	3) There are suitable facilities for teaching and learning	
	4) The training does not duplicate what you have learned previously	
	5) Overall training content is good	
Rewards	1) The rewards are distributed rightfully	Leary (2004)
	2) The reward matches my work effort	
	3) I am satisfied with the quality and quantity of the rewards	
	4) I am ready to increase my work efforts to gain rewards	
	5) Employees work more as a team to gain rewards	
	6) The rewards have a positive effect on the work atmosphere	
	7) The rewards motivate me to perform well in my job	
Appraisal System	1) Those who got the highest rank are given appropriate rewards	Keeping & Levy (2000)
	2) The appraisal system of the organization is motivating to the employees	
	3) The employees are satisfied with the way they are being evaluated and ranked	
	4) The appraisal system is effective in encouraging employees to work hard	
	5) Employees take part in the formulation of the performance appraisal system	
Job Performance	1) I can meet deadlines	Chen, Paetsch, & Paulraj (1997)
	2) I am a self-motivated person	
	3) I am clear about my duties and responsibilities	
	4) I tend to see problems as a challenge rather than as obstacles	
	5) I gain personal growth by learning various skills in my work	

4. Results & Discussion

By the end of the study period, we had received 208 completed surveys, an 83.2% return rate. Demographic analyses show that most respondents are men (52.4%), while the rest are women (47.6%). Most respondents are aged between 30-39 years (48.6%). Most respondents graduated from Sijil Pelajaran Malaysia (SPM) (31.7%). Data collection for this study was analyzed based on responses from questionnaires for each construct. So, it is essential to conduct the Cronbach alpha reliability test. From this analysis, the measurement of Cronbach alpha for all the primary constructs exceeds the determining point of 0.60, where the Cronbach alpha coefficient for training is 0.87, rewards are 0.87, the appraisal system is 0.85, and the job performance construct is 0.84. Meanwhile, the value of skewness and kurtosis are within the required range, proving that the data of this study is usually distributed. Table 2 shows the results of the Normality and Reliability tests.

Table 2
Normality & Reliability Results

Variables	Mean	SD	Skewness	Kurtosis	Cronbach's Alpha	No. of Items
Training	3.77	0.70	-0.012	-0.410	0.87	5
Rewards	3.77	0.70	-0.191	-0.074	0.87	7
Appraisal System	3.73	0.82	-0.520	-0.220	0.85	5
Job Performance	4.41	0.49	-0.443	-0.349	0.84	5

Table 3
Pearson Correlation Results

	Job Performance	
Training	Pearson Correlation	0.371**
	Sig. (1-tailed)	0.000
	N	208
Rewards	Pearson Correlation	0.414**
	Sig. (1-tailed)	0.000
	N	208
Appraisal System	Pearson Correlation	0.411**
	Sig. (1-tailed)	0.000
	N	208

Based on Table 3, there are significant and positive relationships between training ($r=0.371$, $p<0.05$), rewards ($r=0.414$, $p<0.05$), and appraisal system ($r=0.411$, $p<0.05$) towards job performance. Thus, all proposed hypotheses were accepted.

Table 4
Regression Results

Variables	Beta (β)	Sig. (p)	Tolerance	VIF
Training	0.118	0.173	0.526	1.900

Rewards	0.200	0.032	0.450	2.222
Appraisal System	0.200	0.028	0.472	2.118
R²	0.209			
Adjusted R²	0.197			
F Change	17.933			
Sig.	0.000			

Regression analysis was used to measure dependent variable changes if one of the independent variables increases by one unit and all other independent variables are considered constant. First, to detect the existence of multicollinearity, this study refers to the value of the Variance Inflation Factor (VIF) and tolerance. If the VIF is less than ten and the tolerance value is more than 0.20, then the model has no multicollinearity (Kutner et al., 2004). Using tolerance and VIF factor, it revealed that there was no presence of multicollinearity (see Table 4). The absence of multicollinearity estimates the regression coefficients more accurately than their parameters. The R² value of 0.209 means that training, rewards, and performance appraisal can explain 20.9% of job performance. At the same time, the remaining 5.4% can be explained by other factors not examined in this research. The result also shows a high beta value which depicts that the rewards ($\beta=0.200$, $p=0.032$) and appraisal system ($\beta=0.200$, $p=0.028$) explain a high degree of job performance. Ensuring an organization's rewards and appraisal system is essential and positively impacts job performance (El Haddad, Karkoulian, & Nehme, 2018; Mohamad & Mohamad, 2022).

Some implications of this study can be viewed from an empirical and practical point of view. Empirically, this study has provided a new approach by examining how training, rewards, and appraisal system affect job performance. This is because previous studies focused more on negative aspects such as burnout, health problems, and work stress. By understanding influencing work factors in public service, organizations can implement work structures and appropriate intervention plans in creating competent employees, for example, improve aspects of training by considering the different cognitive levels of an individual employee. The selection method and management training should be different according to culture. In a collectivist culture like Malaysia, the selection of workers is more focused on how the individual can adapt in groups compared individualistic culture that pays more attention to individual technical skills. Practical implications can be seen from the perspective of civil servants' employment practices by building a working atmosphere that is productive and harmonious through social support given by the organization, supervisors, and friends towards each individual in the organization. Martono, Khoiruddin, and Wulansari (2018) have discussed that organizational support can stimulate motivation training and increase effectiveness. Organizations should become more flexible regarding management style and policy by devising strategies to increase flexibility. Organizations also can improve rewards and appraisal systems with employee involvement in decision-making. This method allows organizations to obtain helpful information from employees.

5. Conclusion

This study has given an overview and a clear understanding of the importance of relationships between training, rewards, appraisal system, and job performance. The results of this study can further develop available literature sources by presenting empirical findings that other researchers can use. In addition, the contribution of this study can also give knowledge that is important to organizational management on the importance of public service motivation factors in playing an essential role in increasing job performance. However, this study has several limitations to be highlighted. First, this study only selected the support and professional group at the Immigration Department of Malaysia in two state contingents, namely Kuala Lumpur and Selangor. Accordingly, a study examining the sample as more heterogeneous can explain further research findings.

Moreover, this study is entirely dependent on a quantitative survey. Future studies should be conducted using qualitative methods to obtain more detailed findings. Next, the data obtained through self-assessment can cause the issue of common method bias (Podsakoff et al., 2003). One of the causes of common method bias is the social desirability bias that occurs when the respondent answers the questionnaire not based on their feelings or beliefs. However, they answered based on what should be answered. Future researchers need to reduce the effect of social desirability bias by emphasizing confidentiality of the identity of each respondent, explaining there is no right or wrong answer, avoiding using vague or complex concepts, and making sure the questions are easy to understand and not double-barreled.

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Authors Contributions

Nurul Hidayana, M. N. and Nur Yunis Syairah, M. Z. conceived and planned the research. Nur Yunis Syairah, M. Z. contributed to the interpretation of the results. Nurul Hidayana, M. N. took the lead in writing the manuscript. All authors provided critical feedback and helped shape the research, analysis, and manuscript.

Conflict of Interest

We certify that the article is the Authors' and Co-Authors' original work. The article has not received prior publication and is not under consideration for publication elsewhere. This research/manuscript has not been submitted for publication, nor has it been published in whole or in part elsewhere. We testify that all Authors have contributed significantly to the work, validity, and legitimacy of the data and its interpretation for submission to Voice of Academia.

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IDENTIFYING CHARACTERISTICS SHAPING MALAYSIAN UNDERGRADUATES' ORGANIZATIONAL CITIZENSHIP BEHAVIORS

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ABSTRACT

Organizational citizenship behavior (OCB) is behavior that goes beyond formal essential tasks, such as helping colleagues, being actively involved in organizational development, and being able to tolerate shortcomings and difficulties at work. Past studies have shown that OCB contributes positively to individual, group, and organizational level outcomes. The importance of OCB to students has also received the attention of previous studies, albeit only slightly. This study was conducted to examine whether OCB among university students can be explained based on their demographic factors. The respondents in this study were 312 Malaysian undergraduates. This study contributes to the OCB body of knowledge by demonstrating differences in OCB based on demographic factors. The results of the study found that university students showed a relatively high level of OCB, and there were some differences in terms of the level of certain OCB dimensions based on gender, level of study, and field of study. Additionally, this study also found that students' OCB levels had a positive relationship with self-efficacy as well as intrinsic motivation. Implications from this study as well as recommendations for future research are presented.

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1. Introduction

Organ (1983) used the term "organizational citizenship behavior" (OCB) to describe a type of voluntary behavior. In most cases, OCB is not included in a person's contractual obligations. Assisting coworkers with work-related difficulties, respecting others, making good use of working

time, being actively engaged in the organization's development, and being ready to work hard and surpass work objectives for the organization's interests are all examples of OCBs. OCB is defined as behavior that goes above and beyond what is anticipated, and it can take various shapes depending on the individual (Joirman, Daniels, & Kamdar, 2006). Some individuals believe it is normal to assist coworkers or refrain from grumbling when faced with difficulties at work (e.g., power outages and increased workload). These behaviors, however, are outside the scope of formal work for some employees and cannot be permitted (Miles et al., 2002).

While researchers contend that these are not formalized behaviors that are included in performance assessments, it cannot be denied that organizations require employees who have a proclivity for the behaviors described above. OCB is defined as an extra-role activity in the literature, whereas formal job duties or performance tasks are considered in-role behaviors. Even though OCBs are extra-role behaviors, research has shown that they are nevertheless taken into account when evaluating performance (Podsakoff, Ahearne, MacKenzie, 1997). This indicates that, although OCB is an extra-role in nature, management considers an employee's OCB when making decisions about performance assessment or promotion. High levels of OCB have been found in studies to improve several elements of individual achievement, including performance assessment, financial rewards such as pay raises and promotions, withdrawal behaviors, and student academic performance (Podsakoff, MacKenzie, Paine & Bachrach, 2000; Allen and Rush, 1998; Chen et al., 1998; Allison, Voss & Dryer, 2001; Khalid et al., 2009).

It would be great if our young generation had a natural or learned inclination to act well from an early age. It benefits not only themselves but also the organization in which they will work in the future, as well as the community and country's growth. Although OCB has been shown to influence a person's short-term achievements, such as academic achievement (DiPaola & Hoy, 2013), and longer-term performance, such as promotion (Podsakoff, Whiting, Podsakoff, & Blume, 2009), research into the extent of OCB among Malaysia's younger generations is unexplored. Our students should value OCB not only for job progress but also for the role it plays in shaping them into decent citizens for the country. Students in higher education are an essential segment of the community who will be actively involved in the development of society and the country both during and after graduation. They are the ones who should be cultivated to achieve not just intellectually, but also to possess qualities and behaviors that are beneficial to society.

Higher educational institutions are thought of as training grounds for the next generation and national development inheritors. A student must satisfy academic requirements such as attending courses, sitting for examinations, participating in co-curricular activities, and other activities that require the accumulation of credit hours to complete their studies. The chances for fostering OCB behaviors during their time in higher education, whether spontaneously, through the influence of friends and staff, or development programs, are extensive. Helping classmates, participating in philanthropic initiatives, adhering to institutional standards even when no one is looking, and taking an active role in improving the institution's reputation are all examples of OCB behavior, regardless of whether they influence credit hours or not. Strengthening OCB among the younger generation will undoubtedly impact student achievement and help the organization, community, and country (Astin, 1977; LeBlanc, 2014).

In addition, two factors, self-efficacy, and intrinsic motivation have been shown to influence the OCB. Given the relevance of these two factors, the impact of these two variables on students' OCBs was investigated in this study. It is believed that by investigating the effects of these two factors on students' OCBs, efforts to identify the features of OCBs among students will yield clearer and more comprehensive findings. It will be easier to take suitable steps to improve the level of OCBs among students while they are still at university if we can anticipate their OCB based on some demographic factors, self-efficacy, and intrinsic motivation.

Based on the above discussion, this study was conducted to answer the following research questions:

1. To what extent do students practice OCBs?

2. To what extent can the students' OCBs be influenced by their self-efficacy and intrinsic motivation?
3. Can students' factors of age, gender, level of study, and field of study determine their OCBs?

2. Literature Review

Organizational Citizenship Behavior

OCB is distinguished by its discretionary behavior, which is not explicitly or implicitly recognized by the official remuneration system but is beneficial to the organization's overall efficiency (Organ 1988). The phrase discretionary implies that OCB is a personal decision for the employee, and failing to display OCB does not usually result in disciplinary action. However, it is widely accepted that the organization expects individuals to contribute in ways other than those specified in the job description. This includes helping coworkers with task-related activities, voluntarily reducing rest time to finish a job or assist clients, maintaining good relationships with colleagues and supervisors, resisting complaining about any shortcomings in the office, and actively participating in organizational development, such as serving on various committees and providing constructive feedback to the department and organization.

Although in the early stages, studies have focused more on the determinants of its antecedents (e.g., Smith, Organ & Near, 1983; Borman, 2004; Podsakoff, MacKenzie, Moorman & Fetter, 1990), studies have also begun to examine the effects of OCB, such as work performance and performance evaluation. The impact of OCBs on performance has been studied at the individual level (Allen & Rush, 1998; Chen et al. 1998; Khalid et al. 2009) and organizational level (Podsakoff, Ahearne & Mackenzie, 1997). Studies on the factors contributing to the OCB are carried out on the assumption that OCBs contribute to performance. Additionally, several dimensions of OCB have been studied by researchers. Among them are Williams and Anderson (1988), who indicated that OCB has two dimensions that benefit both the organization and the person. OCB that benefits the organization is labeled as OCB-O while the one that benefits the individual is labeled as OCB-I. Organ (1990) suggested that OCB is a 5-dimensional construct, namely altruism, courtesy, athletics, civic virtue, and conscientiousness.

It is believed that DiPaola and Tschannen-Moran (2001) were among the first researchers to study OCB in an educational context. They found that OCB in the educational context is unidimensional. The five dimensions of OCB, namely altruism, civic virtue, conscientiousness, courtesy, and civic virtue, as discussed by Organ (1990) were the most widely used in research. The meaning of each dimension is provided in Table 1.

*Table 1
Descriptions of OCB Dimensions*

OCB Dimension	Meaning	Source
Altruism	Actions are taken voluntarily to help others such as colleagues to complete work-related tasks	Podsakoff & MacKenzie 1994
Civic virtue	Active participation in the development of the organization as well as being very concerned with the life of the organization	Podsakoff & MacKenzie (1994)

Conscientiousness	The use of working time, attendance, and compliance with all forms of organizational rules exceeds the minimum standards	Organ (1990)
Courtesy	Actions were taken to prevent the occurrence of work-related problems with other parties such as supervisors and colleagues	Podsakoff & MacKenzie (1994)
Sportsmanship	Ability and willingness to tolerate any discomfort or difficulty in the workplace and perform tasks without complaining	Organ (1990)

Students' Engagement in OCB

According to Podsakoff, Whiting, Podsakoff, and Blume (2009), a total of 200 publications linked to OCB were published in meta-analysis research. The majority of this research looked at OCB in the setting of conventional workplaces. According to Allison, Voss, and Dryer (2001), OCB studies in the educational sector are still few. According to a review of related literature, certain studies of OCB at educational institutions place a greater emphasis on OCB among instructors (Skarlicki & Latham, 1995; Ertuk, 2007). Several studies that have been conducted involving educational institutions aimed at reviewing the factors that contribute to OCB or the effect of OCB have also reported the means of OCB for students. However, these studies were not intended to describe the characteristics of students who are prone to OCB. Generally, students regardless of the level of education have exhibited a rather moderately high level of OCB.

Table 2
Students' OCB Reported by Previous Studies

Study/Location	Sample	OCB measurement	Findings
Allison et al.(2001) – United States	To examine the relationship between OCB and academic performance among 222 undergraduates	17 items by Podsakoff and Mackenzie (1994); 7-point scale	Within the range of 4.33 (civic virtue) to 6.00 (Courtesy).
Blondheim & Somech (2019) - Israel	The used of focus group interviews to extract citizenship behaviors from 19 students from elementary and middle schools	Development of new citizenship behaviors (e.g., helping behavior toward students, OCB toward school personnel)	This study reveals that school students do indeed exhibit unique characteristics and dimensions of OCB
Azila-Gbettor et al. (2019) - Ghana	To examine the relationship between self-esteem and OCB among 354 undergraduates	10-item scale by Allison et al. (2001); 7-point scale	Reported a composite mean score of 4.974 (SD=0.968) for undergraduates OCB

Chai et al. (2020) United States	To examine the relationship between family and community support and OCB among 1,436 undergraduates/graduates	11 items from OCBO and OCBI by William and Anderson (1991); 7-point scale	Reported a mean value of 5.30 (SD=0.89) for OCBI and a mean value of 6.09 (SD=0.79) for OCBO
Khalid et al. (2013) Malaysia	To examine the relationship between religiosity and OCB among 237 undergraduates	11 items from OCBO and OCBI William & Anderson (1991); 5-point scale	Reported a mean value of 3.44 (SD=0.50) for OCBI and a mean value of 3.13 (SD=0.34) for OCBO
LeBlance (2014) USA	To examine characteristics of students' OCB among 490 undergraduates	24-item scale by Podsakoff, MacKenzie, Moorman & Fetter (1990)	-Means OCB of female students is higher and significant than that of male students -Year in school did not show a significant relationship with OCB engagement -Undergraduate major is positively related to OCB engagement
Terzi (2011) Turkey	To examine the relationship between locus of control and OCB among 252 undergraduates	The scale used in regards to OCB was developed by the researcher	OCB levels between male and female students are the same

Table 2 summarizes the studies. As far as we know, the first study that examined OCB based on characteristics of students was the study by LeBlanc (2014). Their study involving 490 university students attempted to assess students' OCB based on gender, number of years of study, religious practice as well as field of study. As mentioned earlier, limited number of studies have discussed the importance of OCB among students (LeBlance, 2014; Allison et al., 2001). Allison et al., (2001) emphasized the importance of OCB in the student context, where OCB is not only able to have a positive impact in terms of academic achievement but also has the potential to benefit students in terms of career advancement. LeBlanc (2014) emphasizes the importance of students' OCB to improve the effectiveness of the organization as a whole as well as the impact of OCB on student development. Allison et al., (2001) and LeBlance (2014) also emphasized the role that educational institutions need to play as the most appropriate place to train students in terms of the importance of OCB.

Several studies that have been conducted involving educational institutions aimed at reviewing the factors that contribute to OCB or the effect of OCB have also reported the means of OCB for students. However, these studies are not intended to describe the characteristics of students who are prone to OCB. Generally, students regardless of the level of education have exhibited a rather moderately high level of OCB. Table 2 summarizes the studies. A study by LeBlanc (2014) involving 490 university students attempted to assess students' OCB based on gender, number of years of study, religious practice as well as field of study.

Self-Efficacy, Intrinsic Motivation and OCB

Self-efficacy refers to a person's belief in his or her ability to carry out the behaviors required to achieve certain performance goals. Self-efficacy is a measure of one's belief in one's capacity to regulate one's motivation, behavior, and social environment (Bandura, 1997). He

went on to say that believing in one's own ability to complete a task is a big part of the achievement that comes from doing it. When opposed to students who are less confident in their abilities, a student with a high level of self-efficacy can learn hard, is effective in the learning process, has stamina, and is not emotionally upset when faced with obstacles (Zimmerman, 2000). Individuals who have high expectations of themselves and feel they can perform efficiently and successfully can undertake extra duties beyond those explicitly allocated to them, according to Bolger and Somech (2004).

The previous study has discovered that self-efficacy is one of the most important elements determining OCB (e.g., Sheikh, 2015; Dussault, 2006). Intrinsic motivation is described as a desire to engage in work because it is intriguing and gratifying, as opposed to extrinsic motivation, which is defined as a drive to attain certain goals, such as rewards or recognition (Amabile et al., 1994). (Amabile, 1993). Existing research also emphasizes the significance of employees' intrinsic motivation for OCB participation (e.g., Kim, Kim & Holland, 2019; Ibrahim & Aslinda, 2014). According to previous research, employees with intrinsically exciting occupations are more inclined to go above and beyond their formal work obligations (Bolino, Turnley, & Bloodgood, 2002; Saavedra & Kwun, 2000). A good or non-self-serving motivation causes OCB (Podsakoff, MacKenzie, Paine, & Bachrach, 2000). These actions go above and above the call of duty (Organ, 1997). As a result, there should be a positive relationship between OCB and intrinsic motivation.

3. Methodology

Participant

This research is correlational and cross-sectional with a quantitative approach (Gravetter & Forzano, 2009) aimed at achieving the objective of evaluating students' OCB based on age, gender, level of study, and field of study. Additionally, this study also examined the relationship of two important variables which are self-efficacy and intrinsic motivation with students' OCB. This study was conducted at one of the branch campuses of the largest public university in Malaysia. The branch campus offers business management studies, accountancy as well as science technology. Six thousand seven hundred students enrolled in bachelor's degree and diploma programs make up the study's population.. The sample size required is about 362 (Krejcie & Morgan, 1970).

Procedure

The process of gathering data for this research was conducted using Google forms distributed using several WhatsApp groups. Due to Movement Control Order (MCO) which limits the ability of researchers' mobility, a convenience systematic sampling technique was used to collect the data (Sekaran & Baugie, 2010). Clear instructions accompanied these Google forms and the contact details of the researcher are also included in the questionnaire form so that the respondents may ask if there are any inquiries about any clarifications that need to be explained more. The objectives of this study have also been clearly stated in the questionnaire. Participation is voluntary and researchers have ensured that confidentiality is fully preserved. Respondents were informed that it took approximately 10 minutes to respond.

Measurement

Students' Organizational Citizenship Behavior was measured using a 10-item scale by Allison, Voss, and Dyer (2001). The 10-item scale was intended to measure the 5 OCB dimensions – altruism, courtesy, conscientiousness, civic virtue, and sportsmanship. It is measured using a 5-point scale from 1 (strongly disagree) to 5 (strongly agree). Sample items include "I willingly give my time to help other students who have study-related problems" and "I take steps to try to prevent problems with other students in my class". Self-Efficacy was measured using a 3-item

scale from Spreitzer (1995) and intrinsic motivation was measured using a 4-item scale from Pintrich et al., cited in Hsieh (2014). Demographic information is collected such as age, gender, level of study whether bachelor's degree or diploma as well as field of study. Except for age which is measured as a ratio scale, other demographic items are nominal scales.

Data Analysis

Data were analyzed using Statistical Procedure for Social Sciences (SPSS). Among the statistics used include means, standard deviation, correlations, and t-test.

4. Results

Sample Characteristics

The Google form survey has been completely used to collect data from students who are directly involved with online learning from March 2020. A total of 312 students have answered to the Google form that was disseminated over multiple WhatsApp groups to a total of 747 students. Females made up the bulk of the participants in this study (64.4 percent). Around 70.8 percent of students are enrolled in bachelor's degree programs, with the remaining enrolled in diploma programs. The number of students studying science and technology (52.2%) is about similar to the number of students studying management science (52.2%). (47.4 percent).

Goodness of Measures

Before answering the research questions, the principle component analysis (PCA) method with varimax rotation (Hair, Anderson, Tatham & Black, 1998) is used to identify underlying dimensions of students' OCB, learning motivation, and self-efficacy. PCA is the most frequently used approach (Cooper & Schindler, 2001). Table 3 illustrates the result of factor analysis for 10 items measuring students' OCB. As shown, the 10 items were loaded into 3 factors. Two altruism items, two courtesy items, and one conscientiousness item loaded together in factor 1. This factor was labeled as courtesy/altruism. Factor 2 consists of two civic virtue items and one conscientiousness item and was labeled as a civic virtue. The last factor consists of two sportsmanship items. Next, the four items intended to measure intrinsic motivation loaded nicely in a single factor (see Table 4). Finally, Table 5 indicates that the 3 items intended to measure self-efficacy are also loaded in a single component.

Table 3
Factor analysis for students' OCB items

No	Item	Component		
		1	2	3
1	I take steps to try to prevent problems with other students in my class.	.82	.04	.16
2	I "touch base" with other students before initiating actions that might affect them (e.g., in team projects).	.79	.10	.09
3	I willingly give of my time to help other students who have faculty/university-related problems.	.67	.38	.09
4	I am willing to take time out of my busy schedule to helps students with their homework.	.59	.51	.17
5	I return phone call calls from students/lecturers and respond to other messages and requests for information promptly.	.56	.32	.15
6	I attend and actively participate in faculty/university meetings.	.17	.81	.01

7	I attend special classes or other meetings that students are encouraged but not required to attend.	.11	.78	.23
8	I turn in homework, projects, reports, etc. earlier than is required.	.34	.47	.19
9	I always focus on what is wrong with my situation rather than the positive side of it.	.18	.01	.89
10	I always find fault with what the faculty/university is doing.	.06	.52	.71
KMO Measure of Sampling Adequacy		=	.793	
Bartlett's Test of Sphericity, Chi-Square		=	933.541	
	df	=	45	
	Sig.	=	.000	

Table 4
Factor analysis for students' intrinsic motivation items

No	Item	Component	
		1	
1	In my course, I prefer course material that challenges me so that I can learn new things.	.77	
2	In my course, I prefer course material that arouses my curiosity, even if it is difficult to learn.	.86	
3	The most satisfying thing for me in my course is trying to understand the content as thoroughly as possible.	.65	
4	When I have the opportunity, I choose course assignments that I can learn from, even if they don't guarantee a good grade.	.79	
KMO Measure of Sampling Adequacy		=	.712
Bartlett's Test of Sphericity, Chi-Square		=	693.496
	df	=	21
	Sig.	=	.000

Table 5
Factor analysis for self-efficacy items

No.	Item	Component	
1	I am confident about my ability to do my academic tasks.	.911	
2	I am self-assured about my capabilities to perform my academic tasks.	.915	
3	I have mastered the skills necessary for my academic tasks.	.861	
KMO Measure of Sampling Adequacy		=	.725
Bartlett's Test of Sphericity, Chi-Square		=	503.689
	df	=	3
	Sig.	=	.000

Table 6
Reliability Analysis

Variable	No. of Item	α
Self-Efficacy	3	.88

Intrinsic motivation	4	.74
Students' Courtesy/Altruism	5	.79
Students' Civic virtue	3	.71
Students' sportsmanship	2	.72

Table 6 indicates the Cronbach's alpha for these dimensions. According to Nunnally (1978), Cronbach alpha should be greater than 0.70. As indicates in Table 3, the alpha values for all variables are above 0.70.

Descriptive Statistics and Inter-Correlations

Table 7
Descriptive Statistics of Mean and Standard Deviation

Variable	Mean	SD	Range
Age	20.9	1.38	14
Self-Efficacy	3.78	.68	3
Intrinsic motivation	3.83	.59	4
Students' Courtesy/Altruism	4.06	.54	3
Students' civic virtue	3.55	.76	4
Students' sportsmanship	3.16	.96	4

Table 8
Correlational analysis

	Variables	1	2	3	4	5	6
1	Age	-					
2	Self-Efficacy	.12*	-				
3	Intrinsic motivation	.13*	.48**	-			
4	Courtesy / Altruism	.02	.39**	.35**	-		
5	Civic virtue	.11	.43**	.23**	.00	-	
6	Sportsmanship	.03	.01	.15*	.00	.00	-

*p<.05; **p<.01

Descriptive statistic of mean was used to answer the first research question - to what extent do students practice OCBs? Table 7 shows the means, standard deviations, and ranges of all measures in this study. All the constructs were measured based on the 5-point Likert scale. As can be seen, all the mean values for students' courtesy/altruism, civic virtue, and sportsmanship were above the mid-point of three, with the highest of 4.06 for altruism/courtesy. In general, the values of standard deviations for most constructs indicated that the observations were tended to be closed to the mean. This analysis showed that the students showed relatively high levels of OCB. In addition, the mean age is 20.9 years with a standard deviation of 1.38. Intercorrelation was conducted to answer the second research question - to what extent can the students' OCB be influenced by their self-efficacy and intrinsic motivation? As can be seen in Table 8, courtesy/altruism has a significant relationship with self-efficacy ($r=.39, p<.01$), and intrinsic motivation ($r=.35, p<.01$). Civic virtue has a significant relationship with self-efficacy ($r=.43, p<.01$) and intrinsic motivation ($r=.23, p<.01$). Finally, sportsmanship has a significant relationship with intrinsic motivation ($r=.15, p<.05$). The result of correlation also indicated that age is not significantly related to any dimensions of OCB.

Test of Differences

Independent sample of t-test were conducted to answer the third research question - can students' gender, level of study, and field of study determine their OCB? The first independent sample t-test was conducted to examine whether there is a significant difference in terms of the level of OCBs between male and female students. As shown in Table 9a and 9b, significant differences exist only for the sportsmanship dimension. Means for males (3.44) are higher than for females (3.00) and significance for males at .000. Sportsmanship is a form of OCB that involves the ability to tolerate any discomfort or difficulty in the workplace and perform tasks without complaining (Organ, 1988). Students were enrolled in online learning at the time of this research. Students encounter a variety of challenges when it comes to online learning, including arranging group assignments among group members, unreliable internet lines, concerns linked to long-term isolation, and so on. Female students are more likely to experience conflicts between their responsibilities as students and the duty of assisting parents while they are at home for online study. Females who undertake dual tasks may experience greater conflict than males. As a result, females may have a negative perception of a scenario, causing them to criticize the faculty/university's actions. There are disparities between male and female students when it comes to online learning. For example, females reported experiencing higher stress during virtual learning (AlAteeq, Aljhani, & AlEesa, 2020) while males tend to hold more stable positive attitudes toward online learning (Nistor, 2013).

Table 9a
OCB Composite and OCB Dimensions Differences Based on Gender – Group Statistics

	Gender	N	Mean	SD	Std. Error Mean
OCB Composite	Male	111	3.76	.62	.059
	Female	201	3.71	.48	.034
Courtesy / Altruism	Male	111	4.01	.59	.056
	Female	201	4.09	.51	.036
Civic virtue	Male	111	3.54	.83	.078
	Female	201	3.56	.72	.051
Sportsmanship	Male	111	3.44	1.04	.099
	Female	201	3.00	.87	.062

Table 9b
OCB Composite and OCB Dimensions Differences Based on Gender – t-test

		F	Sig.	t	df	Sig. (2-tailed)
OCB Composite	Equal variances assumed	12.056	.000	.725	310	.469
	Equal variances not assumed			.673	183.014	.502
Courtesy / Altruism	Equal variances assumed	1.249	.265	-1.139	310	.255
	Equal variances not assumed			-1.093	200.931	.276
Civic virtue	Equal variances assumed	4.417	.036	-.170	310	.865
	Equal variances not assumed			-.164	203.459	.870
Sportsmanship	Equal variances assumed	6.429	.012	3.931	310	.000
	Equal variances not assumed			3.740	196.133	.000

The second independent sample t-test was conducted to examine whether there were significant differences in terms of OCB between diploma and bachelor's degree students. As shown in Table 10a and 10b, the analysis revealed that significant differences based on the level of study occurred only for civic virtue. Means for bachelor's degree students (3.64) are higher than diploma students (3.34) and significance for bachelor's degree at .003. Civic virtue involves active participation in the development of the organization as well as being very concerned with the life of the organization (Podsakoff & MacKenzie, 1994). There are 3 items used to measure civic virtue that involve active participation with faculty activities, attending non-compulsory special activities or classes as well as submitting assignments in advance. In general, it is expected that these behaviors are more demanding for bachelor's degree students than diploma-level students.

Table 10a
OCB Composite and OCB Dimensions Differences Based on Level of Study – Group Statistics

	Gender	N	Mean	SD	Std. Error Mean
OCB Composite	Diploma	91	3.66	.50	.052
	Bachelor's degree	221	3.75	.55	.037
Courtesy / Altruism	Diploma	91	4.07	.53	.055
	Bachelor's degree	221	4.06	.55	.037
Civic virtue	Diploma	91	3.36	.76	.080
	Bachelor's degree	221	3.64	.75	.050
Sportsmanship	Diploma	91	3.12	.88	.092
	Bachelor's degree	221	3.17	.99	.066

Table 10b
OCB Composite and OCB Dimensions Differences Based on Level of Study – t-test

		F	Sig.	t	df	Sig. (2-tailed)
OCB Composite	Equal variances assumed	1.675	.197	-1.373	310	.171
	Equal variances not assumed			-1.426	182.809	.156
Courtesy / Altruism	Equal variances assumed	.037	.848	.092	310	.927
	Equal variances not assumed			.093	174.538	.926
Civic virtue	Equal variances assumed	.148	.701	-2.989	310	.003
	Equal variances not assumed			-2.965	164.889	.003
Sportsmanship	Equal variances assumed	2.641	.105	-.428	310	.669
	Equal variances not assumed			-.450	187.836	.653

The last independent sample t-test was conducted to examine whether there are significant differences in terms of OCB based on the field of study, namely students majoring in science and technology and students majoring in management and accounting. As shown in Table 11a and 11b, the analysis revealed that significant differences based on the field of study occurred only for the OCB dimension of courtesy/altruism. Means for students from the field of management & accounting (4.13) is higher than students in the field of science technology (4.00) and significance for management and accounting students at .043. Although significant, the difference in the means was not too large. This finding is consistent with some of the previous studies. A study by Coulter, Wilkes, and Der-Martirosian (2007) indicates that business and behavioral science students reported more altruistic attitudes than legal, medical, and engineering students (e.g., Coulter, Wilkes & Der-Martirosian, 2007; Siddiqi, Mishra & Shafiq, 2015).

Table 11a
OCB Composite and OCB Dimensions Differences Based on field of study – Group Statistics

	Gender	N	Mean	SD	Std. Error Mean
OCB Composite	Science technology	163	3.69	.54	.042
	Management & accounting	148	3.76	.53	.044
Courtesy / Altruism	Science technology	163	4.00	.57	.045
	Management & accounting	148	4.13	.50	.041
Civic virtue	Science technology	163	3.55	.71	.056
	Management & accounting	148	3.56	.82	.067
Sportsmanship	Science technology	163	3.16	.95	.075
	Management & accounting	148	3.16	.97	.079

Table 11b
OCB Composite and OCB Dimensions Differences Based on Field of study – t-test

		F	Sig.	t	df	Sig. (2-tailed)
OCB Composite	Equal variances assumed	.020	.886	-1.067	309	.287
	Equal variances not assumed			-1.068	306.446	.287
Courtesy / Altruism	Equal variances assumed	.390	.533	-2.007	309	.043
	Equal variances not assumed			-2.019	308.743	.044
Civic virtue	Equal variances assumed	2.665	.104	-.147	309	.883
	Equal variances not assumed			-.146	292.757	.884
Sportsmanship	Equal variances assumed	.187	.666	.038	309	.970
	Equal variances not assumed			.038	305.388	.970

5. Discussion and Conclusion

In general, this study shows that students are inclined to exhibit OCB. However, there are some differences we need to acknowledge. First, male students showed a higher level of sportsmanship than female students. Second, bachelor's degree students showed higher levels of civic virtue than diploma students. Finally, students from the field of management & accountancy showed a higher level of courtesy/altruism than the students from the field of science technology. The results of the study found that age had no relationship with OCBs. Additionally, this study also found that the level of OCBs among students is also influenced by their self-efficacy and intrinsic motivation. The findings that males and students from management & accountancy exhibit higher levels of OCB were not consistent with the findings obtained by LeBlanc (2014). Nevertheless, the findings of this study certainly add to the body of knowledge of OCB. More research needs to be conducted before we can truly confirm the extent to which demographic factors can consistently explain students' OCB. Furthermore, a recent study by Ali (2021) found that demographic factors do not explain the differences in OCB among respondents. Further research is also needed to determine whether demographic factors such as gender act as moderators as evidenced by a study by Yadav, Rangnekar and Srivastav (2019). Their study found that gender and type of organization were found to moderate the relationship between quality of work life and OCB. Factors such as the measurement used to measure students' OCB as well as the selection of demographic factors need to be addressed by future studies. Nevertheless, based on the findings of this study, efforts should be made to increase the level of OCBs among all students with a greater focus on female students, students from diploma level, and students from science technology courses. Several methods can be used to inculcate OCBs among students. These include the use of role models among administrators and educators and extracurricular activities. Administrators and educators should set examples by adopting OCBs to be followed. The importance of role models in influencing student behavior has been emphasized by many previous studies (e.g., Gladstone & Cimpian, 2021). Several extracurricular activities involving group projects such as team building can be carried out. It is also possible to choose the best students based on the level of OCBs and reward them accordingly. Although it may involve self-serving bias among students, it is hoped that the practice of OCBs among them will become a culture and norm in the long run. The management of higher learning institutions can take some actions to improve self-efficacy among the students. This includes providing assignments that can challenge the ability of students so that they can develop valuable experiences. The use of role models among educators who are always visible to students is another option. One of the strategies recommended by Deci and Ryan (2008) to improve intrinsic motivation is to promote autonomy. To achieve intrinsic objectives in all areas of our life, it is critical to establish the idea that we are in control of what we do – as opposed to a lack of control. In the context of students in higher education institutions, it is interesting to allow them more autonomy. Giving students more flexibility to choose what they want to learn (a broader range of optional courses) or pick their co-curricular activities of interest is one thing that may be done. Moreover, intrinsic motivation has been seen as essential for perseverance at work. People who are intrinsically motivated view their work as a means to an end (Fishbach & Woolley, 2022).

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Authors Contributions

Both authors have been directly and actively involved in the writing of this article, involved with data collection and data analysis.

Conflict of Interest

I/We certify that the article is the Authors' and Co-Authors' original work. The article has not received prior publication and is not under consideration for publication elsewhere. This research/manuscript has not been submitted for publication nor has it been published in whole or in part elsewhere. We testify to the fact that all Authors have contributed significantly to the work, validity and legitimacy of the data and its interpretation for submission.

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REAKSI PEMIMPIN DAN MASYARAKAT TERHADAP BANTUAN PRIHATIN NASIONAL

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ABSTRACT

Bantuan Prihatin Nasional (BPN) is a financial aid channeled by the government to help Malaysians who are affected by the COVID-19 pandemic that is sweeping the world. This is one of the assistances provided by the government in 'Pakej Rangsangan Ekonomi Prihatin Rakyat' which is given on a one-off basis to the B40 and M40 groups. Controls have been made in curbing this epidemic to be spread by implementating the Movement Control Order (MCO) to contain and control the rate of infection from continuing to increase. Therefore, people are encouraged to stay at home and reduce interactions with outsiders. This causes many companies to be unable to operate as usual and suffer losses. Some even had to be temporarily closed or continue to cause many to lose their jobs and sources of income. This situation at once caused the collapse of the economic system as a whole. Concerned about this situation, YAB Prime Minister has announced that RM5.63 billion in the first phase will be allocated to 8.3 million households and single individuals. Looking at many who are deeply affected by the threat that has hit the world in early 2020 which has cause the world economy to be severely affected and the socio-economic situation to be compromised, the government takes the approach of channeling aid in various forms. This will be able to determine the satisfaction of the people and the progress of the country to be continued as usual. Therefore, this assistance should be well received by all levels of society. In line with the aspirations of our Prime Minister, this paper aims to review and identify the reaction of Malaysian leaders and the public towards BPN in ensuring the economic survival of the people and the country in order to assist the government in improving or increasing efforts to improve the economic standards of the people and the

country that have been affected by this COVID-19 pandemic.

Keywords: COVID-19, Bantuan Prihatin Nasional, reactions of leaders and public

Bantuan Prihatin Nasional (BPN) adalah bantuan kewangan yang disalurkan oleh kerajaan dalam membantu rakyat Malaysia yang terkesan dengan keadaan pandemik COVID-19 yang melanda dunia. Ini adalah salah satu bantuan yang disediakan oleh kerajaan dalam Pakej Rangsangan Ekonomi Prihatin Rakyat yang diberikan secara one-off kepada golongan B40 dan M40. Kawalan telah dibuat dalam mengekang wabak ini daripada terus menular. Hal ini menyebabkan pelaksanaan Perintah Kawalan Pergerakan (PKP) dilaksanakan dalam membendung dan mengawal kadar jangkitan daripada terus meningkat. Oleh itu, rakyat digalakkan untuk duduk di rumah dan mengurangkan interaksi dengan orang luar. Perkara ini menyebabkan banyak syarikat tidak berupaya untuk beroperasi seperti biasa dan mengalami kerugian. Malah ada yang terpaksa ditutup sementara atau terus menyebabkan ramai kehilangan pekerjaan dan sumber pendapatan. Situasi ini sekali gus menyebabkan keruntuhan sistem ekonomi secara keseluruhan. Prihatin terhadap keadaan ini, YAB Perdana Menteri telah mengumumkan RM5.63 bilion fasa pertama diperuntukkan kepada 8.3 juta penerima isi rumah dan individu bujang. Melihat kepada ramai yang amat terkesan dengan ancaman yang telah melanda dunia pada awal tahun 2020 yang menyebabkan ekonomi dunia terjejas teruk dan keadaan sosio-ekonomi tergugat, kerajaan mengambil pendekatan menyalurkan bantuan dalam pelbagai bentuk. Ini bererti keprihatinan kerajaan dalam menangani pandemik ini akan dapat menentukan kepuasan hati rakyat dan kemajuan negara kita dapat diteruskan seperti biasa. Oleh itu, bantuan ini haruslah diterima baik oleh semua lapisan masyarakat. Seajar dengan aspirasi Perdana Menteri kita, kertas kerja ini bertujuan untuk meninjau dan mengenal pasti reaksi pemimpin dan masyarakat Malaysia terhadap BPN dalam memastikan kelangsungan ekonomi rakyat dan negara agar dapat membantu pihak kerajaan dalam menambahbaik atau meningkatkan usaha memperbaiki taraf ekonomi rakyat dan negara yang telah terkesan akibat pandemik COVID-19 ini.

Kata kunci: COVID-19, Bantuan Prihatin Nasional, reaksi pemimpin dan masyarakat

1. Pengenalan

COVID-19 adalah wabak penyakit yang kian menular di Malaysia menyebabkan jangkitan saluran pernafasan dan dikenali sebagai Novel Coronavirus 2019. Virus ini telah mula dikesan di Wuhan, Hubei, negara China pada 7 Januari 2020, manakala kes pertama dikesan di Malaysia adalah pada 25 Januari 2020. Oleh itu, kerajaan telah mengambil tindakan melaksanakan Perintah Kawalan Pergerakan (PKP) bagi menjalankan aktiviti kawalan dan pencegahan dalam membendung wabak COVID-19 di Malaysia. Pelaksanaan PKP telah berkuatkuasa 16 Mac 2020 di seluruh negara dan pengisytiharan secara rasmi di bawah Akta Pencegahan dan Pengawalan Penyakit Berjangkit 1988 dan dan Akta Polis 1967 (Ashley, 2020). Melalui pelaksanaan PKP ini, kerajaan pusat telah menetapkan bahawa semua perniagaan dikendalikan dari pukul 8 pagi sehingga 8 malam, amaran ke atas rakyat Malaysia agar tinggal di rumah, larangan perhimpunan serta tiada perjalanan dibenarkan kecuali bagi tujuan perubatan.

Kesan daripada PKP menyebabkan penguncupan sektor ekonomi serta merencatkan pertumbuhan ekonomi dengan begitu drastik, iaitu industri makanan dan minuman, industri pembinaan dan pembuatan, industri pelancongan, industri pertanian, pembinaan dan perkhidmatan terkesan secara langsung mengakibatkan ramai kehilangan pekerjaan. Bank Negara menjangkakan kadar pengangguran meningkat 4% akibat kesan COVID-19 (Astro Awani, 14 Mei 2020). Cabaran sangat dirasai oleh golongan yang berpendapatan rendah kerana terkesan dengan mengalami kesempitan kewangan yang ketara dan berterusan. Beban tanggungan juga semakin bertambah kerana pengangguran yang tinggi. Ini pastinya bukan sahaja memberi kesan kepada sosio ekonomi malah mengganggu kesejahteraan hidup seperti kesihatan fizikal dan mental juga terkesan secara tidak langsung.

Sehubungan itu, kerajaan mengumumkan pakej rangsangan bagi menangani kesan COVID-19. Peruntukan sebanyak RM9.24 bilion dalam Pakej Rangsangan Ekonomi Prihatin Rakyat 2020 (PRIHATIN) telah diumumkan pada 27 Mac 2020 di mana kira-kira 8.3 juta isi rumah dan individu bujang dapat menikmati bantuan ini; Pembayaran BPN ialah RM1,600 kepada golongan isi rumah berpendapatan RM4,000 ke bawah; RM1,000 kepada isi rumah berpendapatan RM4,001 hingga RM8,000; RM800 kepada individu bujang berpendapatan RM2,000 ke bawah; dan RM500 kepada individu bujang berpendapatan RM2,001 hingga RM4,000 (Utusan Borneo, 6 April 2020). Bantuan ini memberi sedikit sinar harapan kepada masyarakat dalam mendepani cabaran semasa melangsungkan kehidupan. Para pemimpin dan masyarakat juga menyambut dan memberi reaksi yang positif terhadap Bantuan Prihatin Nasional.

2. Objektif

Antara objektif kajian ini adalah untuk:

1. melihat reaksi pemimpin terhadap pemulihan ekonomi
2. melihat reaksi masyarakat terhadap kedudukan kewangan
3. melihat mekanisme pelaksanaan saluran Bantuan Prihatin Nasional.

3. Metodologi dan Skop

Pengumpulan data secara kualitatif merujuk kepada pemerhatian melalui reaksi pemimpin dan masyarakat, rujukan dan kajian ini dijalankan berdasarkan media dan akhbar-akhbar tempatan di Malaysia; Astro Awani, Utusan Malaysia, Berita Harian, Harian Metro dan *The Star*. Tinjauan terhadap reaksi pemimpin dan masyarakat Malaysia dibuat bermula dari bulan April 2020 (sejurus selepas negara dilanda pandemik COVID-19) sehingga bulan November 2020.

4. Reaksi pemimpin terhadap pemulihan ekonomi dan kelangsungan hidup masyarakat

Dengan pemberian bantuan ini, maka kuasa membeli oleh rakyat dapat kembali, malah, ramai juga yang menggunakannya sebagai modal memulakan atau meneruskan perniagaan. Seperti yang dinyatakan oleh Astro Awani (4 Mei 2020), Azizi tekad memulakan perniagaan dalam talian menggunakan platform media sosial, Whatsapp dan Facebook bermotakan wang BPN. Astro Awani (3 Mei 2020) juga ada mencatatkan bahawa idaman rakyat ketika ini adalah untuk memulakan semula kehidupan bekerjaya atau berusahawan sebagai mata pencarian yang telah hilang ekoran pandemik COVID-19 ini. Ia dapat membuka rezeki kepada orang perseorangan seperti ibu tunggal, nelayan, petani serta pengusaha sektor pelancongan dan perusahaan kecil dan sederhana. Jelas Ahli Parlimen Kuala Terengganu, Ahmad Amzad Mohamed (Astro Awani, 10 April 2020) bantuan ini sedikit sebanyak dapat melegakan pengusaha-pengusaha kecil dan sederhana seperti keropok lekor, penghasilan songket, batik dan kraftangan yang terjejas di Kuala Terengganu, di samping bantuan pada peringkat Kuala Terengganu sendiri.

Ahli Parlimen Pontian, Datuk Seri Ahmad Maslan menyatakan bahawa peruntukan hampir RM11 bilion kepada 10.425 juta orang adalah satu rekod bantuan terbesar dalam sejarah Malaysia. Malah Ketua Penerangan UMNO dan Naib Ketua Pemuda UMNO juga menyarankan agar pertimbangan diletakkan ke atas pakej ekonomi tambahan sebagai pakej rangsangan tambahan demi melihat kelangsungan kehidupan rakyat menjadi stabil. Ini bagi memastikan ekonomi dapat berlangsung dengan baik. Malah kehidupan masyarakat dapat diteruskan seperti sedia kala. Tanpa bantuan yang diberikan ini menyebabkan masyarakat terhimpit dengan kemelut pandemik yang menyukarkan dan memberi kesan kepada kehidupan.

5. Reaksi masyarakat terhadap kedudukan kewangan

Pengumuman mengenai Bantuan Prihatin Nasional memberikan nafas lega kepada ramai rakyat yang amat memerlukannya dalam menampung kehidupan akibat terkesan dengan pelaksanaan PKP akibat COVID-19. Bantuan diberikan dapat meringankan beban seperti kegunaan membayar sewa rumah, perbelanjaan rumah dan ada yang menggunakannya sebagai modal perniagaan.

Masyarakat di Sabah juga memberi respons yang positif apabila bantuan ini diberikan dan diteruskan dengan BPN 2.0 memandangkan kemelut pandemik COVID-19 masih berterusan dan memberi impak kepada kehidupan sosial dan ekonomi masyarakat. BPN telah memberi manfaat kepada lebih 904 ribu individu di Sabah Astro Awani, September 23, 2020).

Oleh itu, hal ini dilihat telah mengubah sedikit sebanyak corak ekonomi negara apabila ramai berkecimpung dalam perniagaan kecil-kecilan dengan memasarkan secara maya di media sosial demi menampung kehidupan akibat terkesan dengan pandemik yang pastinya memerlukan sokongan daripada semua (Mariah Doksil & Chok Sim Yee, The Borneo Post, 11 November 2020). Kehidupan normal baharu dengan kebergantungan kepada internet terutama kepada peniaga kecil dalam memasarkan produk mereka melalui pasaran maya memberi ruang dan peluang kepada mereka dalam mempelajari dan mencuba perkara baharu dalam perniagaan dan kehidupan. Masyarakat mula mempelajari perkara baharu yang mencorak kepada kehidupan baharu.

6. Mekanisme pelaksanaan saluran Bantuan Prihatin Nasional

Bantuan Prihatin Nasional dan Lanjutan BPN 2.0 merupakan inisiatif terbaik kerajaan terhadap rakyat kerana kerajaan mengambil maklum cabaran yang dihadapi oleh golongan B40 dan M40 dan cuba mencapai semua dalam golongan ini melalui maklumat daripada Bantuan Sara Hidup (BSH) dan juga Lembaga Hasil Dalam Negeri (LHDN) serta membuka peluang rayuan bagi sesiapa yang tidak pernah menerima apa-apa bantuan BPN atau BSH

dengan melayari pautan <https://bpn.hasil.gov.my> atau dengan menghantar borang secara persendirian ke cawangan Lembaga Hasil Dalam Negeri (LHDN) mulai 15 Oktober hingga 15 November 2020 (Maisarah Sheikh Rahim, Utusan Online, 25 September 2020). Keadaan ini amat melegakan banyak pihak yang tidak pernah menerima bantuan untuk berbuat demikian.

Mekanisme pelaksanaan BPN adalah melalui tiga agensi utama iaitu Kementerian Kewangan, bank yang diberi kuasa dan Lembaga Hasil dalam Negeri (LHDN). LHDN menggesa masyarakat untuk memohon bantuan kewangan ini melalui portal BPN di talian Hasil dan perkara ini akan disemak dan disahkan olehnya dan menentukan kelayakan permohonan. LHDN mempunyai pangkalan data pembayar cukai dan penerima BSH. Semakan silang dibuat dengan pangkalan data yang terkini daripada 11 agensi kerajaan iaitu Jabatan Akauntan Negara, Bendahari Negeri seluruh Malaysia, Angkatan Tentera Malaysia (ATM), Kumpulan Wang Persaraan (KWP), Pertubuhan Keselamatan Sosial (PERKESO), Kementerian Pendidikan, Kementerian Pengajian Tinggi, MARA, Jabatan Pendaftaran Negara (JPN), Suruhanjaya Syarikat Malaysia (SSM), dan Kumpulan Wang Simpanan Pekerja (KWSP) (Rafidah & Hazwan, 2020). Semakan dan saringan ini adalah bertujuan mengelak sebarang penipuan oleh pihak yang tidak bertanggungjawab. Proses semakan yang ketat dilakukan bagi mengurangkan ketirisan hasil kerajaan bagi mengelakkan orang yang tidak layak daripada menerima BPN. Setelah diluluskan, bantuan kewangan ini akan dikreditkan ke akaun peribadi pemohon yang diiktiraf oleh pangkalan data BPN.

Bagi penerima yang tidak mempunyai akaun bank pula boleh mengeluarkan bantuan kewangan tersebut secara tunai melalui Bank Simpanan Nasional. Semakan ini dilakukan secara teratur dan memastikan penerima mempunyai tahap pendapatan di dalam julat pendapatan yang layak menerima bantuan ini. Proses rayuan juga dibuka bagi menyediakan ruang kepada pemohon untuk tampil membuat permohonan rayuan sekiranya pendapatan mereka berada di dalam kelayakan julat pendapatan yang ditetapkan.

7. Ulasan

Secara keseluruhan, keratan-keratan akhbar yang dikumpul menunjukkan **penerimaan yang positif** daripada kedua-dua golongan; pemimpin dan masyarakat Malaysia. BPN dapat dilihat sudah diterima dan disambut baik oleh masyarakat Malaysia. Bantuan ini sedikit sebanyak memberikan rasa lega di atas kesempitan yang dihadapi akibat pandemik ini. Kebanyakannya berkata bantuan ini digunakan bagi membeli keperluan dapur, keperluan sekolah anak-anak selain kegunaan kecemasan nanti. Ianya memberikan kuasa membeli terhadap masyarakat dalam kelangsungan hidup serta menjamin kesihatan dalam melalui arus pandemik ini. Manakala para pemimpin bersetuju dan sependapat mengenai tindakan kerajaan dalam membantu meringankan beban rakyat.

Di samping itu, bantuan diberikan adalah **bersasar** kepada golongan B40 dan M40. Pemberian kepada golongan B40 adalah berdasarkan pangkalan data Bantuan Sara Hidup. Manakala golongan M40 adalah berdasarkan data percukaian. Pendekatan ini memberi ruang dan jaminan kepada kedua-dua golongan menikmati bantuan yang diberikan. Selain itu, agihan yang diberikan adalah **telus** yang menunjukkan kriteria kelayakan digariskan dan diwartakan di dada akhbar-akhbar tempatan serta di laman web Lembaga Hasil Dalam Negeri. Pengumuman mengenai jumlah agihan dan pelaksanaan agihan sentiasa dihebahkan di media massa. Ia bertujuan memberikan maklumat yang jelas kepada rakyat mengenainya.

Untuk memastikan ianya terus diterima, kerajaan haruslah memastikan yang ianya dimeterai dengan penuh saksama sejajar dengan konsep yang diutarakan demi memastikan ianya tercapai sepenuhnya.

8. Kesimpulan

Bantuan Prihatin Nasional ini dapat dilihat sebagai pemangkin kepada gerakan ekonomi rakyat dan kemajuan Negara dengan memberikan pelbagai manfaat kepada rakyat dan negara. Beban rakyat dapat dikurangkan kerana kita tahu ramai yang terkesan daripada pandemik ini dengan kehilangan pekerjaan, hilang mata pencarian, masalah kewangan dan lain-lain lagi terutama bagi golongan B40. Oleh itu, saluran bantuan yang diberikan ini menyumbang kepada kembalinya kuasa membeli rakyat di mana ianya mampu menyalurkan kembali kepada ekonomi negara. Ini mampu memberikan nafas lega kepada semua dan meringankan beban dalam mengharungi cabaran pandemik ini. Inisiatif ini dapat memberikan manfaat golongan B40 dan M40 yang rata-rata terjejas dan memerlukan bantuan bagi kelangsungan hidup. Seluruh rakyat memberikan reaksi yang positif terhadap saluran Bantuan Prihatin Rakyat dan mendokong penuh pelaksanaannya. Kerajaan pula bekerja keras dalam memastikan kerajaan prihatin terhadap nasib rakyat dan memberikan yang terbaik dalam berhadapan dengan pandemik ini. Ini boleh dianggap sebagai satu titik permulaan sistem pentadbiran yang baik dengan memberikan perhatian dan prihatin terhadap keperluan rakyat demi kelangsungan hidup akibat terkesan dengan pandemik yang meruntun seluruh dunia.

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LAPISAN MAKSUD DALAM KENYATAAN MEDIA ISTANA NEGARA 24 NOVEMBER 2022: SATU ANALISIS TEKSTUAL

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ABSTRACT

The Istana Negara Media Statement dated 24 November 2022 by His Majesty the King, Duli Yang Yang Maha Mulia Seri Paduka Baginda Yang Dipertuan Agong for media practitioners and rakyat on the appointment of the 10th Prime Minister comprises rich underlying meanings. Using textual analysis, this study investigated the use of words and structures in conveying implied meaning. The study found that this text clearly states the decision-making process by His Majesty the King and His Majesty's recommendations to the Prime Minister and national leaders. In addition, Royal and Arabic terms as well as Malay proverbs have been used to reinforce this purpose.

Kenyataan Istana Negara bertarikh 24 November 2022 daripada ke Bawah Duli Yang Yang Maha Mulia Seri Paduka Baginda Yang Dipertuan Agong untuk makluman pengamal media dan rakyat akan pelantikan Perdana Menteri ke-10 sebenarnya kaya dengan lapisan maksud yang dalam dan tersirat. Menggunakan analisis tekstual, kajian ini melihat penggunaan perkataan dan ayat dalam menyampaikan maksud yang tersirat. Kajian mendapati teks ini menyatakan dengan jelas akan proses membuat keputusan oleh KDYMM Seri Paduka Baginda dan saranan Baginda terhadap Perdana Menteri dan barisan pemimpin negara. Selain itu, bahasa istana, istilah bahasa Arab dan peribahasa Melayu telah digunakan bagi memperkukuh lagi tujuan ini.

1. Pengenalan

Kenyataan media Istana Negara merupakan wadah rasmi daripada Ketua Negara, ke Bawah Duli Yang Maha Mulia Seri Paduka Baginda Yang Dipertuan Agong untuk makluman pihak media dan rakyat jelata. Kenyataan yang dikeluarkan, ditandatangani dan dihebahkan oleh jurucakap rasmi Istana Negara, Datuk Pengelola Bijaya Diraja Istana. Kenyataan media dikeluarkan sempena perkara-perkara penting yang melibatkan institusi diraja, negara dan dunia. Umpamanya pada tahun 2022, setakat bulan November sahaja, sebanyak dua buah kenyataan media dikeluarkan oleh Istana Negara. Pertama, tentang prosedur pemeriksaan kesihatan Baginda di Institut Jantung Negara dan keberangkatan Baginda dan Raja Permaisuri Agong ke United Kingdom sempena Pemakaman Negara mendiang Ratu Elizabeth II. Kenyataan yang kedua pula adalah tentang pelantikan Perdana Menteri Malaysia yang ke-10.

Kenyataan media yang dikeluarkan bukan sahaja perkhabaran tentang sesuatu peristiwa, malah kaya dengan maksud-maksud tersirat tentang penyampainya dan juga audiensnya. Umpamanya, kenyataan media pada tarikh 24 November 2022 tentang pelantikan Perdana Menteri Malaysia yang ke-10, kaya dengan pelbagai lapisan maksud yang tersurat dan tersirat. Untuk menganalisisnya, satu kajian tekstual dilakukan ke atas wacana tersebut.

2. Objektif kajian

Apakah lapisan makna dalam kenyataan media Istana Negara bertarikh 24 November 2022?

Apakah maksud lapisan makna kenyataan media Istana Negara bertarikh 24 November 2022?

3. Sorotan Kajian

Penggunaan Bahasa Istana/Bahasa Diraja

Istilah Bahasa Istana atau Bahasa Diraja digunakan silih berganti. Bahasa ini digunakan apabila salah satu pihak melibatkan ahli keluarga diraja (Asmah Haji Omar, 2016). Menurut Asmah lagi antara ciri khusus bahasa tersebut termasuk penggunaan ungkapan dan perbendaharaan kata, peraturan nahu, pengulangan, pemulukan dan pendinaan. Di Brunei Darussalam, bahasa istana yang disebut sebagai 'bahasa dalam' mempunyai keindahan yang tersendiri. Mohammad Khairol Nazwan Haji Karim (n.d.) menyenaraikan sifat-sifat bahasa dalam sebagai bahasa tingkat tinggi, bersantun dan berkias, mempunyai simbol kemuliaan, menutup kelemahan, berkolokasi, kata beralas, bernada usulan atau cadangan dan bersimbolik atau berlambang.

Kajian tentang sosiolinguistik dan sosiobudaya Bahasa Istana Kelantan menunjukkan perbezaan antaranya dengan bahasa biasa yang digunakan masyarakat Melayu Kelantan. Perbezaan dapat dilihat daripada segi bentuk sapaan dan panggilan, tatabahasa, makna, sebutan, kosa kata dan penggunaan kata ganti nama diri (Zulkeflee Yaacob, 2009). Kajian lain tentang bahasa istana Kelantan dilakukan oleh Nik Safiah Karim dan Rozita Che Rodi (2019). Mereka menyenarai perbendaharaan kata khusus (perbendaharaan kata diraja, kata ganti nama diri, dan ungkapan tertib) dalam bahasa istana Kelantan dan contoh-contoh penggunaannya yang berbeza dengan masyarakat biasa.

Bahasa istana digunakan dalam pelaksanaan tatacara istiadat diraja seperti pertabalan. Semasa istiadat pertabalan KDYMM Sultan Pahang, Sultan Haji Ahmad Shah Al-Musta'in Billah Ibni Al Marhum Sultan Abu Bakar Riayatuddin Al Muadzam Shah pada tahun 1975, pembacaan warkah pertabalan, pemasyhuran, pemakaian alat kebesaran dan lafaz ikrar taat setia rakyat kepada Baginda Sultan menggunakan laras bahasa istana (Awang Azman Awang Pawi & Hayati Adnan, 2022).

Penggunaan bahasa istana juga dapat dilihat dalam sebahagian dialog filem-filem Melayu seperti *Puteri Gunung Ledang* (Sharifah Nur Mursalins Syed Azmy, 2018), *Nujum Pak Belalang* (Mastura Muhammad, 2006) dan animasi *Puteri Saadong* (Nur Yuhanis Mohd. Nasir, Rahmah Bujang & Eizan Mat Hussain, 2016).

Azura Halid (2022) menyenaraikan tujuan penggunaan bahasa istana. Masyarakat Melayu menggunakan bahasa halus untuk menunjukkan tanda penghormatan kepada raja yang memerintah, bangsa serta budaya Melayu. Bentuk dan gaya bahasa istana yang bersopan menunjukkan keperibadian yang hebat dan ciri berbudi bahasa. Tambahan beliau lagi bahasa istana tidak bertujuan merendahkan martabat rakyat jelata. Malah ia merupakan satu adat, budaya, jati diri dan warisan masyarakat Malaysia yang perlu dipelihara (Zulkeflee Yaacob, 2013). Tengku Intan Marlina Tengku Mohd Ali dan Salinah Jaafar (2016) dipetik menyatakan mahkota dan keris adalah simbol kedaulatan dalam Hikayat Hang Tuah. Begitu jugalah bahasa Melayu dan bahasa istana yang melambangkan kedaulatan suatu negara dan pemerintah.

Menurut Asmah Haji Omar (2016), Bahasa Diraja adalah variasi Bahasa Melayu yang paling halus dan penuh sopan santun dan Malaysia adalah sebuah negara demokratik dan beraja yang semakin meningkat maju. Seajar dengan kemajuan yang dikecapi, masyarakat juga seharusnya mengamalkan sopan-santun dalam interaksi sosial kerana ia adalah lambang sebuah bangsa yang bertamadun.

Kenyataan Media

Pada zaman kesultanan Melayu, utusan kerajaan memainkan peranan penting menjalin hubungan diplomatik antara negeri atau negara (Salmah Jan Noor Muhammad, 2014). Pergantungan kepada seorang utusan yang berkredibiliti itu penting untuk menyampaikan niat raja. Selain daripada utusan, surat-menyurat istana yang dikirim oleh raja kepada raja-raja Melayu ataupun pihak luar turut dikarang oleh pujangga istana atau *bat* (Noriah Mohamed, 1999). Kini kemajuan teknologi telah membolehkan kenyataan media dikeluarkan oleh pejabat Pengelola Bijaya Diraja terus kepada pengamal media dan rakyat jelata.

Kenyataan media mempunyai impak yang penting sebagai wadah komunikasi antara satu pihak dengan pihak yang lain. Menurut Sortino (n.d), kenyataan media ialah satu bentuk dokumen yang mengandungi berita yang dikeluarkan oleh satu pihak untuk dikongsikan bersama pengamal media dan juga orang ramai. Secara amnya sesebuah syarikat, agensi mahupun kerajaan menyebarkan kenyataan media untuk menyampaikan maklumat berkaitan perubahan yang sedang atau telah berlaku (Sortino, n.d) yang mana perubahan ini memberikan impak yang besar kepada sekumpulan orang yang ramai atau mereka yang tidak saling berhubungan (Jacobs & Connor, n.d).

Kenyataan media oleh yang demikian adalah satu wadah yang penting dalam menyampaikan satu bentuk perubahan yang signifikan dan pastinya wajar diberikan perhatian dan penelitian. Walaupun terserlah akan kepentingannya, kajian berkaitan kenyataan media kurang diberikan perhatian dalam kalangan pengkaji tempatan dan tiada kajian yang dicatatkan berkaitan kenyataan media yang dikeluarkan oleh pihak istana.

4. Metodologi kajian

Kajian ini berbentuk kajian tekstual, satu kaedah menghurai dan metafisir mesej yang diperolehi secara bertulis atau visual (Frey, Botan & Kreps, 1999) dengan menggunakan kaedah analisis kandungan kualitatif. Analisis kandungan secara kualitatif melihat teks sebagai satu wadah interpretasi makna tersirat yang mendalam dan subjektif berbanding analisis kandungan kuantitatif yang lebih mementingkan pengiraan dan aspek yang hanya tersurat. Analisis ini

dilakukan melalui pengkodean dan pengkategorian bagi mengenal pasti dan menganalisis tema-tema yang terkandung di dalam teks kenyataan media Istana Negara bertarikh 24 November 2022.

Prosedur analisis kandungan kualitatif secara induktif bermula dengan pemilihan bahan iaitu pemilihan kenyataan media. Kemudian, pemeriksaan dan perbandingan berulang dilakukan bagi proses pengkodean terbuka. Seterusnya, pengelompokan data, pengurangan jumlah kategori dan penggabungan tema yang serupa dilakukan. Setelah mengenal pasti tema-tema yang ada, analisis dilakukan pula dengan melihat maksud kepada data yang telah dikumpulkan.

5. Dapatan dan Perbincangan

Kenyataan Media tersebut dikeluarkan oleh Pengurusan Istana Negara diketuai oleh seorang Ketua Jabatan yang bergelar Datuk Pengelola Bijaya Diraja (Laman Web Rasmi Istana Negara, 2019). Tugas beliau adalah mengeluarkan kenyataan rasmi daripada Kebawah Duli Yang Maha Mulia Seri Paduka Yang di-Pertuan Agong (KDYMM). Intipati yang dipetik oleh pihak media di kebanyakan akhbar adalah tertumpu kepada pelantikan Datuk Seri Anwar Ibrahim sebagai Perdana Menteri Malaysia yang ke-10. Namun, teks media tersebut sebenarnya kaya dengan pelbagai lapisan makna dan maksudnya. Berikut adalah lapisan makna yang telah dikenal pasti menjadi intipati kenyataan media tersebut.

Proses Membuat Keputusan

Kenyataan media kajian memperincikan proses KDYMM Seri Paduka Baginda membuat keputusan tentang pelantikan Perdana Menteri. Pertama, Baginda telah menghadiri dan mempengerusikan Perbincangan Khas Raja-raja Melayu di Istana Negara. Kedua, Baginda telah mewasalkan atau menyampaikan tujuan perbincangan diadakan iaitu meminta pandangan Duli-Duli Yang Maha Mulia Raja-Raja Melayu tentang pelantikan Perdana Menteri baharu susulan daripada Pilihan Raya Umum ke-15 pada 19 November 2022. Pada perbincangan tersebut Baginda mengingatkan bahawa pelantikan Perdana Menteri mestilah, pertama, mendapat kepercayaan majoriti ahli-ahli Dewan Rakyat selaras dengan Perlembagaan Persekutuan Perkara 40(2) (a) yang mana "Yang di-Pertuan Agong boleh bertindak menurut budi bicaranya pada melaksanakan fungsi yang berikut, iaitu melantik seorang Perdana Menteri" dan yang kedua, Perkara 43(2) (a) "Yang di-Pertuan Agong hendaklah terlebih dahulu melantik sebagai Perdana Menteri untuk mempengerusikan Jemaah Menteri seorang ahli Dewan Rakyat yang pada hematnya mungkin mendapat kepercayaan majoriti ahli Dewan Rakyat itu (Perlembagaan Persekutuan, 2009)." Setelah memperhalusi tiat pandangan Duli-Duli Yang Maha Mulia Raja-Raja Melayu dengan penuh cermat dan teliti beserta pemerhatian yang mendalam, Baginda telah membuat keputusan terbaik demi kepentingan dan kesejahteraan negara serta rakyat dengan melantik Yang Berhormat Dato' Seri Anwar bin Ibrahim, Ahli Parlimen P.063, Tambun sebagai Perdana Menteri Malaysia ke-10 selaras dengan Perlembagaan Persekutuan Perkara 40(2)(a) dan 43(2)(a). Setelah itu, kenyataan media telah dihebahkan untuk makluman orang ramai. Akhir sekali, istiadat Pengurniaan Suratcara Pelantikan dan Istiadat Mengangkat Sumpah Jawatan dan Setia serta Sumpah Simpan Rahsia sebagai Perdana Menteri dilangsungkan di Istana Negara pada 24 November 2022.

Proses membuat keputusan ini memperlihatkan kepemimpinan KDYMM Seri Paduka Baginda. Baginda sebagai seorang yang adil dan saksama, tidak membuat keputusan berseorangan. Tanpa dipengaruhi mana-mana parti politik, Baginda mendapat pandangan Raja-Raja Melayu yang tidak berkepentingan dalam membuat keputusan dan mematuhi kuasa Baginda seperti yang diperuntukan di dalam Perlembagaan Malaysia. Seperti yang dilaporkan

Utusan Borneo Online bertarikh 6 Ogos 2017, Sultan Perak, Sultan Nazrin Shah bertitah bahawa raja-raja Melayu lambang kedaulatan negara yang perlu melindungi kepentingan rakyat dari perebutan kuasa yang hanya meretakkan perpaduan. Kebijaksanaan KDYMM Seri Paduka Baginda dalam mengekalkan peranan Baginda sebagai pemimpin yang mengekalkan penyatuan rakyat terserlah melalui proses membuat keputusan ini.

Penggunaan Bahasa Istana

Penggunaan istilah Bahasa Istana dapat dilihat dalam kenyataan media tersebut. Hal Ini demikian, menunjukkan bahawa walaupun kenyataan itu dikeluarkan oleh wakil Istana Negara, Datuk Pengelola Bijaya Diraja, kenyataan itu merupakan kenyataan daripada KDYMM Seri Paduka Baginda. Walau bagaimanapun, Bahasa Istana yang digunakan adalah minimal dan mengikut keperluan bagi memudahkan kefahaman rakyat jelata akan titah Baginda.

Kata ganti diri KDYMM Seri Paduka Baginda yang digunakan adalah 'Baginda'. Perkataan-perkataan lain yang digunakan adalah 'berangkat' (berlepas), 'berkenan' (bersetuju), 'titah' (kata atau perintah), 'menzahirkan' (memberi pandangan) dan 'menyeru' (melaungkan). Penggunaan istilah-istilah Bahasa Istana yang didapati dalam teks adalah dari segi hal-ehwal pelantikan Perdana Menteri di bawah bidang kuasa Raja. Perkataan-perkataan ini melambangkan kehalusan bahasa istana seperti yang dinyatakan oleh Asmah Haji Omar (2016) dan Azura Halid (2022).

Penggunaan istilah Bahasa Arab

Istilah Bahasa Arab yang digunakan di dalam teks selain daripada perlambangan KDYMM Seri Paduka Baginda sebagai ketua agama Islam negara juga mempunyai maksud yang dalam semasa penyampaian sesuatu perkara. Antaranya 'mewasalkan', suatu istilah yang digunakan di dalam pembacaan tajwid bermaksud "to connect, join, unite, combine, interlock" atau dalam Bahasa Melayu 'memanjangkan' (Abdullah, 2022). 'Istiqomah' pula menurut Kamus Dewan (2005) adalah "ketaatan menjalankan sesuatu suruhan secara terus menerus". Rakyat diminta untuk sentiasa bersama berdoa secara berterusan untuk keberkatan, rahmat dan perlindungan agar negara terpelihara dan dijauhi daripada bencana. Ini meletakkan bahawa doa dan usaha rakyat selain pemimpin amat penting dalam memastikan keamanan negara.

Wakil rakyat juga diingatkan untuk 'merapatkan saf', satu istilah yang digunakan semasa umat Islam berdiri tegak bagi mengerjakan solat. Terma ini juga melambangkan disiplin semasa melakukan solat yang seharusnya mempengaruhi kehidupan seharian dalam membina keperibadian dan akhlak yang mulia. Dalam konteks masyarakat Malaysia yang berbilang agama dan bangsa, terma ini bolehlah ditafsirkan sebagai kepentingan bersatu padu antara kaum umpama pepatah lain seperti, 'isi dengan kuku', 'bagai aur dengan tebing' dan 'di mana bumi dipijak, di situ langit dijunjung'. Seperti saf atau barisan yang lurus dengan satu tujuan iaitu mengabdikan diri kepada Yang Maha Esa, semua pemimpin tanpa mengira latar belakang mempunyai tanggungjawab yang sama iaitu menjaga keamanan negara yang tercinta. Perutusan juga diakhiri dengan doa kepada Allah Subhanahu Wata'ala. Hal Ini menunjukkan bahawa pentingnya kita sentiasa berdoa dan bergantung kepada Allah Subhanahu Wata'ala sambil berusaha bersungguh-sungguh bagi melakukan tindakan sebaiknya kerana sebaik-baik perancang adalah Tuhan yang Maha Berkuasa.

Ciri-ciri Kepimpinan

Ciri-ciri kepimpinan Perdana Menteri turut disyorkan oleh KDYMM Seri Paduka Baginda di dalam perutusan rasminya. Perdana Menteri perlulah mendapat 'kepercayaan majoriti' dan 'perkenan' KDYMM Seri Paduka Baginda dan Raja-Raja Melayu. Sesiapa yang dilantik dinasihatkan tidak mendabik dada atas kemenangan kerana 'yang menang tidak semua

menang dan yang kalah tidak semua kalah'. Pelantikannya dilantik demi 'kepentingan dan kesejahteraan negara serta rakyat'. Perdana Menteri juga mestilah menjadi 'pemegang amanah' dan 'memberi perkhidmatan terbaik' kepada negara. Rakyat juga 'tidak wajar dibebankan dengan kemelut politik'. Ahli-ahli Dewan Rakyat disarankan 'hulurkan tangan' bermaaf-maafan sesama mereka dan 'merapatkan saf'. Sekiranya negara tidak dipimpin dengan baik, negara akan menghadapi 'bencana' dan 'musibah'.

Di sini jelas bahawa Baginda amat prihatin akan betapa pentingnya rakyat dipimpin oleh seorang Perdana Menteri yang adil dan saksama. Baginda mengingatkan bahawa jawatan tersebut adalah amanah yang dipertanggungjawabkan ke atas barisan jemaah menteri yang dilantik. Amanah itu memerlukan setiap menteri untuk terus bekerjasama dan saling memaafkan demi kepentingan rakyat.

Penggunaan Peribahasa Melayu

KDYMM Seri Paduka Baginda menggunakan peribahasa Melayu sebagai kiasan dalam kenyataan media Baginda. 'Bagaikan biduk lalu, kiambang bertaut' bermaksud perselisihan faham antara dua pihak yang akhirnya berbaik semula. Biduk melambangkan parti-parti politik yang bertanding semasa pilihan raya. Kiambang pula adalah sejenis tumbuhan yang terapung di dalam air disimbolkan sebagai sejenis tumbuhan yang akan kembali bertaut walaupun ditelusuri biduk ataupun perahu. Perdana Menteri dan kerajaan baharu juga diingatkan mengikut 'resmi padi, semakin berisi semakin tunduk', yang bermaksud apabila tinggi pangkat, seseorang itu semakin merendahkan diri dan tidak sombong. Sifat mengikut 'resmi lalang, makin berisi makin tegak' perlulah di jauhi. Pemilihan unsur alam seperti padi penting kerana ia adalah makanan ruji masyarakat Malaysia dan salah satu sumber ekonomi negara (Noraini Abdul Shukor & Tengku Intan Marlina Tengku Mohd Ali, 2016). Kedua-dua peribahasa ini mengajak pemimpin menjaga adab dan siasah mereka seperti yang dinukilkan dalam adat dan bahasa Melayu, bahasa rasmi Malaysia.

Menurut Zaitul Azma Zainon Hamzah dan Ahmad Fuad Mat Hassan (2011), peribahasa Melayu mempamerkan lima cabang falsafah iaitu kewujudan (metafizik), ilmu pengetahuan (epistemologi), moral (etika), logik dan estetik. Di dalam kertas kerja yang lain Ahmad Fuad Mat Hassan dan Zaitul Azma Zainon Hamzah (2010) menyatakan bahawa penggunaan peribahasa menunjukkan jati diri penuturnya. Siti Haliza Yusop (2016) menegaskan peribahasa mampu membentuk insan yang berkeeterampilan. Tambahan pula beliau menyatakan bentuk bahasa berkenaan berasaskan budaya tempatan dan tidak dipengaruhi oleh budaya asing.

6. Kesimpulan

Kenyataan media Istana Negara bertarikh 24 November 2022 bukan sekadar pengumuman tersurat tentang pelantikan Perdana Menteri ke-10 tetapi lebih kepada pelibatan, titah dan harapan KDYMM Seri Paduka Baginda terhadap Perdana Menteri yang telah dilantik. Kenyataan ini disusun dengan tujuan yang tegas dan jelas tetapi menggunakan bahasa yang cukup lembut dan sopan. Ia melambangkan adat dan budaya masyarakat Malaysia yang penuh sopan-santun. Teks ini telah memperlihatkan peranan aktif KDYMM Seri Paduka Baginda sebagai seorang pemimpin dalam membuat keputusan yang adil dan saksama demi kesejahteraan rakyat. KDYMM Seri Paduka Baginda juga turut memberikan nasihat dan peringatan yang cukup padat kepada Perdana Menteri dan barisan pemimpin lain yang dilantik dan akan dilantik akan tanggungjawab dan amanah yang digalas. Kajian berkaitan kenyataan media di negara ini boleh diperbanyakkan bagi melihat akan kekayaan maksud yang disampaikan melalui wadah ini.

Penghargaan

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**PEMBANGUNAN SISTEM STUDENTS' COMPREHENSIVE ONLINE EXERCISES
(SCORE) SEBAGAI LATIHAN TAMBAHAN BAGI KURSUS MAT112**

**(THE DEVELOPMENT OF STUDENTS' COMPREHENSIVE ONLINE EXERCISES
(SCORE) SYSTEM AS AN ADDITIONAL EXERCISES FOR MAT112 COURSE)**

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ABSTRACT

One of the mechanisms for a student to achieve good results is to do lot of exercises especially for courses involving calculations. There are various exercises available such as the manuals, reference books, or even final examination questions from previous semesters. However, these resources share some common problems to the students. One being too bulky to carry around and also final answers are not provided. With the advancement of technology, it is possible to make learning tools more interactive and accessible to students, and lecturers alike, with the aid of technology to create a platform for a comprehensive e-learning suite. Students' Comprehensive Online Exercises (SCORE) was developed based on the feedback gathered and analysed from the students. This innovation acts as a hub for additional exercises for the Business Mathematics course (MAT112). SCORE was developed using XAMPP that comprises of reliable technologies for Apache web server, MySQL database, and PHP scripting language with the help of a free GPL text editor, Notepad++, for coding. The system is tailored to strictly follow the syllabus and generate various questions and answers easily and systematically. The significance of the system is backed by the feedback from 70 students who have utilised the service with 42.9% strongly

agree while a whopping 57.1% of students agree that the SCORE system provides an easy avenue for them to find additional exercises. In addition, every student agrees that the exercise questions are available faster using this system. Ultimately, 52.9% strongly agree and another 47.1% of the students agree that the system is a good and practical platform for them to master the MAT112 course. This noble initiative from the lecturers will continue to be a springboard for students to jump and master the essence of the MAT112 course.

Salah satu mekanisme untuk mencapai keputusan yang cemerlang bagi seseorang pelajar adalah dengan menggandakan usaha dengan membuat banyak latihan terutama untuk kursus yang melibatkan pengiraan. Terdapat pelbagai sumber latihan yang boleh mereka peroleh antaranya, latihan daripada buku manual, buku rujukan dan soalan-soalan peperiksaan lepas. Walau bagaimanapun, latihan-latihan ini mempunyai kekurangan seperti tiada jawapan akhir dan sukar dibawa ke mana-mana. Dalam peredaran dan revolusi teknologi hari ini mampu menjadikan sumber latihan lebih interaktif dan mudah dicapai oleh pelajar dan pensyarah. Tambahan, kaedah e-pembelajaran semakin pesat dilaksanakan pada masa kini. Maklum balas daripada pelajar telah dikumpulkan dan dianalisa untuk membangunkan sebuah inovasi yang menjadi hub pengumpulan soalan latihan tambahan bagi kursus *Business Mathematics (MAT112)* iaitu sistem *Students' Comprehensive Online Exercises (SCORE)*. Sistem SCORE telah dibangunkan menggunakan aplikasi XAMPP dan Notepad++. Sistem ini dapat menjana pelbagai soalan beserta jawapan dengan mudah dan sistematik serta mengikut sukatan pelajaran yang ditetapkan. Hasil maklum balas daripada 70 orang pelajar, 57.1% pelajar bersetuju dan 42.9% sangat bersetuju bahawa Sistem SCORE memudahkan mereka untuk mencari latihan tambahan, 60% bersetuju dan 40% sangat bersetuju bahawa masa untuk mereka mendapatkan latihan tambahan adalah lebih cepat dengan menggunakan sistem ini manakala 52.9% sangat bersetuju dan 47.1% bersetuju bahawa sistem ini merupakan platform yang bagus dan praktikal untuk mereka menguasai kursus MAT112. Inovasi ini dibangunkan sebagai salah satu inisiatif pensyarah untuk membantu dan menjadi pemudahcara untuk pelajar menguasai kursus MAT112.

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1. Pengenalan

Revolusi komunikasi berteknologi tanpa wayar dan internet berkembang pesat sejak beberapa dekad memberi kesan kepada sistem pendidikan. Contohnya, kemunculan pembelajaran

secara dalam talian sebagai alat yang berpotensi untuk menukar maklumat dan bahan pembelajaran di mana-mana sahaja dan pada bila-bila masa (Urdu & Weggen, 2000). Dunia digital yang semakin meningkat menembusi bidang kemahiran dan pendidikan beransur-ansur digunakan untuk menyampaikan pendidikan, pengetahuan dan kemahiran dengan cara yang baharu dan inovatif (Clement, 2017). Menurut Yoon et al. (2012), dengan kemajuan dan perkembangan alat teknologi, pembelajaran digital (e-pembelajaran) telah dicadangkan oleh Jay Salib pada tahun 1999.

E-pembelajaran dilaksanakan menerusi media elektronik untuk mempelbagaikan kaedah pembelajaran bertujuan memudahkan penyampaian pengajaran jarak jauh, pembelajaran dalam talian atau pembelajaran campuran (Kassymova et al., 2019). Di samping itu, pelajar merasakan mereka lebih faham untuk membuat ulangkaji semasa mereka berada di rumah dengan bantuan alat pembelajaran dalam talian mengikut keperluan mereka sendiri (Livingston & Condie, 2006). Sebastian et al. (2012) menganggap pembelajaran digital sebagai mod pembelajaran yang paling pesat dibangunkan pada tahun-tahun sebelumnya dan juga pada masa akan datang kerana telah memecahkan tradisi pembelajaran secara kebiasaan. Hasil kajian Lin et al. (2016) menunjukkan pembelajaran digital memberi kesan yang lebih positif dalam motivasi dan hasil pembelajaran berbanding dengan pengajaran secara tradisional.

Kebanyakan pelajar dan juga pendidik telah beralih daripada buku nota dan pen kepada alatan berteknologi seperti komputer riba, peranti mudah alih dan aplikasi perisian (EdTech, 2018). Apabila pandemik COVID-19 melanda, pendekatan pendidikan ini lebih dipergiatkan. Sebagai tindak balas kepada norma baharu akibat pandemik ini, inisiatif pendekatan kepada e-pembelajaran telah dimulakan oleh Institusi Pengajian Tinggi Malaysia dengan menandakan pembelajaran terbuka dan jarak jauh (ODL). ODL dilaksanakan dan telah menjadi trend baharu untuk mencapai pendidikan berkualiti, mewujudkan peluang pembelajaran sepanjang hayat, mod kaedah pembelajaran yang fleksibel dan persekitaran pembelajaran yang kondusif. Pelajar perlu menghadiri kuliah dalam talian dan juga pembelajaran dalam talian secara sendiri menerusi kaedah ini (Malaysian Investment Development Authority, 2021).

Selari dengan Malaysia Education Blueprint 2015-2025 (Higher Education) yang menekankan literasi digital sebagai kemahiran pembelajaran abad ke 21, Sistem *Students Comprehensive Online Exercises* (SCORE) telah dibangunkan. Tinjauan dan hasil kaji selidik daripada pelajar juga menjadi pencetus idea kepada penyelidik untuk menjalankan projek membangunkan inovasi SCORE bagi menangani masalah yang dihadapi oleh pelajar terutama kepada pelajar yang mengambil kursus MAT112. Tambahan, aplikasi kepada kaedah pembelajaran secara dalam talian mendorong pelajar menyesuaikan diri dengan teknologi yang ada masa kini. Inovasi SCORE merupakan sistem dalam talian berbentuk digital bagi memudahkan pelajar untuk mencapai latihan tambahan untuk mereka mengulangkaji pelajaran di mana-mana dan bila-bila masa sahaja.

2. Pernyataan Permasalahan

Salah satu komponen utama bagi melahirkan pelajar yang berdaya saing dan intelektual adalah dengan memastikan pelajar menguasai konsep-konsep asas bagi kursus yang diambil agar dapat dipraktikkan pada masa akan datang. Cabaran utama bagi para pelajar dan pensyarah adalah apabila kod kursus tersebut dilihat sebagai kod peperiksaan semata-mata tanpa mendalami ilmu pengetahuan tersebut. Ilmu pengetahuan ini boleh digunakan kelak untuk diadaptasi kegunaannya kepada masyarakat, dan juga penting untuk pembangunan sesebuah negara kerana mahasiswa hari ini adalah tunggak negara pada masa hadapan. Di UiTM Cawangan Kedah, antara kursus yang dilihat mempunyai kadar kegagalan yang tinggi adalah kursus-kursus yang melibatkan pengiraan. Hal ini disebabkan oleh kebanyakan pelajar kurang meminati dan memahami asas matematik itu sendiri. Tambahan pula, topik yang banyak dalam silibus telah menurunkan motivasi pelajar untuk belajar dan memberi kesan kepada

prestasi pelajar. Kemerosotan prestasi bagi kursus yang melibatkan matematik bukanlah isu dalaman malah universiti-universiti di luar negara juga mempunyai permasalahan yang serupa. Terbaru, University of South Australia mengeluarkan satu kajian tentang kemerosotan pelajarannya dalam subjek matematik. Pada 20 tahun lalu, Australia berada di kedudukan ke-11 dunia dalam Program Penilaian Pelajar Antarabangsa (PISA) OECD untuk subjek matematik. Walau bagaimanapun, statistik terbaru menunjukkan kedudukan terkini Australia merosot di tempat ke-29 daripada 38 buah negara (Sciencedaily, 2022).

Justeru, terdapat pandangan yang mencadangkan beberapa kaedah untuk memupuk minat dalam kalangan pelajar, antaranya adalah berbalik kepada pembelajaran secara konvensional, iaitu dengan membuat latihan pada waktu lapang dan menjadikannya sebagai salah satu hobi harian. Terdapat pelbagai sumber latihan yang boleh mereka peroleh, antaranya latihan daripada buku manual, buku rujukan dan soalan-soalan peperiksaan lepas. Walaupun cadangan ini merupakan teknik konvensional, tetapi dengan peredaran dan revolusi IT hari ini mampu menjadikan sumber latihan lebih interaktif dan mudah dicapai oleh pelajar dan pensyarah. Selari dengan permasalahan ini, pembangunan Sistem SCORE dilihat sebagai alternatif bagi menjana soalan-soalan tambahan bagi kursus MAT112. Sasaran utama projek ini adalah mewujudkan satu inovasi baharu untuk para pelajar mendapatkan latihan tambahan sebagai latihan sampingan. Kursus MAT112 telah dipilih untuk melihat keberkesanan sistem SCORE dalam membantu para pelajar untuk lebih cemerlang. Hal ini disebabkan jumlah pelajar yang mendaftar bagi kursus ini adalah lebih tinggi berbanding kursus matematik yang lain. Oleh itu, satu kaji selidik telah dijalankan kepada pelajar UiTM Cawangan Kedah bagi mendapatkan maklumat terperinci berkaitan permasalahan ini. Satu 'Google form' telah diedarkan kepada 120 orang responden yang terdiri daripada para pelajar yang mengambil kursus MAT112 pada semester Mac-Ogos 2022. Hasil dapatan daripada kaji selidik yang dijalankan, didapati bahawa majoriti daripada responden sangat memerlukan latihan tambahan berbentuk digital kerana lebih bersifat mudah alih dan murah jika dibandingkan dengan bahan latihan berbentuk cetakan.

Selain itu, hasil kaji selidik tersebut juga mendapati bahawa kebanyakan pelajar memerlukan bahan pembelajaran dalam bentuk sistem yang dapat dijana secara automatik. Berdasarkan kaji selidik yang dijalankan, terdapat beberapa isu penting yang perlu diberi perhatian, antaranya adalah keperluan kepada nota ringkas, latihan tambahan berbentuk digital serta penggunaan bahan pembelajaran dalam bentuk cetakan dan digital. Kejayaan para pelajar dalam pembentukan sahsiah dan akademik merupakan nadi dalam sesebuah universiti. Justeru, pihak pengurusan atasan perlu cakna dalam menangani isu ini bagi mendukung konsep Pendidikan 5.0 di dalam sistem pendidikan di peringkat universiti. Di samping itu, kadar peratusan pelajar menamatkan pengajian pada masa yang ditetapkan (GOT) merupakan matlamat dan kayu ukur prestasi sesebuah universiti. Bagi merealisasikan matlamat ini, satu inovasi baharu perlu dibangunkan bagi mengatasi kekangan yang dihadapi oleh para pelajar. Pembangunan sistem latihan yang dapat dijana secara automatik, iaitu sistem SCORE adalah bertepatan dan sesuai diaplikasikan sekali gus membantu para pelajar serta memudahkan pensyarah dalam proses pengajaran dan pembelajaran bagi kursus MAT112. Diharapkan sistem ini mampu memberi impak yang positif secara keseluruhannya kepada semua pengguna mahupun idea kreatif dan inovasi itu sendiri.

3. Kaedah Pembangunan Sistem

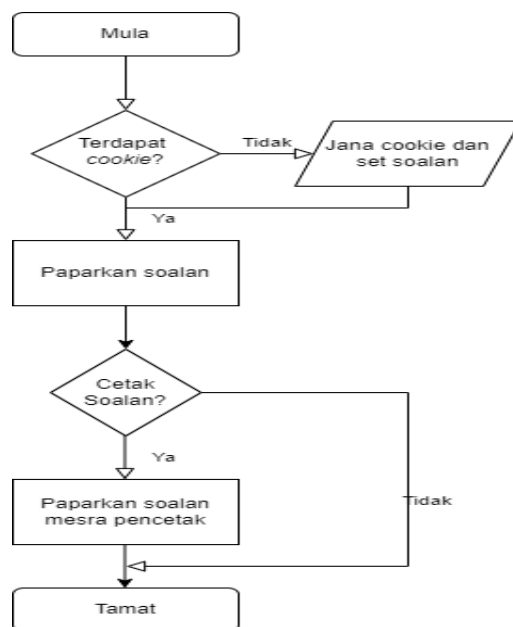
Fasa pertama

Proses pembangunan SCORE bermula dengan mengenal pasti kekurangan buku rujukan dan manual sedia ada serta kekurangan sistem 'Electronic Question Paper System' (EQPS) yang merangkumi soalan-soalan peperiksaan akhir. Didapati bahawa rujukan sedia ada mempunyai jumlah latihan yang terhad dan terdapat hanya satu contoh soalan untuk setiap bentuk soalan. Sistem 'Electronic Question Paper System' (EQPS) pula merangkumi soalan-soalan yang bukan berbentuk topikal. Di samping itu, soalan-soalan ini juga tidak mengandungi kesemua sub-topik yang dipelajari serta tiada formula spesifik yang diberikan untuk setiap jenis soalan. Jawapan juga tidak diberikan untuk pelajar menyemak jawapan akhir mereka. Berdasarkan soal selidik yang telah dijalankan, sebuah sistem yang mempunyai ciri-ciri berikut telah dibangunkan:

- Soalan dijana secara automatik dan berbeza untuk setiap pelajar.
- Tidak memerlukan cetakan namun boleh dicetak sekiranya perlu.
- Lebih relevan dengan situasi semasa (penyediaan bahan pengajaran dan pembelajaran secara elektronik).
- Platform latihan berpusat.
- Mudah dikemaskini oleh pembangun agar sentiasa memberikan soalan yang terkini mengikut sukatan mata pelajaran.

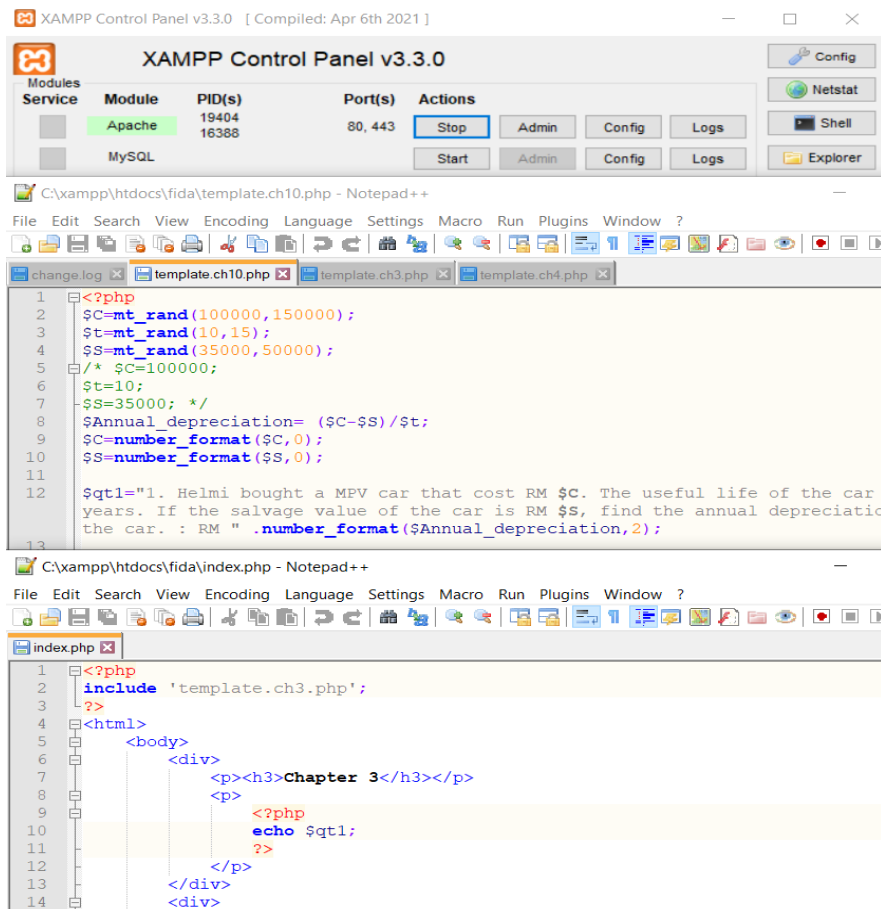
Fasa Kedua

Selepas sumbang saran cadangan penyelesaian dan analisis cadangan inovasi, sistem soalan automatik telah dibangunkan menggunakan aplikasi XAMPP dan Notepad++. Rajah 1 menunjukkan carta alir proses pembangunan sistem SCORE.



Rajah 1. Carta Alir Sistem SCORE

Sistem automatik ini bermula dengan mengenal pasti sama ada sudah terdapat cookie* di dalam komputer pengguna. Sekiranya tiada, sistem akan menjana cookie dan set soalan baharu yang disimpan di dalam pangkalan data. Sekiranya telah terdapat cookie di dalam komputer pengguna, soalan sedia ada akan dipaparkan di skrin pengguna. Seterusnya, pengguna memilih sama ada untuk mencetak set soalan yang dipaparkan atau tidak. Sekiranya pengguna memilih untuk mencetak, pengguna akan memilih butang mesra pencetak ('printer-friendly page') yang terdapat pada sistem. Sekiranya tidak, penggunaan sistem SCORE tamat. Set soalan ini telah disediakan oleh pensyarah-pensyarah yang mengajar kursus MAT112 ini dan mempunyai pengalaman mengajar lebih daripada 10 tahun.



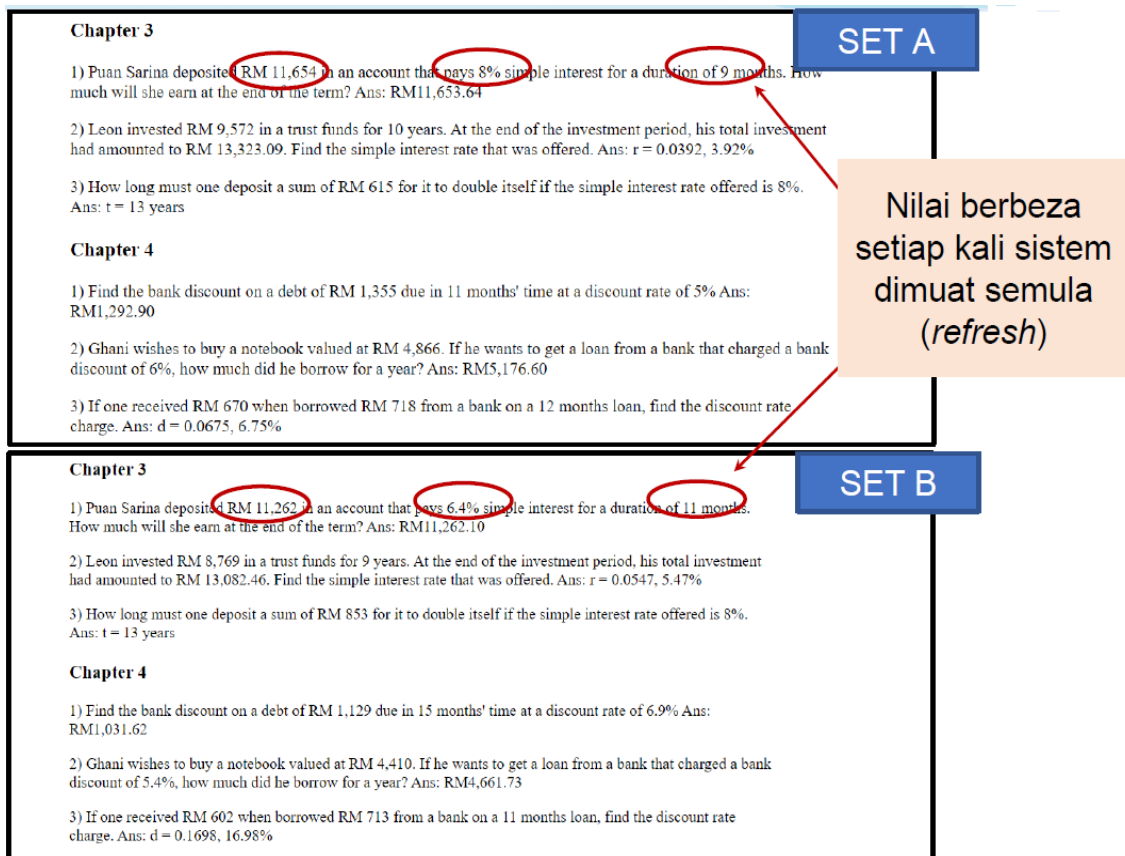
Rajah 2. Contoh Pengekodan SCORE

* Cookie dicipta apabila pengguna melawat tapak web dan laman web tersebut menggunakan cookie untuk menjejaki pergerakan pengguna. Setiap kali pengguna melawat tapak web, pelayar menghantar nilai cookie ke pelayan untuk memberitahu pengguna sebelumnya kepada pelayan (Peterson & Boonthum-Denecke, 2019).

Rajah 2 di atas menunjukkan contoh pengekodan sistem SCORE menggunakan aplikasi XAMPP dan Notepad++. XAMPP ialah singkatan untuk cross-platform, Apache, MySQL, PHP dan Perl. XAMPP membolehkan pengguna membina halaman sendiri di luar talian. Notepad++ digunakan untuk penyunting teks dan penyunting kod sumber di bawah Microsoft Windows. Ia menyokong sekitar 80 bahasa pengaturcaraan dan sintaks.

Fasa ketiga

Fasa ketiga merangkumi tiga peringkat ujilari sistem automatik SCORE. Rajah 3 menunjukkan ujilari pertama yang menfokus kepada proses menyemak soalan beserta jawapan. Sebarang kesalahan penjanaan soalan beserta dengan jawapan dikenal pasti di dalam proses ini. Setiap soalan juga perlu memaparkan nilai-nilai yang berbeza setiap kali soalan dijana semula. Sebarang penambahbaikan disenaraikan dan telah dilaksanakan sebelum ujilari yang kedua.



Rajah 3. Cadangan Penyelesaian (Model 1)

Ujilari kedua melibatkan pembangunan *interface* atau paparan muka sistem SCORE serta penambahbaikan dari segi URL sistem, serta fungsi-fungsi lain sistem ini seperti:

- Menyediakan 'drop-down menu' apabila topik tersebut dipilih.
- 'Printer-friendly page' yang membolehkan kesemua topik dicetak/dimuat turun.
- Menambah butang menu untuk menjana soalan baharu.
- Paparan lebih mudah dilihat di mana jawapan di'**bold**' agar lebih mudah dibezakan dengan soalan

Walau bagaimanapun, terdapat beberapa kekurangan lain seperti soalan setiap topik tidak dapat dicetak dan pengguna perlu mencari rujukan lain untuk mencari formula.

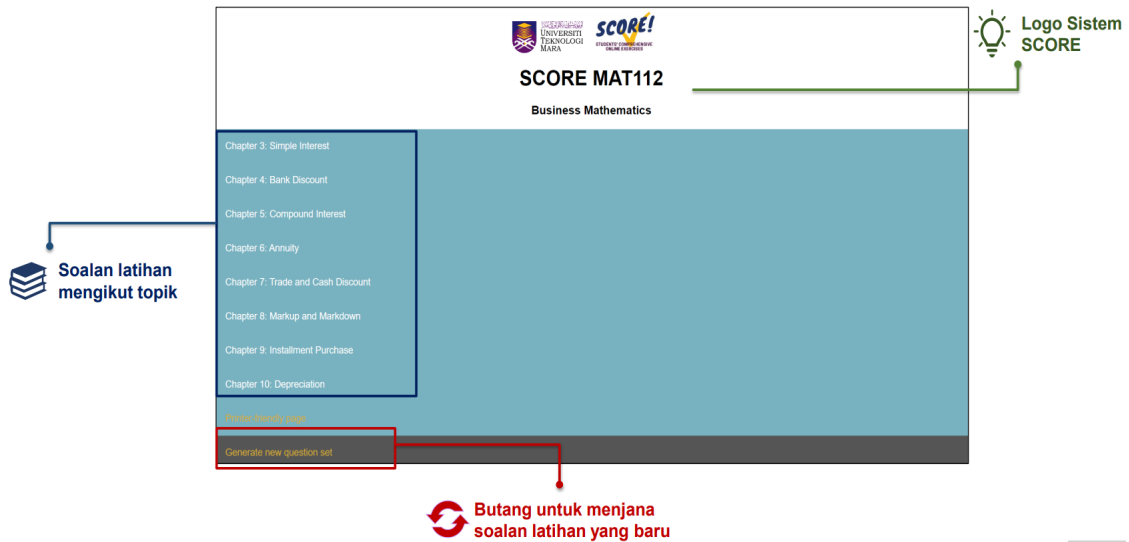
Ujilari ketiga merupakan peringkat terakhir untuk mencapai objektif sistem SCORE ini, iaitu mewujudkan sebuah sistem yang mesra pengguna dan menjadi platform latihan MAT112 secara berpusat. Kekurangan sistem ini telah ditambah baik dengan meletakkan penerangan beserta formula untuk setiap topik. Setiap topik juga boleh dicetak atau dimuat turun mengikut pilihan pengguna.

4. Keberhasilan Projek

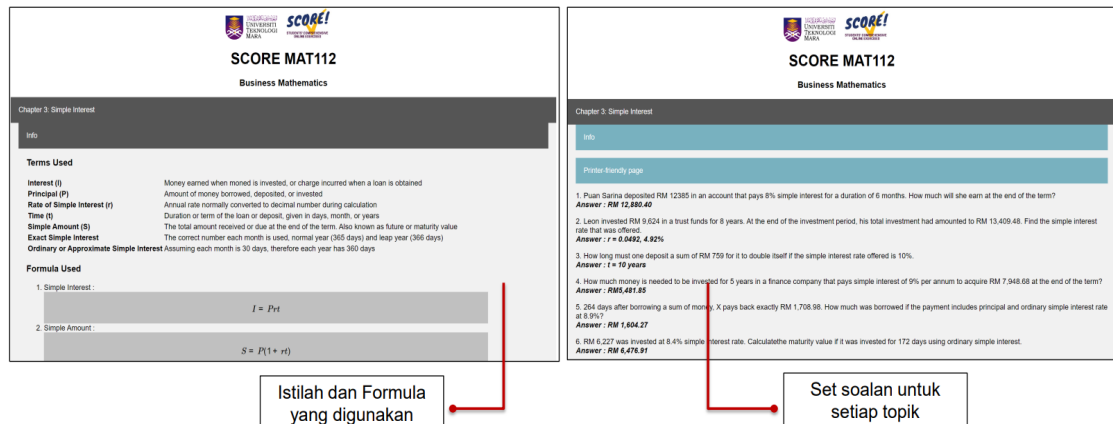
Perubahan yang pesat dalam bidang pendidikan dapat dilihat di era globalisasi dan dunia tanpa sempadan pada masa kini. Pendidikan yang bersifat tradisional telah beralih kepada integrasi berteknologi. Banyak sistem, aplikasi dan inovasi dihasilkan untuk menangani kekurangan dan masalah dalam pendidikan justeru memberikan impak yang positif kepada semua yang terlibat. Bagi memastikan Pengajaran dan Pembelajaran (PdP) yang berkualiti, Dasar PdP UiTM dirangka bertujuan memandu pembangunan, pelaksanaan dan pengurusan PdP UiTM. Seajar dengan dasar tersebut, sistem SCORE telah dibangunkan. Sistem ini dibangunkan untuk memberi manfaat dan memudahkan pelajar mencari latihan tambahan, khususnya untuk kursus MAT112.

Sistem SCORE telah menjalani beberapa fasa ujilari sebelum digunakan. Setelah ditambah baik, hasil akhir pembangunan sistem ini dapat dilayari pada pautan <https://cskedah.uitm.edu.my/score>. Inovasi pembangunan sistem ini telah memudahkan pelajar serta pensyarah kerana sistem ini merangkumi lapan topik utama silibus MAT112 secara berpusat dan semua soalan latihan dapat diperolehi menerusi satu platform sahaja. Sistem SCORE juga dapat menjana soalan latihan dengan pantas serta set soalan yang berbeza. Inovasi ini memberi nilai tambah dalam bentuk penjimatan masa kerana proses kerja yang diperuntukkan oleh pelajar untuk mendapatkan latihan tambahan menggunakan sistem SCORE adalah lebih mudah dan cepat berbanding dengan sistem EQPS (*Electronic Question Paper System*) mahupun buku manual dan rujukan. Penggunaan gajet seperti telefon pintar, tab dan komputer riba adalah semakin meluas dalam kalangan pelajar pada masa kini. Projek inovasi ini mampu membantu pelajar untuk mengulang-kaji pelajaran kerana sistem ini lebih fleksibel dan boleh diakses di mana sahaja.

Rajah 4 dan rajah 5 menunjukkan paparan dan ciri-ciri yang terdapat dalam inovasi SCORE. Nota dan maklumat ringkas disediakan pada pengenalan setiap topik diikuti dengan set soalan. Jawapan akhir diberikan bagi setiap soalan untuk membantu pelajar menyemak jalan kerja dan jawapan mereka. Keistimewaan inovasi SCORE ini dicirikan dengan butang 'generate new set question' untuk menjana set soalan yang baru. Lebih daripada 50 soalan yang boleh dijana dengan sekali ketik pada butang tersebut. Soalan-soalan yang terdapat dalam sistem ini akan disimpan selama 30 hari di dalam pangkalan data, kecuali sekiranya pengguna menjana set soalan yang baharu.



Rajah 4. Paparan Muka Hadapan dan Ciri – ciri Inovasi Sistem SCORE

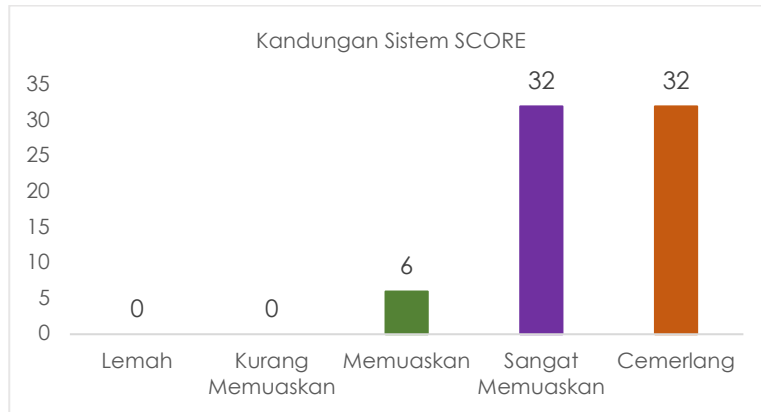


Rajah 5. Contoh Paparan kepada Pengenalan dan Soalan Setiap Topik

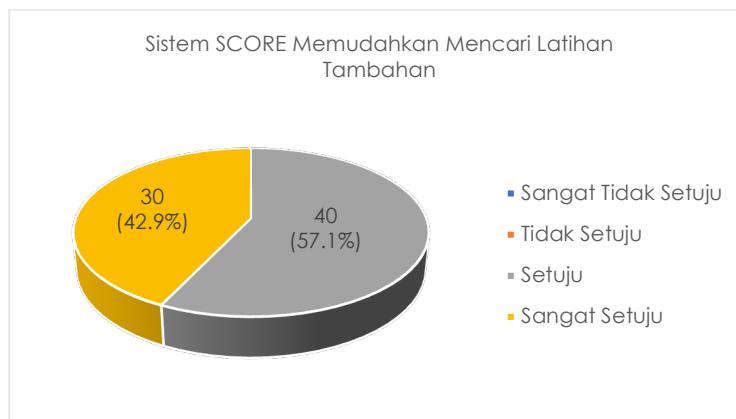
Para pensyarah telah mempromosikan sistem ini kepada pelajar setelah sistem tersebut sedia untuk digunakan. Maklum balas daripada pelajar juga telah diperolehi setelah mereka mengakses sistem SCORE. Rajah 6 sehingga rajah 9 menunjukkan keputusan maklum balas pelajar terhadap sistem SCORE. Daripada 70 orang responden, 32 orang pelajar (45.7%) telah memilih skala cemerlang dan 32 orang pelajar (45.7%) juga telah memilih skala sangat memuaskan bagi kandungan sistem SCORE. Akan tetapi, 6 orang pelajar (8.6%) menyatakan kandungan sistem SCORE adalah memuaskan. Selain itu, 57.1% pelajar bersetuju dan 42.9% sangat bersetuju bahawa Sistem SCORE memudahkan mereka untuk mencari latihan tambahan. Ini disokong dengan pandangan pelajar bahawa sistem ini memudahkan mereka kerana soalan-soalan di dalam sistem ini telah mengikut turutan topik yang mereka pelajari. Tambahan pula, latihan di dalam SCORE merangkumi semua topik untuk peperiksaan akhir kursus MAT112.

Di samping itu, 60% bersetuju dan 40% sangat bersetuju bahawa masa untuk mereka mendapatkan latihan tambahan adalah lebih cepat dengan menggunakan sistem ini. Pelajar hanya perlu menekan pautan yang diberikan dan mereka tidak perlu mendaftar masuk ke

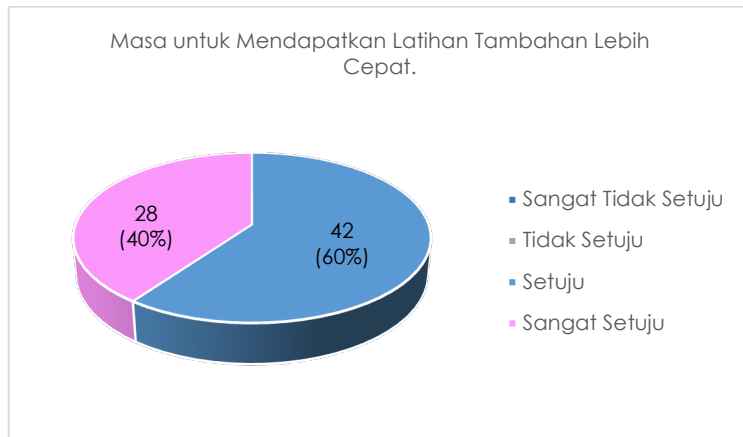
dalam sistem SCORE. Mereka juga memberi pendapat di mana sistem ini membantu mereka menjelang peperiksaan akhir kerana mereka tidak perlu mencari latihan tambahan lain. Maklum balas daripada pelajar juga menunjukkan 52.9% sangat bersetuju dan 47.1% bersetuju bahawa sistem ini juga merupakan platform yang bagus dan praktikal untuk mereka menguasai kursus MAT112. Hal ini disokong dengan ulasan pelajar bahawa soalan di dalam sistem ini disertakan dengan jawapan akhir, maka mereka lebih yakin dengan menyemak jawapan yang diberikan. Di samping itu, set soalan yang dijana juga mempunyai bentuk soalan yang berbeza dan mereka boleh mengulangkaji dan membuat latihan berulang kali.



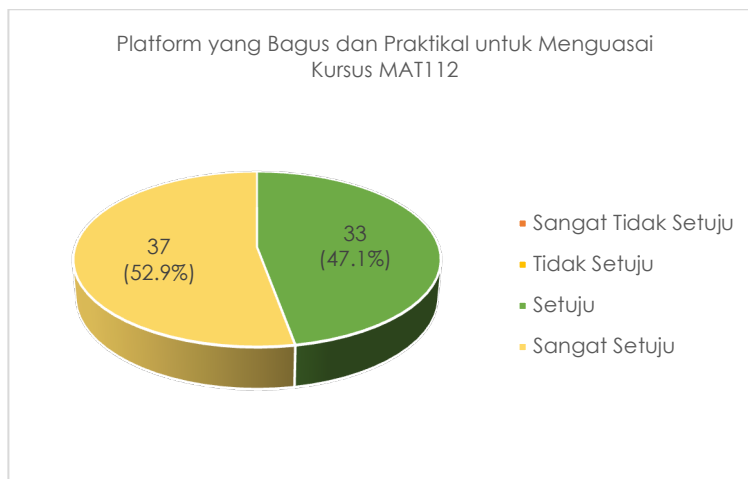
Rajah 6. Maklum Balas Responden terhadap Kandungan Sistem SCORE



Rajah 7. Maklum Balas Responden Terhadap Sistem SCORE



Rajah 8. Maklum Balas Responden Terhadap Sistem SCORE



Rajah 9 . Maklum Balas Responden Terhadap Sistem SCORE

Bagi menyokong hasil pembelajaran yang dijangka, pengajaran menggunakan alatan, kaedah dan platform yang sesuai perlu dilaksanakan secara inovatif dan responsif kepada keperluan pelajar. Menerusi penyelidikan, perkongsian ilmu, rujukan kepada amalan terbaik, refleksi dan lain-lain aspek diterapkan untuk meningkatkan kualiti pengajaran (Universiti Teknologi MARA, 2021). Adalah menjadi amalan terbaik di mana pengajaran melibatkan perancangan, reka bentuk, serta pelaksanaan aktiviti yang dirangka untuk memastikan hasil pembelajaran tercapai. Sistem SCORE dibangunkan sebagai salah satu inisiatif pensyarah untuk membantu dan menjadi pemudahcara untuk pelajar menguasai kursus *Business Mathematics* (MAT112). Sistem ini diharapkan dapat membantu pelajar mengulangkaji pelajaran untuk peperiksaan akhir dan mengurangkan peratusan kegagalan kursus.

5. Kesimpulan

Peranan serta kepentingan ilmu matematik tidak dapat disangkal lagi dalam kehidupan dan aplikasi sehari-hari masa kini. Pelbagai bidang menggunakan konsep dan teori daripada matematik, termasuk bidang kejuruteraan, meteorologi, perbankan dan kewangan, ekonomi, sistem dinamik dan kecerdasan buatan (AI). Perkembangan ilmu pengetahuan dari semasa ke semasa berjaya membawa manusia pada sebuah era yang maju, yakni era teknologi digital. Penerapan teknologi digital kini sudah terbuka luas dalam semua sektor termasuk sektor pendidikan. Penekanan literasi digital sebagai kemahiran pembelajaran abad ke-21 dalam Malaysia Blueprint 2015-2025 membawa kepada pembangunan sistem SCORE.

Bagi UiTM Cawangan Kedah, Sistem SCORE dilihat sebagai salah satu usaha dan kaedah bagi membantu para pelajar cemerlang dalam kursus MAT112. Sistem SCORE merupakan satu projek inovasi bagi membolehkan para pelajar mendapatkan soalan tambahan untuk kursus MAT112. Melalui pembangunan sistem ini, para pelajar boleh menjana soalan yang berbeza sebagai latihan tambahan. Pemilihan kursus MAT112 sebagai subjek untuk membangunkan sistem SCORE adalah disebabkan oleh jumlah pendaftaran pelajar yang ramai berbanding kursus-kursus lain. Keperluan kepada pembangunan sistem SCORE ini diperhalusi dengan mengambil kira maklum balas 120 responden melalui kaji selidik yang dijalankan ke atas pelajar yang mengambil kursus MAT112. Dapatan kaji selidik menunjukkan majoriti responden memerlukan latihan tambahan berbentuk digital kerana bersifat mudah alih dan murah.

Kaedah pembangunan sistem SCORE melibatkan tiga fasa, iaitu mengenal pasti kekurangan manual sedia ada dan sistem EQPS, pembangunan sistem soalan automatik menggunakan XAMPP dan Notepad++, dan uji lari sistem automatik SCORE. Keberhasilan sistem SCORE ini membantu memudahkan pelajar dan pensyarah memperoleh soalan tambahan menerusi satu platform sahaja. Penjanaan set soalan yang pantas memberi nilai tambah dalam bentuk penjimatan masa. Projek inovasi ini juga dapat membantu pelajar mengulang kaji pelajaran kerana terdapat nota ringkas dan formula, set soalan beserta jawapan akhir dan boleh diakses di mana sahaja. Untuk memperoleh set soalan yang baharu, pengguna hanya perlu menekan butang '*generate new set question*' sahaja. Selepas pembangunan sistem, maklum balas daripada pelajar diperoleh setelah mereka mengakses sistem tersebut. Hasil maklum balas menunjukkan pembangunan sistem SCORE ini memudahkan pelajar mencari dan mendapatkan latihan tambahan dengan lebih cepat.

Penghargaan

Artikel ini dihasilkan atas penglibatan kumpulan kami (The Merboks) dalam Konvensyen Kumpulan Inovatif dan Kreatif ((KIK) peringkat Zon Utara 2022. Setinggi-tinggi penghargaan diberikan kepada Unit Pengurusan Kualiti, UiTM Cawangan Kedah dan juga pengurusan tertinggi UiTM Cawangan Kedah atas galakan dan sokongan untuk kami meyerai pertandingan KIK ini. Tidak lupa juga ucapan terima kasih diucapkan kepada Institut Kualiti & Pengembangan Ilmu (InQKa) yang memberi peluang kepada kami dalam berkongsi idea kreatif ini. Akhir sekali, jutaan terima kasih diucapkan kepada semua yang terlibat secara langsung atau tidak langsung dalam penghasilan inovasi SCORE dan juga artikel ini.

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ONLINE TEACHING-LEARNING IN HIGHER EDUCATION DURING THE LOCKDOWN PERIOD OF THE COVID-19 PANDEMIC

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ABSTRACT

The Novel Coronavirus Disease 2019 (COVID-19) has caused the closure of the whole educational system from kindergarten to tertiary levels worldwide. This study presents a qualitative study that examines the various forms of online distance learning modes adopted during the COVID-19 pandemic by lecturers in the Faculty of Accountancy, Universiti Teknologi MARA Kedah. This paper seeks to find out the perceptions of lecturers and students on online distance learning and the challenges faced by them during the COVID-19 pandemic. All lecturers and students of the Faculty of Accountancy, Universiti Teknologi MARA Kedah were the population of the study and they the interviewees were sampled using convenience sampling technique. This study is descriptive and exploratory in nature, with the data obtained from a semi-structured interview. The findings revealed that the major challenge during online distance learning was the unstable internet connection. The findings is significant in helping lecturers and educational institutions to understand students' challenges regarding online learning. Higher education institutions are recommended should consider and solve the challenges faced by lecturers and students.

1. Introduction

Coronavirus disease 2019 (COVID-19), a novel pneumonia disease which was first detected in Wuhan, was confirmed by the World Health Organization on January 12, 2020, before becoming an outbreak in all countries (Umaira et al., 2020). Soon, the virus spread rapidly around the world because the virus can be transferred through respiratory droplets and direct or indirect contact with the mucous membranes of the eyes, mouth, and nose (Umaira et al., 2020), making it contagious among humans. . The virus has caused major outbreaks of COVID-19 disease with severe effects worldwide (Shahzad et al., 2020). WHO has declared COVID-19 as a pandemic and resulted in a global shutdown of several activities including educational activities (Adedoyin & Soykan, 2020).

The Malaysian government took all necessary measures and actions in the effort to combat and curb the pandemic but less aggressively (Azah et al., 2020). For instance, a strict screening process at all airports in Malaysia was enforced after the first case outside China was reported in Thailand (Azah et al., 2020). However, the government still kept their borders open to visitors with a lack of screening at entry points and left those with infected status to enter freely into the country (Azah et al., 2020). As a result, on January 25, 2020, Malaysia recorded its first COVID-19-positive case (Azah et al., 2020; Umaira et al., 2020). Then, on April 14, 2020, Malaysia reported two waves of COVID-19 cases, with the first wave ending successfully within less than 2 months. In early March 2020, the second wave occurred with an exponential spike due to a massive religious gathering in Petaling Jaya Mosque involving thousands of participants from more than 15 different countries. These new cases were found to have been in contact with an individual, who had attended at least five different meetings with a travel history to Shanghai, China (Azah et al., 2020; Umaira et al., 2020).

On 18 March 2020, a Movement Control Order (MCO) was executed to aid the effort of the Ministry of Health (MOH) in combating the spread and death tolls under control caused by the COVID-19 in Malaysia (Azah et al., 2020; Mazlan et al., 2020). The first phase of MCO started on 18th of March to 31st of March 2020 lasted for 14 days. The MCO restricted the movement of people into or out of an area (Umaira et al., 2020). The sudden enforcement of the MCO by the government put various sectors of the economy in jeopardy when all Malaysians were instructed primarily to stay indoors (Azah et al., 2020). Consequently, the MCO affected the closure of all facilities as well as the education sector from preschools to universities except for primary and essential services such as health services, water, electricity, telecommunication and food supply companies (Yassin, 2020). All students were unable to go to schools or universities. According to UNESCO (2021), the COVID-19 outbreak affected 177,208,409 learners at pre-primary, primary, and secondary levels as well as at tertiary education levels around the world.

The first wave of the COVID-19 pandemic has required universities to close face-to-face classes and send students home. This Situation has left universities to resort to the introduction and implementation of courses through online portals and online distance learning (Shahzad et al., 2020; Malaysian Investment Development Authority, 2021). On 18 March 2020, all students of Universiti Teknologi MARA were instructed to go home after two weeks of beginning the new semester. Some of them were sent safely home by the management of Universiti Teknologi MARA and all traditional face-to-face classes in Universiti Teknologi MARA were cancelled. While waiting for the first MCO to end, many lecturers and students were speculating on whether they can come back to campus to continue the learning process for the semester. Nevertheless, the MCO continued to the second phase for another 14-day period commencing on 1 April 2020. As a result, Universiti Teknologi MARA has shifted all physical classes to open and distance learning

(ODL) mode effective from 13 April 2020, for three semesters at the moment (Abu Karim, 2020; Musa et al., 2020).

In light of this issue, this study employs a qualitative approach to investigate the modes adopted by the lecturers of Universiti Teknologi MARA for the teaching-learning process, highlighting the implementation process of online distance learning modes and the perceptions of lecturers and students on online distance learning modes during COVID-19 pandemic. Furthermore, this study explores the challenges faced by lecturers and students in adapting to the online distance learning process during the COVID-19 pandemic.

2. Literature Review

2.1 Implementation of Online Distance Learning

Before the COVID-19 pandemic, most universities offered online courses, or e-learning, for their students on and off campus. Malaysian Investment Development Authority (MIDA) (2021) defined "e-learning as a technology trend that provides the opportunity for lifelong learning and requires digital literacy readiness". Furthermore, Shahzad et al. (2020) explained further that "e-learning is covered under a larger term of technology-based learning through websites, learning portals, video conferencing, YouTube, mobile apps, and a thousand types of free available websites for blended learning tools".

In Malaysia, the government is currently providing many resources to implement E-learning in higher education institutions such as Massive Open Online Courses (Malaysian Investment Development Authority (MIDA), 2021). The Malaysia Education Blueprint 2015-2025 (Higher Education) highlighted the importance and priorities of digital literacy, critical thinking and problem-solving as 21st-century learning skills that will help students thrive in IR4.0 (MIDA, 2021). According to MIDA (2021), there is a total of nine educational institutions have been operating primarily as ODL Universities which are Open University Malaysia (OUM), Wawasan Open University (WOU), GlobalNxt University, Asia E-University, Veritas University College, UNITAR International University, Universiti Tun Abdul Razak (UNIRAZAK), Al-Madinah International University (MEDIU) and Genovasi University College. The earliest e-learning institution in operation since 2001, located in Petaling Jaya, Kuala Lumpur is Open University Malaysia. However, other private and public universities also had selectively offered some ODL mode programmes to complement full-fledged physical programmes. Hence, online distance learning was not fully operated without face-to-face meetings between lecturers and students. The learning process is known as blended learning (BL). The most important aspect of BL is a combination of both face-to-face and online teaching and learning (Jamalpur et al., 2021).

The unprecedented outbreak of the COVID-19 pandemic has contributed to the rapid and wide practices of e-learning. In response to the new normal resulting from the pandemic, Malaysia's higher learning institutions have jump-started their initiatives in adopting the e-learning approaches, representing the Open and Distance Learning (ODL) practices. ODL has been an emerging trend to access quality education, create lifelong learning opportunities, practise flexible modes of learning methods and offer a conducive learning environment for young school leavers, university communities and the working population. Students were expected to participate in online lectures, tutorials and self-directed online learning. In contrast to physical tests, online tests and assignments may even allow students to instantly review their marks and obtain feedback to improve their next sittings (Malaysian Investment Development Authority, 2021).

Globally, many universities shifted to online distance learning during the COVID-19 pandemic (Aguilera-Hermida, 2020). In addition, Ali (2020) stated that many universities are either closed physically or are moving towards online distance learning. With a short notice, many university lecturers started discovering all forms available for video-conferencing applications and platforms (Oyedun, 2020). The video-conferencing applications and platforms for online distance learning are Google Meet, Zoom, Cisco Webex and Microsoft Teams. While mobile applications for communication such as WhatsApp and Telegram were used in addition to platforms proposed by the university.

Online distance learning worked as an alternative to resume the education process during the COVID-19 pandemic. Previous studies have reported online distance learning brought benefits to education sectors. A study by Oyedun (2020) agreed that online distance learning has proven to be a good transition and worked as a mechanism for the accomplishment of the semester during this COVID-19 pandemic. Thus, online distance learning brings a lot of benefits to students and lecturers as well as universities. Oyedun (2020) postulated some of the benefits of this transition, including: 1) the optimization of online resources, 2) the accessibility to live cloud recordings of teachings, meetings, lectures, and other interactions, 3) the exploration of various technological learning options and other online tools for instruction and learning and the development of blended learning, and 4) The opportunity to work remotely, which allows both lecturers and students to continue engagement outside the classroom. As a result, it increases the use and utilization of available resources (Oyedun, 2020). In the same vein, Bdair (2021) found that the advantages of online distance learning included a flexible learning environment, academic achievement, and student-centered learning.

However, the success of online distance learning depends much on the stability of internet connections and devices. Accordingly, Wan (2020) proposed that the prerequisite to learning via the online platform would be to have internet and a device such as a computer, laptop, tablet or smartphone. But, Wan (2020) found that children have to share devices and they could not fully utilize the online lessons due to their poor internet connections or lack of devices, especially in rural areas of Malaysia. This showed that the Malaysian education system is lacking in terms of digital preparedness (Wan, 2020).

Another study by Chang and Fang (2020) summarized the difficulties and solutions of online learning from teachers' Chinese Network of Internal Quality Assurance Agencies in Higher Education. The study reported that even though most teachers prepare the contents of instructions well, it is still not an easy task to monitor and change the students' learning behaviours in such a short term. This view is supported by Shahzad et al. (2020) who found in his study that males and females have different levels in terms of attitudes toward E-learning portals in Malaysian Universities. The study implied that female students are more focused on the E-learning portal compared to male students.

Furthermore, the sudden implementation of online distance learning during the COVID-19 pandemic is currently facing different kinds of challenges for lecturers and students. Online distance learning arose abruptly with no preparation. A few recent research studies have explored the challenges associated with e-learning during pandemics (Adedoyin and Soykan, 2020; Aguilera-Hermida, 2020; Bdair, 2021; Khalil et al., 2020; Nassr et al., 2020; Oyedun, 2020;). Some of the challenges are a lack of resources, poor national infrastructure, course delivery problems, problems faced by students, and cybersecurity problems (Oyedun, 2020). Whilst Aguilera-Hermida (2020) categorized types of challenges into three categories namely situational and environmental, online educational, and emotional challenges. Additionally, Bdair (2021) suggested that the challenges in conducting ODL were inadequacy, academic integrity, learning environment, and family burden. In short, challenges include a lack of resources, poor infrastructure, course delivery problems, student issues, and cybersecurity.

A few studies have examined the effectiveness of online distance learning in Malaysia (Mazlan et al. 2020; Musa et al. 2020). A study by Musa et al. (2020) proposed an effective strategy to conduct online distance learning (ODL) in UiTM through the perspective of ODL interaction, motivation, students' performance and ICT and technology support system. Besides that, numerous previous studies examined the attitudes towards online distance learning from the students' perspectives (Aguilera-Hermida 2020; Bestiantono, Agustina, & Cheng 2020; Khalil et al. 2020; Nassr et al. 2020; Wai Yee & Cheng Ean 2020). For instance, Khalil et al. (2020) carried out an exploratory study to determine medical students' perceptions regarding online learning methods implemented during the ongoing Covid-19 pandemic in the Kingdom of Saudi Arabia. The study found that the perception of students was generated into four core themes which are educational impact, time management, challenges encountered, and preferences for the future.

To ensure the effectiveness of online distance learning among students and lecturers, adequate hardware or gadgets at home and high accessibility to internet connections throughout the country are very much required to increase digital literacy among students (MIDA, 2020). However, Ali (2020) indicated that the transition to online learning on a large scale is a very difficult and highly complex undertaking for education systems. Even though some universities had applied e-learning as supplementary teaching material and a process to use in face-to-face classes before COVID-19, most of them were not ready for a full online experience (Coman et al., 2020; Wan, 2020). Consequently, some universities have suspended learning and teaching processes due to the lack of information technology infrastructure for both students and teachers (United Nations, 2020). Wan (2020) stated that this technological issue affects most countries worldwide. Furthermore, many lecturers are not technology savvy and are forced to familiarize themselves with the technology to conduct their classes online (Wan, 2020). Currently, online distance learning has become the only method for teaching students. Universiti Teknologi MARA nationwide campuses have used this online distance learning to continue the learning and teaching processes.

However, most of the previous studies quantitatively examined the perception of students in the context of online learning (Coman et al., 2020). On the other hand, this study explores the perception of online distance learning from lecturers' and students' perspectives using the qualitative method. This study provides a wide perspective of online distance learning from both lecturers and students. In addition, this study also explores modes adopted by the lecturer of Universiti Teknologi MARA for the teaching-learning process and highlights challenges faced by the lecturers and students in adapting to the online distance learning process during the COVID-19 pandemic. It is important to know the perception of lecturers and students, as well as the challenges faced by them in ensuring the effectiveness of online distance learning implementation.

2.2 Theoretical Grounding

In a previous study, Jogezi et al. (2021) applied the theory of reasoned action to investigate teachers' attitudes toward social media use amid the COVID-19 pandemic. The study used Fishbein and Ajzen's (1975) Theory of Reasoned Action (TRA) as a theoretical framework. The theory encompasses the links between behavioral intention, behavioral attitudes, and subjective norms. The study has found the TRA relevant when the study intends to know about one's attitudes towards their behavior. The study conceptualizes TRA in connection with teachers' attitudes towards online distance learning during the COVID-19 pandemic.

While Aguilera-Hermida (2020) applied the technology acceptance model (TAM) based on cognitive theories that explain the process of adopting a behavior. Technology acceptance implies the users' willingness and the continuous use of technology (Aguilera-Hermida, 2020). The study focused on the factors that are mainly related to a student's behavior or attitude, which are attitude, affect, motivation, perceived behavioral control, and cognitive engagement.

3. Methodology

This study employed qualitative methodologies to explore the various forms of online distance learning modes adopted, the perceptions of lecturers and students based on the online distance learning process in Higher Education Institutes and the challenges faced by the lecturers and students in adapting to the online distance learning process during COVID-19 pandemic. This study is delimited to the Faculty of Accountancy, Universiti Teknologi MARA Kedah. The Faculty of Accountancy offered two programs, Degree in Accounting and Diploma in Accountancy. The unit of analysis for the study was at individual levels.

3.1 Sample of Study

All lecturers and students of the faculty were the populations of the study. There were 26 lecturers and 915 undergraduate students for the semester of March 2021. For the study, only 7 lecturers and 7 students were selected for semi-structured interviews using a non-probability convenience sampling design to collect data concerning the forms of online distance learning modes adopted, their perceptions and challenges towards the implementation of online distance learning during the COVID-19 pandemic. The reason for selecting only seven lecturers and seven students was due to the saturation of the collected data.

Based on Kvale and Brinkmann (2009), the minimum number of interviews is 5 to 25 informants. In qualitative research, the purpose is not statistical representativeness but representativeness in the sense of gaining access to the full range of views, themes, or possibilities in the population (Polit & Beck, 2010). Qualitative researchers will be less concerned about the representativeness of a population (Hyers, 2019). The non-probability convenience sampling design is being used because it is easy to access and inexpensive (Patton, 2002). Hyers (2019) argues that the non-probability convenience sampling design involves recruitment not so much for representativeness but simply because the people are in the researcher's social networks.

3.2 Data collection method

Primary data was collected through semi-structured interviews with selected lecturers and students using an interpretivism paradigm (Parker, 2012). The lecturers were identified as informants A, B, C, D, E, F, and G, while students were identified as informants 1, 2, 3, 4, 5, 6, and 7 for confidentiality reasons. Interviewees were offered anonymity, and the study assured them that they would remain anonymous.

3.3 Semi-structured Interview Procedures

Informants were recruited among the lecturers and students of the Faculty of Accountancy, Universiti Teknologi MARA Kedah, based on their willingness to take part in this study. Informants were informed that the study was about online distance learning. The semi-structured interview consisted of open-ended questions that elicited answers in the informant's own words in any way they preferred. The semi-structured interview was carried out on April 19 and 20, 2021, for an

average of 15 minutes for each informant. All interviews were recorded and transcribed verbatimly.

Before the interviews, the interviewees were briefed and assured about their safety and confidentiality, that their interview would be taped for fifteen minutes, and that the interviews were conducted in English. Patton (2002) suggested that the open-ended questions enable the researchers to understand and capture the points of view of other people without "being pigeonholed into standardized categories". The open-ended questions also encourage informants to express their views and experiences more easily and responsively (Bdair, 2021; McCracken, 1988).

The study is to obtain an in-depth understanding of the students' and lecturers' perspectives regarding the adoption of ODL during the COVID-19 pandemic as well as the challenges they faced in adopting online distance learning. The lecturers and students were first asked to answer the question "What types of online teaching and learning modes were adopted during the lockdown period". While the perceptions of online teaching and learning during the COVID-19 pandemic and the challenges faced in adapting to the online teaching-learning process during the COVID-19 pandemic were questioned with open-ended questions, three open-ended questions were included in the questionnaire, and each of the relevant informants responded to one of them. Online distance learning had been implemented for three semesters at the time of data collection. After data analysis, participants were asked to confirm the emerging themes to ensure the rigor of the findings. The data analysis process was reviewed by an external researcher to verify its accuracy and credibility.

4. Results

This study used semi-structured interviews to collect data. The data were analyzed using thematic analysis based on the research questions. The interview transcripts were read and analyzed considering the research questions. Based on Braun and Clarke (2006), "thematic analysis is a method for identifying, analyzing, and reporting patterns (themes) within data". It minimally organizes and describes your data set in rich detail (Braun & Clarke, 2006). In accordance with Thomas and Harden (2008), this study adopted a thematic method of data analysis to ensure effective analysis of the collected data. Thomas and Harden (2008) proposed three steps for thematic synthesis: line-by-line coding, developing descriptive themes using the first coding, and generating analytical themes based on the descriptive themes. They are the difference between descriptive and analytical themes. The descriptive themes represent the original studies, while the analytical themes bring new interpretative insights (Thomas & Harden, 2008).

4.1 Findings

4.1.1 Demographics Data of Informants

For the study, only seven lecturers and seven students were selected for semi-structured interviews using a non-probability convenience sampling design to collect data concerning the forms of online distance learning modes that were adopted and their perceptions and challenges towards online distance learning during the COVID-19 pandemic. All the informants were female. There were four lecturers between the ages of 31 and 40 years old, and three of the lecturers were between the ages of 41 and 50 years old. The majority of those students with a degree in accounting were between the ages of 21 and 30 years old. Table 1 presents the demographic data for informants.

Table 1
Demographics of Informants

Gender	Lecturers Female (N:7)	Students Female (N:7)
Age:		
21-30	0	7
31-40	4	0
41-50	3	0

4.1.2 Semi-structured interview questions

The semi-structured questionnaires were based on questions on modes adopted, perceptions, and challenges faced in adapting to the online teaching-learning process during the COVID-19 pandemic. The open-ended questionnaires are as below:

1. What types of online teaching-learning modes were adopted during the lockdown period?
2. What are your perceptions of online teaching-learning during the COVID-19 pandemic? (Pros & cons)
3. What are the challenges faced in adapting to the online teaching-learning process during the COVID-19 pandemic?

4.1.3 Types of online teaching and learning modes

This study investigated what types of online teaching and learning modes were adopted during the lockdown period and how lecturers conducted online teaching and learning. Table 2 provides information on various types of online distance learning modes that lecturers and students used during the lockdown period of the COVID-19 outbreak. The lecturer's modes of communication are the same as those that the students use.

Table 2
Types of online distance learning modes

Objective 1	Lecturers	Students
Modes of online distance learning	Telegram, Ufuture, Google Meet, Google Classroom, Youtube Channel, Whatsapp Group, Microsoft Teams, Google Form, Cisco Webex	Telegram, Ufuture, Google Meet, Google Classroom, Youtube Channel, Whatsapp Group, Microsoft Teams, Google Form, Cisco Webex

Most lecturers and students used WhatsApp or Telegram to communicate and discuss with one another. For online classes, the lecturers were utilizing Google Meet, Microsoft Teams or Cisco Webex platform. No one used Facebook to conduct classes. In contrast, Jogezi et al (2021) found that Facebook was the highest used social media platform in Pakistan and the second highest was YouTube.

Besides that, the lecturer used Google Classroom or Ufuture to upload notes and materials for online distance learning. Ufuture is a platform for delivering learning content online to any students who want to take up a course. The Ufuture was developed by Universiti Teknologi MARA where students can also participate in self-paced asynchronous learning activities on the

university's online learning platform (UFUTURE) (Abu Karim, 2020). Several teaching and learning platforms can be implemented in online distance learning to make learning more flexible and effective by using different methods of reaching the students such as lectures, case studies, debates, discussions, brainstorming, tutorials, and gaming (Jamalpur et al., 2021).

4.1.4 Perceptions on ODL mode

In order to get the findings of objective two, to study the perceptions of lecturers and students on online distance learning during the COVID-19 pandemic, the thematic analysis of the open-ended questionnaire on the perceptions of lecturers and students towards online distance learning was carried out. There are many advantages and disadvantages of online distance learning. If there is no weighing of the pros and cons of online distance learning, the quality of teaching and learning can be impaired (Sia & Abbas Adamu, 2020). It is important to study the perceptions of lecturers and students.

The majority of the lecturers opined that the advantages of ODL were that they learned various mode of online distance learning. From this ODL, students learn to manage themselves and become independent. With the method of giving the recorded video to students, the students can learn in a flexible way which they can refer back to the video when needed on their own time. Meanwhile, the disadvantage of online distance learning, the lecturers perceived that there was difficulty to assess students' understanding, difficulty delivering the knowledge and difficulty marking online. One lecturer perceived that:

"Quite tough to deliver the lecture, difficult to measure the level of students' understanding since it is an open examination book, struggling when marking the answer scripts".

As far as students' perception of online distance learning, they opined that the online learning process during COVID-19 offered a convenient and flexible method to learn. One of the students opined that:

"After almost 3 semesters of learned through Online Distance Learning (ODL), I will say it is a very convenient and flexible method to learn because I can study anywhere such as in my room even though I am not feeling well but I still can join the online class".

Other than that, the students found that they can save money during online distance learning. When they stay at home with their family, they are not required to pay for house rentals. Their homes also made them feel more comfortable, but they experienced internet connection problems, lack of social interactions and difficulties in understanding certain subjects during ODL

4.1.5 Challenges faced in adapting to ODL

Lastly, the findings of objective three examine the challenges faced by the lecturers and students in adapting to online distance learning during the COVID-19 pandemic. The lecturers and students responded to the final question of open-ended questionnaires for the data. It was found that most of the lecturers and students in some way encountered similar kinds of challenges.

The major challenge during online distance learning was unstable network connections. This finding was supported by Nassr et al. (2020). They found that it was difficult to be online during classes due to an unstable internet connection in UniKL. This finding agrees with a study conducted by Sia and Abbas Adamu (2020) which showed the effect was more severe in East Malaysia due to poor internet connectivity for online learning. In addition, Bestiantono et al.

(2020) reported that 51.6% of students have limited internet access. This finding was also found in a study conducted by Coman et al. (2020).

Moreover, some of the lecturers were not technology savvy. As a result, they faced difficulties in learning new ways of teaching and adapting to technology. Also, it was perceived that some of the students did not have the essential resources to join online classes. They have no proper gadgets or electronic devices to learn online. This finding is consistent with a study by Coman et al. (2020) in which there is a lack of computers or laptops. Among other challenges, the lack of students' participation during online distance learning was a significant challenge reported by the lecturers. In supporting this finding, Oyedun (2020) found that there are course delivery problems that diminished student-teacher engagement. The study noted that many students no longer participate in online class discussions as they do in the traditional face-to-face class and there was often little or no feedback when questions are asked in an online class. One lecturer opined in these words:

"Some students did not participate during discussion or class, it's very difficult to trace or identify whether students do understand during lectures compared to face-to-face classes".

Besides, the students were struggling with time management. Some of them were assigned household chores at home. One student exhibited these words:

"The challenge that I face in adapting to the online teaching-learning process during this COVID-19 pandemic is that I have a lot of commitments since I am learning from home. As the daughter in the house, I need to help my family with household chores every day. But I will always try better at managing my time so that I can commit as a good student and a good daughter".

5.0 Discussion

The main objective of this study was to explore the various forms of online distance learning modes adopted, the perceptions of lecturers and students based on the online distance learning process in the Faculty of Accountancy, Universiti Teknologi MARA and the challenges faced by the lecturers and students in adapting to the online distance learning process during COVID-19 pandemic. This study is limited to the Faculty of Accountancy, Universiti Teknologi MARA Kedah. Data was collected using semi-structured interviews of 7 lecturers and 7 students from the Faculty of Accountancy and analysed using thematic analysis to meet the objectives of the study.

In this study, lecturers revealed a variety of platforms for conducting online distance learning. Several available online teaching and learning tools were found to be used by both students and lecturers, like Telegram, Ufuture, Google Meets, Google Classroom, Youtube Channel, WhatsApp Group, Microsoft Teams, Google Form, and Cisco Webex. This finding was also found by Sia and Abbas Adamu (2020), who reported that lecturers and students started establishing online learning platforms such as Cisco Webex, Google Meets, and Microsoft Teams for synchronous online teaching. Synchronous learning is a real-time and live online social interaction, where responses are given to students immediately. For communication, the majority of the lecturers opted for WhatsApp or Telegram as a mode of reaching their students. WhatsApp or Telegram also being used for discussion was simple, they were accustomed to using it in day-to-day life and suitable for slow internet connectivity.

For the perceptions of lecturers and students, their views on the advantages and disadvantages of using online distance learning are discussed. The findings of the study showed that the advantages were that they learned various modes of online distance learning, students learned to manage themselves and become independent, and students could learn flexibly. Regarding the disadvantages of online distance learning, the lecturers perceived that there was difficulty assessing students' understanding, difficulty delivering the knowledge, and difficulty marking online.

This study also reported that the major challenge during online distance learning was the unstable network connection. All lecturers and students have encountered similar challenges. The internet connection became the main issue for conducting online distance learning during the COVID-19 pandemic (Bestiantono et al., 2020; Coman et al., 2020; Nassr et al., 2020; Sia & Abbas Adamu, 2020). Wai Yee and Cheng Ean (2020) proposed that higher education institutions should upgrade technical advancements like an Internet connection to improve online distance learning. In addition, Musa et al. (2020) recommend an effective strategy to conduct online distance learning (ODL) in UiTM from the perspectives of ODL interaction, motivation, students' performance, and ICT and technology support systems. In order to implement online distance learning effectively, higher education institutions should consider and solve the challenges faced by lecturers and students. This COVID-19 crisis is not over yet, we need to consider and give feedback to the lecturers' and students' responses if we want them to continue and have a positive higher education experience (Musa et al., 2020).

6.0 Conclusion

The COVID-19 pandemic obstructed traditional face-to-face learning. This crisis moved the traditional learning method to online distance learning in educational institutions across the world. Thus, many schools, colleges and universities opted for online distance learning as an alternative way to continue education during the pandemic. This study concluded that there are advantages and disadvantages of online distance learning for lecturers and students. Although online distance learning creates room to resume the education process for lecturers and students, there are also many challenges in adapting to the online distance learning process during the COVID-19 pandemic, especially unstable internet connections. Thus, the government should provide better digital and cost-efficient infrastructure to make effective online distance learning possible.

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Roshidah Safeei led this study and wrote the paper; Hawa Syamsina Md Supie reviewed and improved the article.

Conflict of Interest

No conflict of interest is associated with this publication.

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INTELLECTUAL CAPITAL EFFICIENCY: A COMPARATIVE STUDY BETWEEN MALAYSIAN AND SINGAPOREAN MANUFACTURERS

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ABSTRACT

Among the indicators of high business performance is Intellectual Capital (IC) efficiency. Looking at limited comparative studies on IC, this study aims to explore and compare IC efficiency and its four components among ASEAN manufacturing firms in emerging (Malaysia) and developed (Singapore) countries using a value added model. This would be a good benchmark for Malaysia since Singapore, as one of the most competitive economies in the world, can act as a role model in pursuing its innovativeness. Utilising data from annual reports of 56 manufacturing firms over three years (2012-2014), an independent sample t-test was performed. Overall, no significant difference was observed in the mean scores of Modified Value Added Intellectual Coefficient (MVAIC) and its three components (human, structural and physical capital) across both countries except for innovation capital. Thus, the current innovativeness of Malaysian manufacturers could be a basis to design and strategise appropriate mechanisms to improve IC management in becoming a developed nation as spelt in the Malaysian economic agenda. A more comprehensive measure of a firm's IC efficiency is established by incorporating innovation capital as a standalone measure.

1. Introduction

One of the main ingredients for business survivability in a knowledge-based economy is intellectual capital (IC). Choong (2008) described IC as a non-monetary asset without physical substance but possessing value and capabilities to generate future benefit, while Mention (2012) opined IC as firm internal and external capital organised, managed and utilised through interactions with financial and tangible capital in developing new resources. IC capability in sending a signal about a business's performance has been proven in past research by Feimianti and Anantadjaya (2014), Lee and Mohammed (2014), Chowdhury, Rana, and Azim (2019), Vo and Tran (2021), as well as Dalwai and Salehi (2021), which revealed a positive impact of IC on financial, productivity and market value performance.

However, the intangibility and non-substance nature of IC leads to limited accounting standards regulating it, which in turn results in difficulties faced by researchers to measure IC. Therefore, in 1998, Pulic created a value added model known as the Value Added Intellectual Coefficient (VAIC) to effectively measure IC. Generally, this model captures information on how much value is added and created for every money invested in a firm's resources (Ramírez, Dieguez-Soto, & Manzanegue, 2021), so that better strategies could be designed for utilising IC performance. It consists of three components, namely physical, human and structural capital.

Physical capital (CE) can be defined as tangible capital created by humans and is utilised in the productive process of a firm (Lee & Mohammed, 2014). It needs to be combined with financial capital to maximise efficiency in value creation process (Feimianti & Anantadjaya, 2014). On the other hand, human capital (HC) is central to each firm's productive process since it acts as an originator of other components in IC and encompasses a collective set of workforce's capabilities and contributions (Vo & Tran, 2021). Whereas structural capital (SC) is a set of knowledge that remains with the firm every time it is needed comprising the firm's intellectual properties, system, process, procedure, culture and databases that might be legally protected and exclusively owned by a particular firm (Chowdhury et al., 2019). These three components create three measures of IC efficiency called Capital Employed Efficiency (CEE), Human Capital Efficiency (HCE) and Structural Capital Efficiency (SCE). The total VAIC value would be the sum of these three capital efficiencies.

Prior findings discovered that the original VAIC model is so convenient, straightforward, reliable, verifiable and above all facilitates clear understanding among stakeholders of a business (Chowdhury et al., 2019; Ramírez et al., 2021; Vo & Tran, 2021). However, it misses the most crucial component of IC in creating firm value, which is innovation capital (Bayraktaroglu, Calisir, & Baskak, 2019). OECD (2005) defined innovation capital as the execution of considerably new and improved products, goods or services, business processes and business networking. Firms with high innovation capability have better prospects to keep themselves at the forefront of the competition (Al-Khatib, 2022; Saunila & Ukko, 2012) owing to the vital role of innovation capital triggering reformation in a firm (Wang, 2011; Xu & Liu, 2020). According to Al-Khatib (2022) and Chen, Cheng, and Hwang (2005), innovation capital should be independently measured as the fundamental ingredient that drives a firm constant development and creation of new ideas. Hence, to improve the original VAIC model, innovation capital will be measured independently from other IC components (Al-Khatib, 2022; Chang & Hsieh, 2011; Chen et al., 2005; Phusavat, Comepa, Sitko, & Ooi, 2011) to make it more comprehensive and meaningful. In this study, innovation capital was measured by R&D expenditure representing innovation capital efficiency (InCE) measurement.

In Malaysia, IC has initiated to gain economic prominence in the last two decades (Gan, Saleh, Abessi, & Huang, 2013). In its response towards a sophisticated knowledge-based economy, Malaysia has incorporated initiatives in its national agenda to address the importance of IC. In its effort of becoming a developed nation, Malaysia launched the Knowledge-Based Economy Master Plan in 2002 (Anam Ousama, Fatima, & Rashid Hafiz - Majdi, 2012). In addition, Malaysia is constantly keeping up with the importance of innovation in wealth creation by

promoting innovation as a source of sustainable economic growth proven by having innovation and productivity as among the important pillars in the series of Malaysia Plan, including in the tenth and eleventh Malaysia Plan.

Xu and Liu (2020) and Nimtrakoon (2015) mentioned that high-technology industries like manufacturing, electronics, pharmaceutical and software, which have benefitted substantially from IC, would eventually invest extensively in IC. Nevertheless, regardless of extensive IC studies conducted in different industries worldwide, comparative studies on IC are still very limited. The gap in the literature motivates this study to explore and compare IC efficiency measured by MVAIC of Malaysian manufacturing firms representing emerging countries in comparison with Singaporean manufacturing firms representing developed countries in ASEAN. By comparing these two countries, Malaysia can be greatly aided since the results might provide an intuition about their IC performance in realising the national agenda of becoming an innovation driven-country.

2. Hypotheses Development

The Pulic VAIC model has engrossed much attention among researchers to investigate IC efficiency in developed and emerging countries. However, mixed results were reported. One of the latest studies by Xu and Liu (2020) tested the influence of IC on Korean manufacturing firms' performance from 2013 to 2018 using an enhanced VAIC model. Results demonstrated that physical capital has the greatest impact on firm performance, while human capital is considered a performance-enhancing factor. Moreover, innovation capital was found to negatively affect a firm's profitability due to the high price of innovation.

In 2019, Bayraktaroglu et al. (2019) conducted empirical research on the Turkish manufacturing sector and observed that the efficiency of innovation capital plays a moderating role in the association between structural capital efficiency (SCE) and profitability. This implies that as R&D expenses increase, the impact of SCE on profitability also intensifies. The researchers also discovered that the efficiency of innovation capital directly influences a firm's productivity. Moreover, many IC efficiency studies have been conducted in various countries to examine the impact of IC on firm performance, including that by Feimianti and Anantadjaya (2014) in Indonesia, Chowdhury et al. (2019) in Bangladesh, Vo and Tran (2021) in Vietnam and Ramírez et al. (2021) in Spain. However, comparative IC efficiency studies remain inadequate.

One of the recent comparative studies has been done by Nadeem, Gan, and Nguyen (2017). They examined the relationship between IC and firm performance in BRICS (Brazil, Russia, India, China and South Africa) economies by drawing data from 6,045 publicly listed firms from 2005 to 2014. China was found to be the top IC performer, while South Africa was the least efficient in utilising IC. Meanwhile, human capital was the main contributor of IC in all BRICS economies. The result also emphasised the role of physical capital in contributing towards value creation process in combination with IC despite its small mean value reported for each country if compared to human and structural capital.

Another study by Nawaz and Haniffa (2017) examined the link between IC and financial performance among 64 Islamic financial institutions operating in 18 different countries, which involved Asia, Europe and the Middle East region, from 2007 to 2011. The finding demonstrated that IC, particularly human and physical capital, have a positive impact on firms' return on assets implying that the value creation ability of sampled firms is highly affected by human and physical capital with human capital as the major driver of the value creation process.

In the ASEAN context, three comparative studies have been commenced so far. Young, Su, Fang, and Fang (2009) examined the IC performance among commercial banks in eight Asian economies, namely Hong Kong, Taiwan, South Korea, Singapore, Malaysia, Thailand, the Philippines and Indonesia from 1996 to 2001. They discovered that physical and human capitals are the main components of IC that create value for commercial banks. However, banks from different countries have different levels of IC performance, which was preceded by commercial

banks in Hong Kong, while the most improved IC performance was in Thailand. In addition, Phusavat, Comepa, Sitko-Lutek, and Ooi (2012) investigated the link between IC represented by National IC Indicator (NICI) and economic development represented by GDP per capita in five Southeast Asia countries including Indonesia, Malaysia, the Philippines, Singapore and Thailand. Their finding provided empirical evidence of the significant relationship between NICI and GDP per capita with each country having different IC efficiency. Furthermore, the study also proved that all of these Southeast Asia countries are still under the efficiency-driven stage, except Singapore, which has been grouped as an innovation-driven country. Global Competitiveness Report 2014-2015 produced by World Economic strengthened the finding by Phusavat et al. (2012).

While the above studies revealed different IC efficiency among countries, the most recent comparative study conducted by Nimtrakoon (2015) using data from five technology ASEAN countries including Singapore, Malaysia, Thailand, the Philippines and Indonesia reported no empirical significant difference in overall IC across ASEAN countries. However, a significant difference was observed among countries in four individual components of IC, which were HCE, SCE, CEE and relational capital efficiency. This finding indicates that technology firms in ASEAN have more or less the same level of IC efficiency with each country placing a different degree of importance on IC components to generate corporate value with HC contributing the most for the majority of the countries.

Due to scarce comparative studies on IC being performed, more cross-sectional research is required to assess IC performance in a particular country and set a benchmark against IC top performers. Since Malaysia was grouped in the transition phase from efficiency-driven to innovation-driven, while Singapore was regarded as an innovation-driven country, this study expected that their IC efficiency level would be different. Hence, the following hypotheses were proposed:

H1 : MVAIC is different between emerging countries (Malaysia) and developed countries (Singapore).

This study also assesses the efficiency of individual components of MVAIC in comparing IC efficiency between these two countries as shown in the hypotheses below:

H1.1 : HCE is different between emerging countries (Malaysia) and developed countries (Singapore).

H1.2 : SCE is different between emerging countries (Malaysia) and developed countries (Singapore).

H1.3 : InCE is different between emerging countries (Malaysia) and developed countries (Singapore).

H1.4 : CEE is different between emerging countries (Malaysia) and developed countries (Singapore).

3. Methodology

Sample Selection and Data Collection

The population for this study involved two stock exchanges, which were Malaysia (Bursa Malaysia) and Singapore (Singapore Exchange). For homogeneity, the companies used were taken only from the manufacturing industry as it is classified as high technology industry that possesses a high level of IC in their operation and is believed to substantially benefit from IC

investment (Nimtrakoon, 2015; Xu & Liu, 2020). However, the sample was limited to manufacturing firms with R&D expenditure to test the study objective on innovation capital, which has been proven to be the secret recipe to a constant generation of new ideas and better product solutions (Al-Khatib, 2022). Firms with R&D expenditure were also expected to be large in size as smaller manufacturers could not afford expensive R&D costs (Xu & Liu, 2020).

Each country's stock exchange was assessed for three sequential years, from 2012 to 2014 and their annual reports were reviewed. These three years were selected as the most stable state of the Malaysian manufacturing industry since its continuous drop in contribution to the country's Gross Domestic Product (GDP) from 2000, as reported by The World Bank (2015a) to avoid too much fluctuation that may be caused by factors uncovered by this study. Data from manufacturing firms with R&D expenditure in 2014 were used as the reference year to identify samples with consistently available data for these three years (2012-2014). The final sample for one year of 56 was obtained, which was then multiplied by three years making a total sample of 168. However, due to extreme outliers, the final sample size dropped from 168 to 145.

Measurement of Variables

The variables in this study were MVAIC and its four components (CEE, HCE, SCE, and InCE). The following formula was used:

$$\text{MVAIC} = \text{CEE} + \text{ICE} \quad (1)$$

$$\text{ICE} = \text{HCE} + \text{SCE} + \text{InCE} \quad (2)$$

Where:

- 1) CEE: The value is derived from VA/CE. It indicates how much new value has been created per one unit of investment in the capital employed.
- 2) HCE: The value is derived from VA/HC. It indicates how much value has been created per one unit of investment in the employees.
- 3) SCE: The value is derived from SC/VA. It indicates the amount of structural capital needed to generate a dollar of value added in a firm.
- 4) InCE: The value is derived from the R&D expenditure/Book Value of Common Stock.

The detail of each component of MVAIC is illustrated using the following formula:

1) $VA = \text{OUTPUT} - \text{INPUT} = OP + EC + D + A$, in which VA is Value Added, OP is the operating profit, EC is employee cost, D is depreciation and A is amortisation. VA is derived from the differences between output and input. The output contains revenue of all products and services offered to the market, whereas input represents all expenses incurred in earning that revenue but excludes employee costs.

2) $CE \text{ (Capital Employed)} = \text{Total Asset} - \text{Intangible Asset}$.

3) $HC \text{ (Human Capital)} = \text{Total Salaries and Wages}$.

4) $SC \text{ (Structural Capital)} = VA - HC$

4. Results and Discussions

Descriptive Statistics

The descriptive statistics are demonstrated in Table 1. The mean value of MVAIC was 2.8953 suggesting that manufacturing firms create USD 2.8953 for every USD1.00 investment made in all strategic resources of the firms including physical, financial and intellectual resources. The most contributing component towards MVAIC value was HCE with the largest mean value of 2.1877 compared to SCE, InCE and CEE with mean values of 0.4413, 0.0348 and 0.2315, respectively. This result is consistent with prior empirical findings by Xu and Liu (2020), Nadeem et al. (2017), Nawaz and Haniffa (2017), Young et al. (2009) and Nimtrakoon (2015), which also revealed HCE as the most influential component of MVAIC in value creation. Hence, this finding proved how an employee can be the greatest asset to an organisation. The small standard deviation for all variables ranging from 0.0451 to 1.8513 indicates concentrated data close to the mean value.

Table 1
Descriptive Statistics for Entire Sample

Variable	N	Mean	Standard Deviation
MVAIC (Ratio)	145	2.8953	1.8513
HCE (Ratio)	145	2.1877	1.6086
SCE (Ratio)	145	0.4413	0.45954
InCE (Ratio)	145	0.0348	0.0451
CEE (Ratio)	145	0.2315	0.1506

Table 1 also exhibits MVAIC consisting of HCE, SCE and InCE with a higher combined mean value of 2.6638 compared to CEE with only 0.2315. This finding indicated that IC representing intangible assets (HCE, SCE and InCE) is the dominant source of firm efficiency in creating value rather than physical and financial assets. This result confirmed findings from previous studies that a firm's reliance on tangible capital is reduced to survive in a fiercely competitive market, as IC had become the vital source of firm competitive advantage (Bayraktaroglu et al., 2019; Chang & Hsieh, 2011; Xu & Liu, 2020; Zeghal & Maaloul, 2010). However, according to Nadeem et al. (2017), the significance of physical capital cannot be denied in complementing IC to achieve better efficiency.

The above descriptive analysis was conducted on the entire sample of data, but with each country having different characteristics of selected variables. Thus, it is reasonable to inspect selected variables by individual countries. Descriptive Statistics for Individual Countries are presented in Table 2. According to the table, on average, overall MVAIC showed that Malaysia reported a slightly higher MVAIC of 2.9635 compared to Singapore with 2.8201. The same goes for three components of MVAIC (HCE, SCE and CEE) except for InCE, in which Singapore has a greater mean value of InCE but is still very low amounting to 0.0455 compared to Malaysia with 0.0251. The very low InCE value here could be due to the limited measurement of innovation capital represented only by R&D expenditure from the firm income statement. It also might be because the firm recorded it as an investment in human resources and not separated as R&D expenditure even though the firms might probably have incurred R&D expenses (Phusavat et al., 2011).

Table 2
Descriptive Statistics for Individual Countries

Variable	Malaysia (N = 76)		Singapore (N = 69)	
	Mean	Standard Deviation	Mean	Standard Deviation
MVAIC (Ratio)	2.9635	1.3184	2.8201	2.3087
HCE (Ratio)	2.2442	1.0851	2.1253	2.0429
SCE (Ratio)	0.4570	0.2507	0.4240	0.6143
InCE (Ratio)	0.0251	0.03601	0.0455	0.0515
CEE (Ratio)	0.2371	0.0963	0.2252	0.1943

When comparing these two countries, the difference in the mean score of other MVAIC components was not significant though Singapore has higher InCE compared to the other components of MVAIC (HCE, SCE and CEE) as shown in Table 3. Only InCE was found to be significantly different, in which Singapore has significantly higher efficiency in managing its innovation capital. This result is expected since Singapore, as a more developed nation, spends more on innovation activities including R&D activities compared to Malaysia (The World Bank, 2015b). Overall, HCE was the major influence of value creation for both countries with mean values of 2.2442 and 2.1253 for Malaysia and Singapore, respectively. On average, both countries manufacturing firms primarily rely on IC to create value, thus reducing reliance on physical and financial capital (CEE).

Independent Sample T-Test

In testing the hypothesis, Independent Sample T-Test was conducted to compare the mean scores of MVAIC and its four components between Malaysian and Singaporean manufacturers. Country is regarded as the grouping variables of two groups, Malaysia and Singapore, while MVAIC and its components served as the continuous variables. Before interpreting the result, assumptions of homogeneity of variance were first checked using Levene's Test for equality of variances. Levene's Test determines whether the variance of scores for two groups (Malaysia and Singapore) is the same and which t-value should be used to interpret the result. The Sig. value for Levene's Test of > 0.05 means that equal variance is assumed and the first row of equal variance assumed will be used to interpret the result. However, if the Sig. value is < 0.05 , it indicates equal variance is not assumed and the second row will be used (Pallant, 2011).

Table 3 demonstrates independent sample t-test for MVAIC and its four components. According to Levene's Test, the Sig. value for MVAIC and all its components were < 0.05 implying the variability in Malaysia and Singapore mean values of MVAIC, HCE, SCE, InCE and CEE were not the same; hence, equal variance was not assumed. On another test, which is the t-test for Equality of Means referring to the column labelled Sig. (2-tailed) for unequal variance, Sig. value for overall MVAIC and its components were > 0.05 except for InCE with Sig. value of < 0.05 (0.007). This result revealed no evidence supporting the overall significant differences in the mean score of MVAIC as well as its three components (HCE, SCE and CEE) across these two countries. In other words, manufacturing firms in Malaysia and Singapore utilise MVAIC, HCE, SCE and CEE to a similar extent for creating value for their firms. However, InCE was found to be employed to a different extent by Malaysia and Singapore in the value-creation process.

Table 3
Independent Sample T-Test for MVAIC and its Components

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2- tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
M V A I C	Equal variances assumed	12.381	.001	.465	143	.643	.1434576	.3086902	-.4667279	.7536430
	Equal variances not assumed			.453	105.816	.651	.1434576	.3164141	-.4838769	.7707920
H C E	Equal variances assumed	13.527	.000	.443	143	.658	.1188922	.2682347	-.4113252	.6491095
	Equal variances not assumed			.431	101.275	.667	.1188922	.2756389	-.4278832	.6656676
S C E	Equal variances assumed	18.278	.000	.431	143	.667	.0330550	.0766320	-.1184228	.1845328
	Equal variances not assumed			.417	88.289	.678	.0330550	.0793421	-.1246135	.1907236
In C E	Equal variances assumed	19.129	.000	-2.777	143	.006	-.0203579	.0073309	-.0348487	-.0058671
	Equal variances not assumed			-2.731	120.197	.007	-.0203579	.0074546	-.0351172	-.0055986
C E E	Equal variances assumed	18.821	.000	.473	143	.637	.0118709	.0251115	-.0377669	.0615086
	Equal variances not assumed			.459	97.304	.647	.0118709	.0258624	-.0394569	.0631986

Generally, even though manufacturing firms in Malaysia obtained slightly higher mean scores of MVAIC, HCE, SCE and CEE compared to Singapore, they are not statistically significant. Plus, Malaysia is still lacking in utilising its InCE to create value for the firm compared to Singapore. This finding is consistent with a prior study by Phusavat et al. (2012) who categorised Malaysia as

an efficiency-driven country and Singapore as an innovation-driven country. The categorisation of their efficiency status was reflected in this current study finding when Singapore, as an innovation-driven country, has significantly higher InCE compared to Malaysia, an efficient-driven country. This result is also in line with the efficiency ranked by the Global Competitiveness Report 2014-2015 produced by World Economics.

Furthermore, the overall findings of H1 are partially supported by Nimtrakoon (2015) who reported no significant difference in overall MVAIC mean score across technology firms in ASEAN countries, but each country places a significantly different degree of importance on IC components to generate corporate value. In summary, there was no significant difference between Malaysia and Singapore concerning MVAIC, HCE, SCE and CEE, thus rejecting H1, H1.1, H1.2 and H1.4. However, significant differences were found in relation to InCE, hence providing support for H1.3. The most concrete reason for unresponsive results is due to the similarity of the manufacturing industry in both countries, particularly the sample size selected that is restricted to firms with R&D expenditures. This study indirectly controlled the firm size, thus producing no overall significant result for overall MVAIC. Moreover, other factors determining the innovativeness of a country were excluded in the current study like new product sales, innovative culture and top management support for innovation.

5. Conclusion

This study has explored and compared MVAIC and its four components (human, structural, innovation and physical capital) among manufacturing firms in Malaysia and Singapore.

Findings showed no significant difference in the mean score of MVAIC and its three components (HCE, SCE, CEE) between Malaysian and Singaporean manufacturing firms. The findings demonstrated that manufacturing firms in Malaysia and Singapore utilise human, structural and physical capital to a similar extent for creating firm value. Nevertheless, the mean scores of InCE between these two countries were found to be significantly different. As expected, Singapore as an innovation-driven country had better InCE compared to Malaysia, which is ranked in the transition phase between efficiency-driven to innovation-driven (Phusavat et al., 2011; Schwab, 2015).

This current study provided some contributions to the body of knowledge in several ways. First, by theoretically adopting the MVAIC model, a more comprehensive measure of a firm's IC efficiency can be established by assessing the efficiency of individual IC components as well as the aggregate MVAIC. Second, it contributes to the limited comparative study on IC efficiency across the countries by exploring and comparing MVAIC in manufacturing firms as one of the high-technology industries between emerging and developed countries.

In practice, by knowing the historical level of Malaysian innovativeness and IC capabilities, Malaysian regulators and practitioners will be more aware of the importance of innovation capital growth and development. In becoming a more developed nation as aspired in its TN50 and towards achieving the innovation-driven status, Malaysia should double their effort and emphasis on the enlargement of innovation capital including intensive R&D activities and development of new products, services, ideas and intellectual properties, while maintaining its efficiency in other intellectual capitals. The mechanism for improving IC management can be strategised in developing and managing key capabilities associated with IC. For instance, the result could serve as a basis for regulators to design attractive and open policies to attract foreign direct investment into Malaysia for promoting the exchange of IC capabilities.

Nevertheless, this study does not come without limitations. Measurement of innovation capital represented only by R&D expenditure was limited in this study. This is because even though the firms might probably have incurred R&D expenses, it has not been separated as R&D expenditures in their financial statement. Therefore, it is recommended for future research to consider other indicators of innovation capital like sales from new products, innovative culture and high management support for innovation to establish a more accurate measure of

innovation capital in capturing the real efficiency of this strategic valuable capital in an organisation. Future studies should also prolong the year under review to investigate the presence of any changes to the IC efficiency afterwards for selected countries.

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All authors contributed equally to this publication.

Conflict of Interest

There is no conflict of interest associated with this publication.

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DIGITAL LITERACY AMONG STUDENTS: A CASE STUDY AT CENTRE OF FOUNDATION STUDY IN MANAGEMENT

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ABSTRACT

Digital literacy is the ability to navigate the digital world using reading, writing, technical skills, and critical thinking, together with the ability to discover, evaluate, utilize, share, and create content using information technologies. Access to the Internet has increased from time to time. The percentage of households accessing smartphones had grown from previous years. It showed that technology has seeped into our daily life and encouraged more processes to become data driven and virtual. This study will use descriptive statistical methods to determine the digital literacy level among Foundation Studies in Management students and to identify reasons the students engage in digital technologies. The findings show that female students tend to spend more hours on their cell phones and computers. In addition, most of the Foundation Studies in Management students responded to a moderate-high agreement on their level of digital literacy, which means that most of them understand and can apply simple and fundamental computer knowledge for personal purposes and academic matters.

1. Introduction

Today technologies have been developed from time to time to satisfy human needs. Currently, there are many new methods of delivering information (Roschelle, Pea, Hoadley, Gordin & Means, 2000). Teenagers are among the generation that has become attached to and familiar with this latest technology (Akhmedov, 2022). Literacy is one of the areas that has been focused on by the government in our education system. Nowadays, literacy involves the ability to read, write, and navigate the world using digital technology (Meyers, Erickson & Small, 2013; Sailer, Murböck & Fischer, 2021).

Internet, a system designed to help communication among users, has been transformed for easy and convenient usage to ease the delivery of information. Users only need an internet connection to communicate with each other. They can do that at their convenience, time, and place. This new technology has contributed to a fast flow of data around the world (Manyika & Roxburgh, 2011; Sadowski, 2020; Shahbaz, M., Wang, Dong & Zhao, 2022).

Based on the importance of digital technology, our kids' literacy knowledge is crucial. Hence, this study will investigate digital literacy among college students. In this study, a sample survey on digital literacy has been conducted. This study was participated by students in the Management Foundation program. The objectives of this study are to determine the digital literacy level of students and to identify reasons students engage in digital technologies.

2. Literature Review

Digital literacy is the ability to navigate our digital world using reading, writing, technical skills, and critical thinking (Microsoft, 2022; Takavarasha, Cilliers & Chinyamurindi, 2018; Techataweewan & Prasertsin, 2018). In addition, it is also the ability to discover, evaluate, utilize, share, and create content using information technologies (Heick, 2022).

According to the Department of Statistics Malaysia (2021), the percentage of Malaysians with access to the Internet has increased from 90.1% to 91.7% in 2020. In the same vein, the percentage of households accessing smartphones had grown to 98.6% in 2020 compared to the previous year, which is only 98.2%. It showed that technology has seeped into our daily life and encouraged users to be more processes to become data driven and virtual (Suša Vugec & Stjepić, 2022).

Digital devices have been widely used by students in their daily communication, collaboration, and access to information for solutions, to name a few (Mudra, 2020; Anthonysamy, 2020). Potyrała and Tomczyk (2021) stated that digital literacy is a lifelong learning process. As technology updates rapidly, we as the user need to be able to catch up with it occasionally. It will help us survive in this digital world. Hence, the culture of our education system needs to be able to follow the trend of this technology. The students and teachers should be equipped with suitable knowledge to enhance digital literacy success.

3. Methodology

This study investigates digital literacy among Foundation Studies in Management students. It is exploratory research. Descriptive statistical methods were used to determine the digital literacy level among the students and to identify the reasons why the students engaged in digital technologies. There are tables, pie charts, and line graphs representing the feedback of the respondents. These tools will help to display the outcome from different variables investigated, such as gender, hometown, and hours of using digital technology.

The data used in this study is primary data collected by handing out Google Forms among foundation studies students. The Google Forms consist of survey questions the students must answer using the given link. A few types of questions are given to the students, such as about their personal information like their full name, matric number, and gender. In addition, the questionnaire also

asked a few 'yes' or 'no' questions. Furthermore, questions with the choice of answer 'sometimes' are also added to the list of answer choices so that the survey will be more accurate and unbiased. Plus, it gives students the freedom to choose their most suitable answers based on their preferences.

4. Respondents Profile

Table 1 presents the total number of male and female students who completed the survey. As shown in the table, the number of female students who responded to this survey was higher than that of male students who responded, with a difference value of 116. The frequency of male students who responded was 25, while the frequency of female students who responded was 141.

Table 1
Frequency Distribution Based on Gender

Variables	Frequencies
Gender	
Male	25
Female	141
Total	166

Figure 1 shows the analysis of the races of the students that responded to the survey. As shown in Figure 1, the race with the highest frequency is Malay which is 146 students or 88%. This is due to this survey being conducted in a public university, with the majority of the students being Malay. The second highest frequency of race is Chinese, with a frequency of 14 and a percentage of 8%. The fewest race that responded to this survey is Indians and other races such as Iban and Melanau, which consists of 3 respondents or 2% for each race.

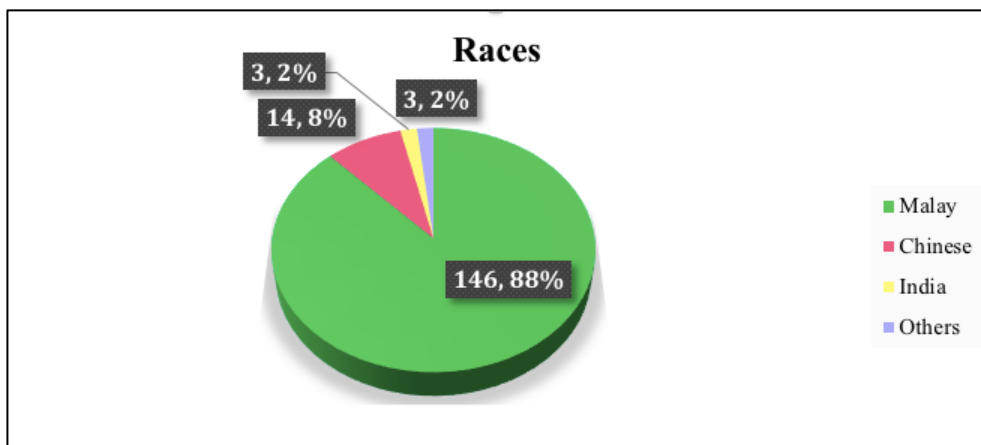


Figure 1. Respondents based on Race

Figure 2 illustrates the students' state of origin. The graph shows that most respondents originate from Kedah, which represents 25.90%, with 43 students out of 166. Penang has the second-highest number of students, with 20 students, representing 12.05% of all students. Perlis and Negeri Sembilan have 6 students, totaling 3.6% of the total students. Melaka and Wilayah Persekutuan Kuala Lumpur have the same number of students, which is 4, and represent 2.41%. Sabah has the least students, with only 1 student representing 0.60% of Foundation Studies in Management students. In sum, students from the northern region are the majority among all students in this foundation program.

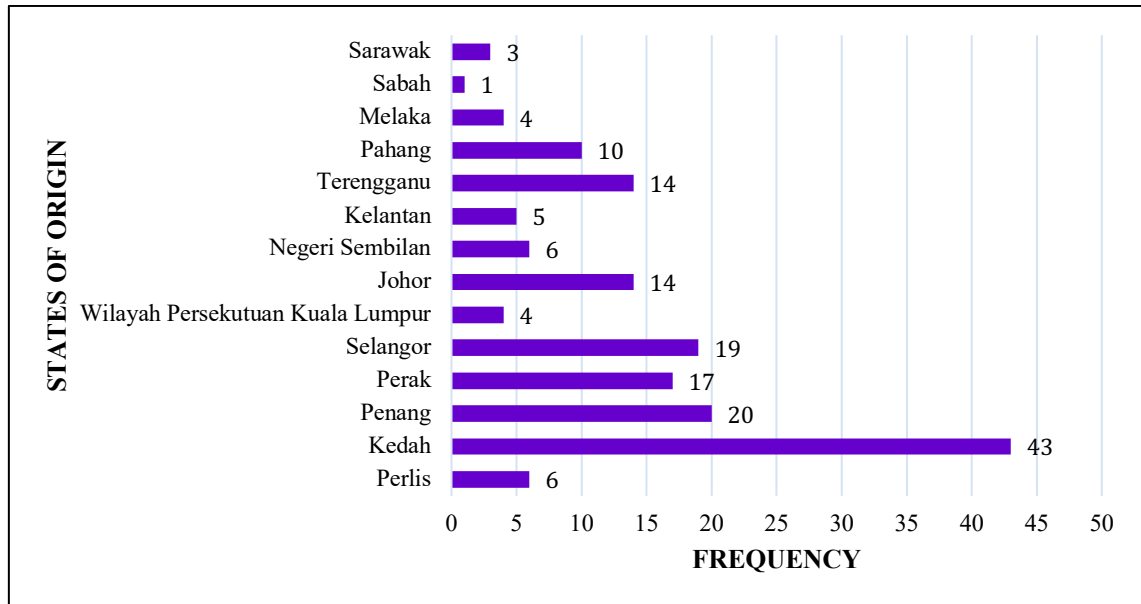


Figure 2. Number of Students based on their State of Origin

Table 2
Student's Hometown

Hometown	Frequency	Percentage %
Urban	102	61.45
Rural	64	38.55
Total	166	100.00

Table 2 shows the hometown of Foundation Studies in Management students. We can see that most of the students live in the urban area. It can be seen from the highest frequency, which is 102, which represents 61.45%. Meanwhile, the frequency of students that comes from rural only shows 64 and consists of 38.55%. In this sample, we can assume that the gap between students from rural and urban hometown is not far apart, which denote that of 10 students, there are 4 from rural and closely 6 from urban.

Figure 3 shows the analysis of 166 students' family income. Figure 3 shows that most of the students' family incomes are below RM 3000, which is a total of 50 over 166 or 30.12%. On the other hand, the second-highest frequency is family income above RM 10000. There are 39 over 166 students' family incomes higher than RM 10000. In addition, the average student's family income is RM 6132.53. The standard deviation of the family income is 3705.5113. In order to find whether the data set of family income is clustered around the mean, the coefficient of variation, $CV = \text{standard deviation} / \text{mean}$. If the value of CV is lower than 1, it will be considered as a low standard deviation. In this case, the CV of this family income is $(3705.5113 / 6132.53 = 0.6042)$. In conclusion, the data set of family income is clustered around the mean.

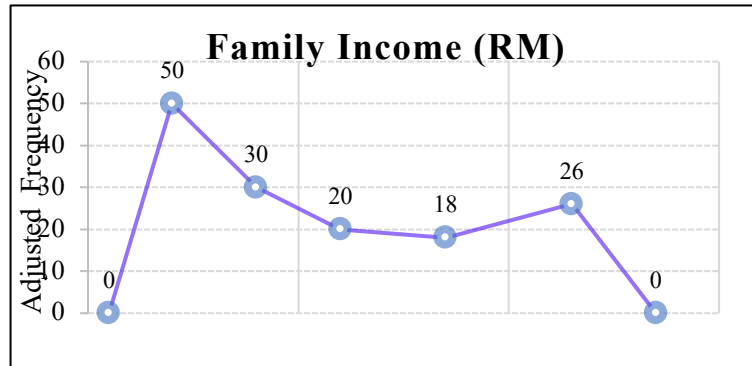


Figure 3. Students' Family Income

5. Analysis

Identifying computer and ICT skills among students

ICT Skill Notation

- a. Identify a software
- b. Install a software
- c. Name a folder
- d. Empty the recycle bin
- e. Connect to Wi-Fi or Bluetooth
- f. Set a website as the home page
- g. Website basics
- h. Have safe and responsible online behavior
- i. Protect private data
- j. Create a password
- k. Open an attachment
- l. Know how to use social networks
- m. Create a personal profile on a social network
- n. Interact with other users on an online forum
- o. Search and collect information
- p. Compare information from several sources
- q. Save a document in a specific location
- r. Editing information (i.e., copy and paste)
- s. Present information through a video
- t. Know how to use office software

In this part, we will relate ICT skills with different family incomes of students to discover their relationships.

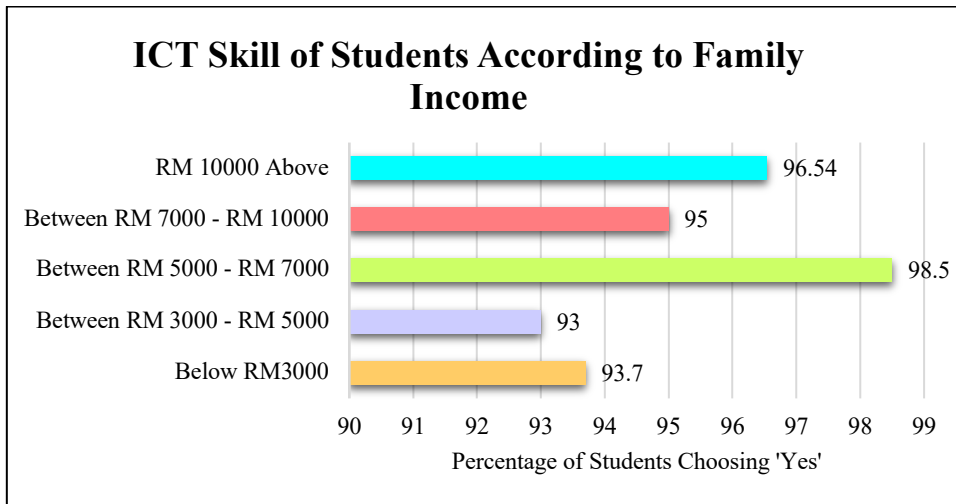


Figure 4. ICT Skills among Students According to Family Income

Based on Figure 4, ICT skills E and O connect to Wi-Fi or Bluetooth and search and collect information archived fully acquired. This situation shows that all students have the most fundamental ability to coordinate on online platforms. Moreover, 93.7% of students whose family income is below RM 3000 choose yes, while 93% of students whose family income is between RM 3000 – RM 5000 choose yes, 98.5% of students whose family income is between RM 5000 – RM 7000 choose yes, 95% of students whose family income are between RM 7000 – RM 10000 choose yes, and 96.54% of students whose family income are above RM 10000 choose yes for the self-recognition of ICT skills. It can also clearly see that those students whose family incomes are between RM 5000 – RM 7000 have higher self-recognition levels of ICT skills compared to other family income segments.

Hours spend on computers among students

Based on Table 3, most of them chose the assumption of '5 to 6 hours allocated on spending their time with the computer' regardless of female or male students (25 for females; 7 for males). Besides, it is clearly shown that the average number of hours female students spend on computers is 7.7872 hours per day, which is higher than the average number of hours of male students, only 6.46 hours per day.

Table 3
Hours Spend on the Computer based on Gender

Hours Spent on the computer	Gender		
	Females	Males	Total
0	1	-	1
0 - 1	-	-	-
1 - 2	2	-	2
2 - 3	1	-	1
3 - 4	3	3	6
4 - 5	16	4	20

5 - 6	25	7	32
6 - 7	17	4	21
7 - 8	20	-	20
8 - 9	13	1	14
9 - 10	16	4	20
10 - 11	3	1	4
11 - 12	14	1	15
12 - 13	3	-	3
13 - 14	-	-	-
14 - 15	2	-	2
15 - 16	1	-	1
16 - 17	-	-	-
17 - 18	2	-	2
18+	2	-	2
Total	141	25	166
Mean	7.7872	6.4600	

Hours spend on cell phones among students

Table 4 shows that female students also get the highest average number of hours spent on cell phones which is 8.6525 hours per day, while male students spend 8.14 hours daily. The mode of hours spent on cell phones by female students is around 6 to 7 hours per day, while the mode for male students is around 4 to 5 hours and 9 to 10 hours per day.

Table 4
Hours Spend on Cell Phones based on Gender

Hours Spent on Cell Phone	Gender		
	Females	Males	Total
0	1	-	1
0 - 1	1	-	1
1 - 2	2	-	2
2 - 3	2	1	3
3 - 4	8	-	8
4 - 5	13	5	18
5 - 6	16	-	16
6 - 7	17	4	21
7 - 8	12	3	15
8 - 9	12	-	12
9 - 10	16	5	21
10 - 11	10	2	12
11 - 12	9	3	12
12 - 13	4	1	5
13 - 14	-	-	-
14 - 15	4	1	5
15 - 16	2	-	2
16 - 17	-	-	-
17 - 18	2	-	2
18+	10	-	10

Total	141	25	166
Mean	8.6525	8.1400	

Identifying Apps that Are Currently Engaging by the Students

Based on Figure 5, the majority of Foundation Studies in Management students used social media such as WhatsApp, Telegram, Games Apps, Instagram, Facebook, YouTube, etc. In addition, we can see that 160 out of 166 students use WhatsApp the most for some purposes, 105 out of 166 students got Telegram, 132 out of 166 students use Instagram widely, and 127 out of 166 students watch YouTube. In addition, 104 students frequently use WhatsApp, Instagram, and YouTube, 12 of them used only WhatsApp, 1 of them used only Instagram, and 2 of them used only YouTube.

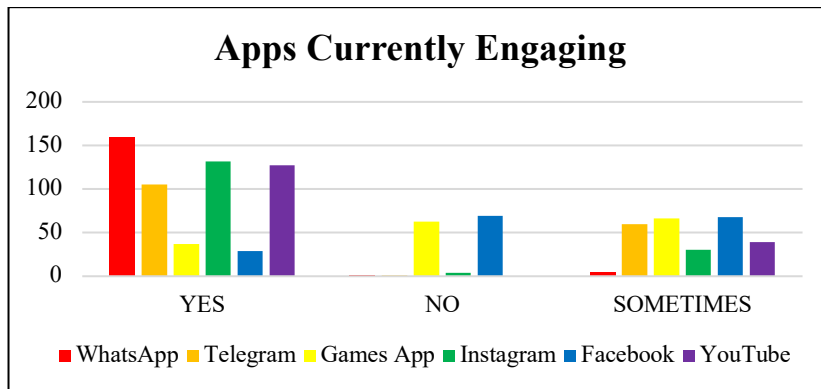


Figure 5. Current Engaging Apps among Students

Reasons for Engaging in Social Media

Figure 6 shows the highest range of mean score for why they chose to engage in social media is 5.3072. It brought the meaning that the number 14 is the most reason they engage in social media. It shows that they often use social media for a long duration due to some academic matters. They use social media frequently to search online resources for their studies. Moreover, the second-highest range of mean score, which is 5.2470, also indicates that most students use social media for reason number 4, as it helps them increase knowledge in various points of view. On the other hand, the lowest range of mean score, which is 2.8494, reveals that most students use social media not to become popular.

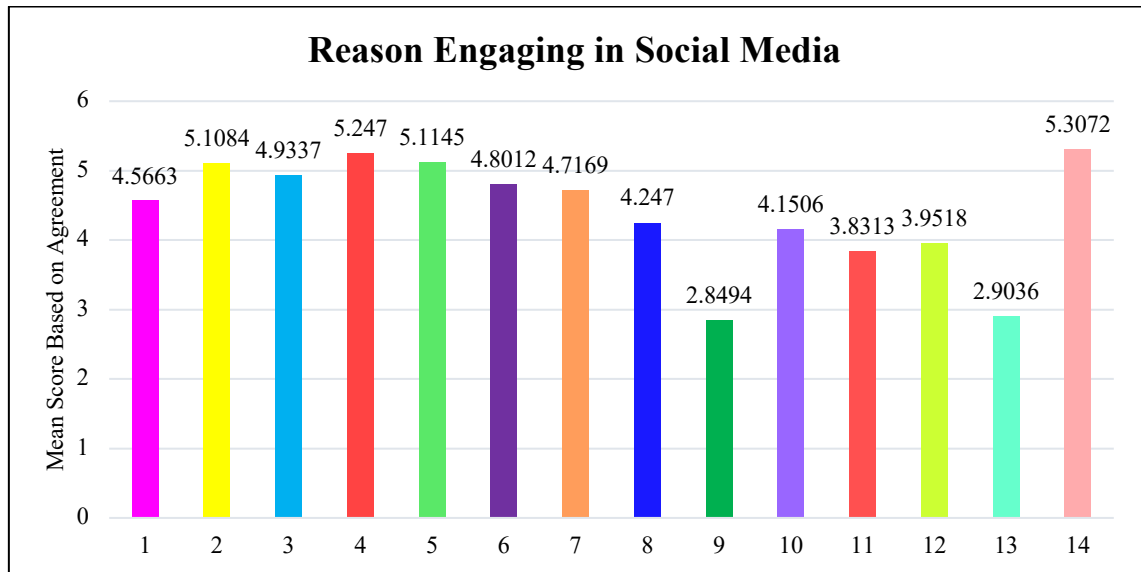


Figure 6. Reasons for Engaging on Social Media

Given by:

1. It gives me a feeling of well-being.
2. It releases stress.
3. It helps me relax.
4. It increases my knowledge.
5. My friends participate.
6. You Can meet new people there.
7. It gives me a chance to meet new friends.
8. It gives me other financial benefits.
9. I like being popular.
10. I like to challenge myself.
11. There may be personal publicity.
12. Certain games are prestigious.
13. I'm used to doing online business from school.
14. There are good online references for my study.

Understanding the Main Digital Skills and Literacies among Students

Referring to Figure 7, we can relate the student's typing skills self-rating with the social media apps used in their daily life. We can conclude that most of the students who use Instagram apps reflect that they have the highest ratings on their typing skills, which is 4.8765, while the students who use Facebook reveal that they have the lowest ratings on their typing skills, which is 4.8454. Even though there are the highest and lowest ratings in their self-rate typing skills, we can determine that the overall rating score is nearly average, which means that having a typing skill is very dominant for all students in this advanced technological era.

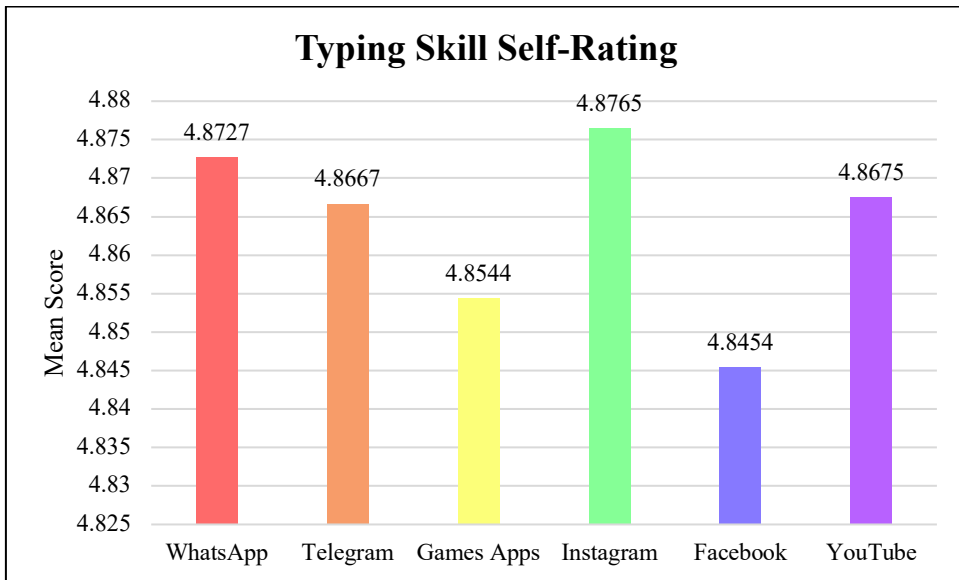


Figure 7. Mean Score Based on Typing Skill Self-Rating According to Apps Currently Engaging

Looking at Figure 8, we linked the hours spent on computers and cell phones to self-rating of web-search skills. We noticed that students who use cell phones and computers for less than 10 hours have a higher mean on their self-rating web search skills, which are 4.9124 for computers and 4.9068 for cell phones. In opposition, students who use cell phones and computers for more than 10 hours have a lower mean of 4.7708 for cell phones and 4.6552 for computers compared to those who use less than 10 hours. In this segment, the standard deviation of data obtained from students who use cell phones for 10 to 18 hours is 0.7217, which means that the data are clustered around the mean compared to others.

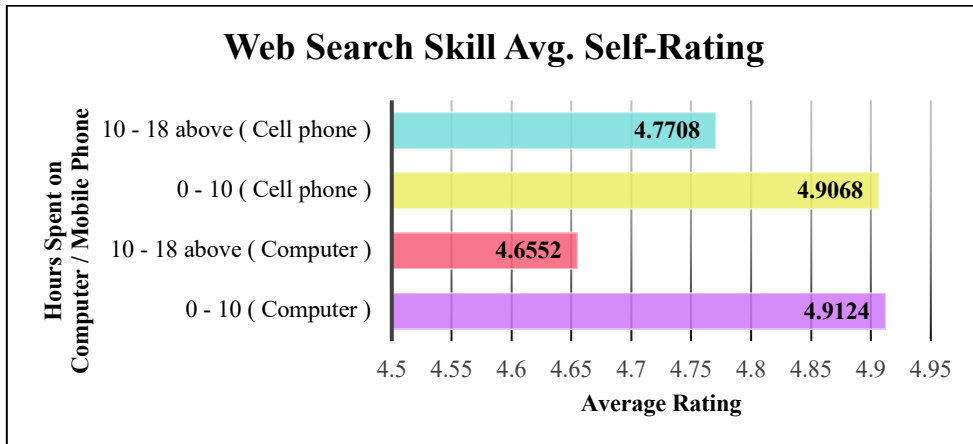


Figure 8. Mean Score Based on Web Search Skill Self-Rating According to Hours Spent on Computer / Cell Phone

Table 5
Mean Score Based on Computer Literacy Ability Skill Self-Rating According to Hours Spent on Computer

Hours Spent on Computer	Computer Literacy Ability Self-Rating						Mean	Standard Deviation
	1	2	3	4	5	6		
0 - 3	-	-	-	1	3	-	4.7500	0.5000
3 - 6	-	-	4	23	19	12	4.6724	0.8863
6 - 9	-	-	3	21	28	3	4.5636	0.6876
9 - 12	-	-	1	17	17	4	4.6154	0.7114
12 - 15	-	-	-	4	1	-	4.2000	0.4472
15 - 18	-	-	1	3	1	-	4.0000	0.7071

Computer literacy is about understanding the basic processes of computers and technology and using those processes in their schoolwork (Jara et al., 2015). Table 5 compares hours spent on computers to self-rating on their computer literacy ability. It is proven that students who use computers below 6 hours have the highest score on their self-rate level of computer literacy compared to students who use more than 6 hours. Apart from that, students who use computers for more than 12 hours and above tend to have the lowest score on their self-rate level of computer literacy. To conclude, students who use computers for less than 9 hours do not mean that they have a low level of computer literacy. In contrast, they have the highest compared to those who use computers for more than 9 hours.

According to Table 6, we can see that the mean score of students living in rural areas is slightly higher than that of students living in urban areas. The mean value of students from rural and urban areas is 5 and 4.73533, respectively. Thus, we should not be prejudiced against rural students because they have higher internet literacy. In addition, students from rural areas have a standard deviation of 0.8545, while students from urban areas have a standard deviation of 0.7436. It means that the data for rural areas is more spread out from the mean.

Table 6
Mean Score Based on Internet Literacy Ability Skill Self-Rating According to Hometown

Hometown	Internet Literacy Ability Self-Rating						Mean	Standard Deviation
	1	2	3	4	5	6		
Urban	-	-	3	36	48	15	4.7353	0.7436
Rural	-	1	1	14	29	19	5.0000	0.8545

6. Conclusion

According to the respondent profile analysis, we can assume that most of the students can afford at least one electronic device and, at the same time, know how to use the Internet. Based on the analysis associated with digital literacy level, we can observe that female students tend to spend more hours on their cell phones and computers in comparison to male students. Nonetheless, the long duration of cell phone and computer usage does not absolutely perform the saying that the level of digital literacy is higher than the others who have low usage on cell phones and computers. Apart from that, most of the students in Foundation Studies in Management responded that they have a moderate-high agreement on their level of digital literacy, which encompasses 4 to 5 rating. Therefore, this means that almost all students understand and can apply simple and fundamental computer knowledge for personal and academic purposes.

To sum up, having a certain level of digital literacy, typing skill, web search skill, and computer literacy are very critical in this digital transformation era. Based on the data analyzed, we may suggest that Foundation Studies in Management coordinator could conduct this analysis consistently for every batch to understand the digital literacy among their students. Subsequently, this can ensure that digital literacy among students is being emphasized, and they will be able to improve it to be as good as possible.

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Authors Contributions

Zahayu Md Yusof - Editing

Anis Hanisah Sobri & Nur Athirah Mahmud – Data Collection

Lim Qing Jun & Goh Hong Quan - Analysis

Conflict of Interest

There is no conflict of interest associated with this publication.

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A STUDY ON MOTIFS OF SASAK TRADITIONAL WEDDING UNDERGARMENT DODOT AND BENDANG IN THE CONTEXT OF SOCIO-CULTURE

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ABSTRACT

The Sasak tribe is a native of the island of Lombok, a small island located in the province of West Nusa Tenggara, Indonesia. The traditional clothing of the Sasak tribe is unique in its clothing style, which is a mixture of Javanese and Balinese customs, but it also adapts the Malay style in the use of songket cloth which is called the "Subahnale songket" cloth as the undergarment. The objectives of this study are to identify and analyse the motifs of songket *subahnale fabrics* and their relations in the social and cultural context of the Sasak tribe. The researcher provided 4 samples of songket *subahnale* which are commonly used as undergarments, called *dodot* and *bendang*, for traditional Sasak clothes. To analyse the cloth motifs, the researcher uses the Ferdinand de Saussure's semiotic theory which studies the meaning of symbols or signs. The results show that there is a dominant type of floral motif from all identified motifs and Islamic values which are found embedded in the symbolism of these motifs. In addition, many motif meanings describe the social and cultural aspects of the Sasak tribe, such as the *nanas* motif, which describes the background of the Sasak people who are agrarian, and the *tri raja* motif, which symbolises the 3 pillars that the king of Lombok must practice for his princess' life. Apart from aiming to find out the social and cultural values implied in the songket motifs on the undergarments of traditional Sasak clothes, this research also aims to be a reference for relevant research which raises the theme of socio-cultural values in the motifs on traditional clothes in Lombok which is still rarely explored.

1. Introduction

According to Mulyadi (2014), Sasak is the name of an indigenous tribe that inhabits the island of Lombok, located in the province of West Nusa Tenggara, Indonesia. The past immigrants, most of whom came from the kingdoms and sultanates of Java, Bali and Malay, and Arab Muslim scholars and traders, influenced the socio-culture of the Sasak people. This is reflected in the pattern of clothing of the Sasak tribe which has a blend of Javanese and Balinese traditional clothing, and there is a Malay touch from songket cloth. The *subahnale songket* is used as the undergarment of these traditional clothes (Siandari 2013).

Pratama (2017) stated that the songket cloth used as traditional undergarments is a typical songket made by the Sasak people called the *songket subahnale*. This cloth is produced traditionally by female weavers from the village of *Sukarara*, a village located in the Central Lombok district. The *Subahnale songket* cloth has its uniqueness in its motifs, some of which still carry animal and human themes which in the Malay tradition may be considered forbidden. In addition, the distinctive feature of songket with the *Subahnale* motif is the hexagonal pattern arranged in a "beehive-like" pattern, especially fabrics with derivatives of the *Subahnale laeq* motif (Rosyidi 2012).

This study focuses on the motifs in Sasak's traditional wedding dress undergarments. As the objective, the motifs of the cloth are identified and categorised, and the meaning of the motifs are described in their relation to the social and cultural aspects of the Sasak tribe. From identifying the motifs and meanings of *dodot* undergarments and their relation to the prevailing social and cultural phenomena of the Sasak tribe, the researcher hopes to provide the readers with a deeper understanding on the culture of the Sasak tribe and their traditional clothing. In addition, this research is also expected to be a reference for research related to traditional and socio-cultural clothing of the Sasak tribe who are residents of the island of Lombok and may as well contribute to scientific fields that study motifs, symbolism, tradition and art, and socio-culture in the Archipelagos.

2. Literature Review

2.1 Sasak Traditional Clothing

Based on Mulhimmah (2017), Sasak traditional clothing is influenced by cultures that have been involved in the development of the Sasak tribe in the past. Nations from the lands of Java and Bali who brought religious and cultural influences at that time also had a major influence on beliefs, culture and art, one of which was traditional Sasak clothing which had a blend of Balinese and Javanese traditional clothing. In addition, the Malay culture also plays an important role in its contribution to the traditional Sasak clothing style. The rapid development of Malay culture is due to the existence of a common identity based on interaction and interrelation (Sumadewa and Hasbullah 2021). In the past, various Malay nations came to harbour in Lombok with the intention of trading, teaching religion, studying, and introducing their arts (Pratama 2017).

Based on Siandari (2013), the main male Sasak traditional clothing consists of a *sapuq*, *pegon*, *keris*, *kereng bereng*, and *dodot*, while for women, it consists of *onggar-onggar*, *ringgit necklace*, *kebaya*, *bebet*, and *bendang*. *Subahnale songket* cloth functions as undergarments in traditional Sasak clothing for both men and women. For in men, it is used as a *dodot*, while in women it is used as a *bendang*. The name "subahnale" originated from the admiration of the villagers when the first woman in the village of *Sukarara* succeeded in making the first songket cloth. The amazed villagers immediately said, "subahnale" which is an absorption word from *Subhanallah* (سُبْحَانَ اللَّهِ) that is derived from Arabic, means "glorified be to Allah" (Misnawati 2016).

Table 1
Male Sasak Traditional Clothing

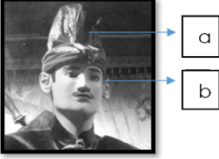
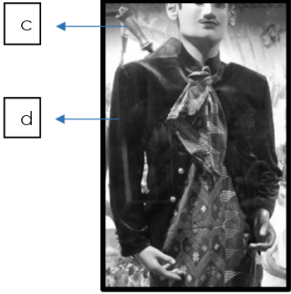
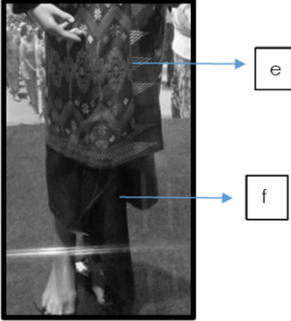
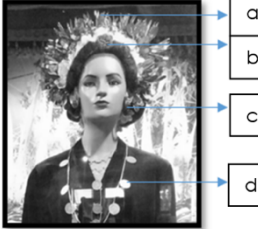
Body part	Detail
<p>1. Head</p> 	<p>a. <i>Sapuq</i> <i>Sapuq</i> is part of the traditional Sasak clothing for men. <i>Sapuq</i> is a type of traditional headband made from <i>batik</i>, woven, or <i>songket</i> cloth.</p> <p>b. <i>Sumping</i> <i>Sumping</i> or chipped is a flower-shaped accessory that is used by tucking it in over the ear.</p>
<p>2. Upper body</p> 	<p>c. <i>Keris</i> <i>Keris</i> is a traditional weapon that can be found in the Archipelago, especially in Java and its surroundings. <i>Keris</i> is a type of dagger with a two-sided blade and indentations on the blade body. <i>Keris</i> is used in traditional Sasak clothing as an accessory by tucking it in at the back for the groom's <i>dodot</i> undergarment.</p> <p>d. <i>Pegon</i> <i>Pegon</i> is a clothing adapted from Javanese <i>beskap</i> clothing which is influenced by the Western culture since the arrival of Portuguese traders in the past. <i>Pegon</i> is used as an outer with only two buttons buttoned at the very top.</p>
<p>3. Bottom and undergarment</p> 	<p>e. <i>Dodot</i> The undergarment section of male traditional Sasak clothing uses a <i>Subahnale songket</i> cloth. This cloth is used by wrapping it around the top of the chest to the knee, and then the top of the rest is rolled up twice and formed to form a fan. This part of the undergarment is called the <i>dodot</i>.</p> <p>f. <i>Selewoq poto</i> <i>Selewoq poto</i> is the inner or bottom undergarment before <i>dodot</i>. For the undergarment, black cloth is used. This cloth is wrapped like a <i>sarong</i> with half of the front left and folded zigzag like a fan with the lower end deliberately left hanging down to touch the ground.</p>

Table 2
Female Sasak Traditional Clothing

Body part	Detail
<p>1. Head and neck</p> 	<p>a. <i>Onggar-onggar</i> <i>Onggar-onggar</i> is a crown decoration in the form of a golden flower made of light metal.</p> <p>b. <i>Remawe</i> decoration A <i>remawe</i> or "rose" decoration is placed on the forehead right in the middle of the parting of the hair.</p> <p>c. <i>Sekang gigi due olas</i> This decoration is in the form of earrings that are quite prominent, made of metal, and coloured gold.</p>

d. *Kalung ringgit*

A string of old ringgit coins on a gold chain and used on the bride.

2. Upper body and arms



e

f

g

h

e. *Kebaya*

Kebaya is a form of Javanese adaptation of clothing which is also used by Sasak brides. Generally, the Sasak wedding *kebaya* has a black colour to match the *pegon*, which is a typical Sasak groom's suit.

f. *Bebet*

The cloth used as a belt is called *bebet*, which can come from ordinary woven cloth, batik cloth, or songket cloth.

g. *Pending*

The *pending* belt is an ornament made of gold-coloured metal and decorated with gemstones.

h. *Gendit*

The *gendit* is a gold metal accessory worn on both wrists by the grooms. *Gendit* shapes can be in the form of tree tendrils, dragons, or snakes that are wrapped around to form a bracelet.

3. Bottom and undergarment



i

i. *Bendang*

The *bendang* is the undergarment for the bride and is used by wrapping it like a *sarong* from above the waist to the ankles. The *bendang* cloth uses *subahnale songket* cloth.

2.1 Motif and Symbolism

Aris (2014) stated that the idea of motifs is created from human experience with the environment and society they live in. Bahauddin & Abdullah (2019) shared the same opinion that motifs inspired by living things, environment, surrounding objects and nature, social and cultural values, reflections of the civilisation and inheritance of oral literacy from the ancestors from the past in which the art was found. In Budiwirman (2018), it is stated that motifs have a close relationship with symbols where their function is to represent objects both physically and abstractly. According to Ferdinand de Saussure in Culler (1986), semiotics is a field that studies symbols, signs, and the meaning of symbols. The semiotic theory of symbols and signs involves 2 important elements which are different but interrelated, namely: signifier and signified.

2.3 Motifs and Socio-culture

In the relationship between motifs and socio-culture, several factors influence the initiation or idea of making motifs. Based on Arba'iyah Ab. Aziz (2020), the following are 5 factors of social and culture that influence the creation of motifs, including:

a. Uses and Benefits

Objects that are considered useful and/or beneficial often become a source of inspiration to humans. The uses and benefits of certain objects give an impression, therefore weavers try to make objects with these characteristics to be used as motifs.

b. Traits and Habits

The traits and habits of an event or object in the environment can also create an impression on humans if there is uniqueness or characteristic that distinguishes it from other events or things.

c. Natural laws and God's decrees

The *Jelo* or sun motif on songket subahnale *jelo* is an example of a motif inspired by natural laws and God's decrees, something that has been arranged in such a way in the universe.

d. Uniqueness

Human amazement begins with their witness to the uniqueness around them. Nature and its surroundings provide a place for living things to adapt and develop in it. Many forms of life and natural characteristics amaze people who are always curious.

e. Symbolism and Implied Meaning

The symbolism of a motif does not always represent the literal meaning of the motif. Motifs can also be used by the initiator to convey implied intentions or meanings that are different from what the motif shows.

3. Methodology





This research is a type of qualitative study. The researchers were using observation and interviews for data collection methods. From the observation, the researchers provided 4 samples of *subahnale songket* used as undergarments. The songket fabrics used as samples are the *subahnale bulan begantung*, the *subahnale nanas*, the *subahnale rincik*, and the *subahnale awun*. Therefore, the researchers identified the motifs and categorised them into several types. The researchers interviewed several informants who were able to provide reliable information regarding this field. Next, the data collection was observed based on the information obtained from the interview. Research informants came from various backgrounds, including weavers, librarians, museum employees, academics, representatives of traditional institutions, and traditional elders.

Data analysis uses the semiotic theory proposed by Ferdinand de Saussure. This semiotic theory is used to interpret the meaning contained in symbols or signs that are in motifs. The separable components of semiotics can be divided into *signified* and *signifier*. The meaning of these motifs is then identified concerning the social and culture of the *Sasak* tribe who are the original inhabitants of the island of Lombok.

4. Results

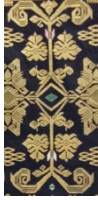














Following the objective of this study, namely examining the motifs in the undergarment of *Sasak* traditional clothing, the 4 samples of the songket were identified. Through interviews, the informants were asked information about the meaning of motifs and their relation to the social and culture of the *Sasak* tribe, and then the researchers observed the samples and the results of the interviews and collected the footage needed for documentation purposes. The results were obtained after the collection of data in the form of songket cloth motifs used in the undergarment of traditional *Sasak* clothing and were analysed through data analysis which carries the Ferdinand de Saussure's semiotic theory. The following table provides 4 samples of songket weaving that have been collected:

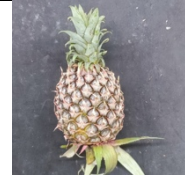
Table 3
Data Collection

No.	Sample	Description
1		<p>Figure 1: Subahnale bulan begantung cloth.</p> <p>Name : Subahnale Bulan Begantung Height : 100cm Length : 200cm Material: Cotton Design : The songket subahnale bulan begantung has an index motif in the form of a flower-shaped moon flanked and hung between two palm trees. This fabric has a black base colour with gold decorative threads.</p>
2		<p>Figure 2: Subahnale nanas cloth.</p> <p>Name : Subahnale Nanas Height : 100cm Length : 200cm Material: Cotton Design : This songket cloth has a red base colour with a motif index of pineapple.</p>
3		<p>Figure 3: Subahnale rincik cloth.</p> <p>Name : Subahnale Rincik Height : 100cm Length : 200cm Material: Cotton Design : This subahnale songket cloth has a motif in the form of colourful roses, each of which is in a hexagonal-shaped motif.</p>
4		<p>Figure 4: Subahnale awun cloth.</p> <p>Name : Subahnale Awun Height : 100cm Length : 200cm Material: Cotton Design : This weaving cloth is a songket subahnale with an index motif in the form of cloudy clouds. The basic colour of this fabric is black with dark green trim.</p>

The motifs on songket are investigated and searched for the related subject matter. Here are the 4 fabrics and the motifs contained therein as well as the matter object represented by each motif. The motifs are broken down and matched with respective object matter and then analysed for the meaning contained therein.

Table 4
Songket Motifs

Songket	Motif	Subject Matter
1. Songket Subahnale Bulan Begantung		
a. 	a. <i>Palem</i> 	a. Palm tree 
b. 	b. <i>Bulan begantung</i> 	b. Moon 
c. 	c. <i>Awun</i> 	c. Cloud 
d. 	d. <i>Kute</i> 	d. Geometric shapes of line, triangle, circle, rhombus, and meander 
e. 	e. <i>Rembaung</i> 	e. Bamboo shoot 
<i>(Verified by Satriadi, 2022)</i>		
2. Songket Subahnale Nanas		
a.	a. <i>Nanas</i>	a. Pineapple



b.

b. Nanas (2)

b. Pineapple (2)



c.

c. Remawe

c. Rose



d.

d. Kute

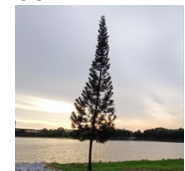
d. Geometric shapes of meander, straight line, zigzag line, and parallelogram



e.

e. Cemara

e. Pine tree



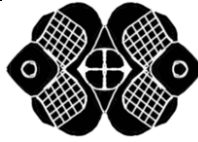
(Verified by Satriadi, 2022)

3. Songket Subahnale Rincik

a.

a. Melati

a. Jasmine



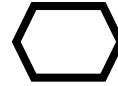
b.



b. *Tri raja*



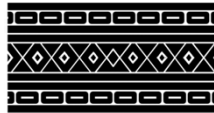
b. Geometric shape of a hexagon



c.



c. *Kute*



c. Geometric shape of line, rectangle, triangle, and rhombus



d.



d. *Cemara*



d. Pine tree



(Verified by Satriadi, 2022)

4. Songket Subahnale Awun

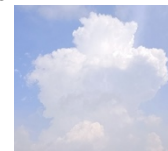
a.



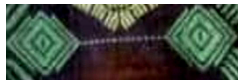
a. *Awun*



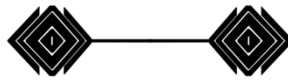
a. Cloud



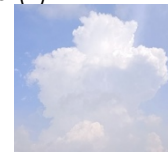
b.



b. *Awun*



b. Cloud (2)



c.



c. *Jelo*



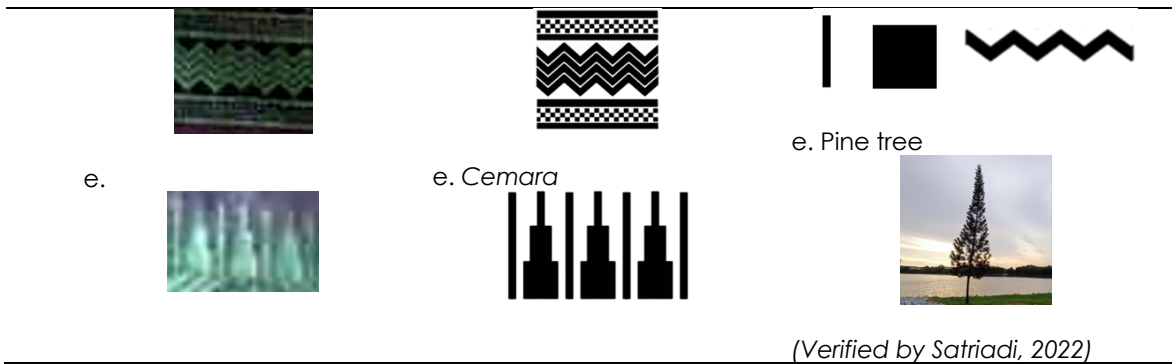
c. Sun



d.

d. *Kute*





d. Geometric shapes of line, rectangle, and zigzag line



(Verified by Satriadi, 2022)

The motifs that have been identified and the subject matter of each has been found and then analysed for the symbolism that lies behind them. To find the meaning of the symbolism that represents these motifs, the Ferdinand de Saussure's semiotic theory is used to analyse each motif and look for the meaning of these motifs in the social and cultural context of the Sasak people. The scientific field of semiotics in the Saussurean tradition is called semiology, which broadly means the study of signs. Below are the motifs along with their respective subject matter and symbolism.

Table 5
Motif and Symbolism

Signifier		Signified
Motif	Subject Matter	
1. Palem Motif Symbolism		
	 Palm tree	The palm tree motif often appears in <i>subahnale songket</i> motifs, especially in the <i>bulan begantung</i> , <i>keker</i> , and <i>mahkota</i> motifs. The palm tree is a tree species characterised by dicotyledonous fruit, fibrous roots, and reticulate leaf veins. The characteristic of a palm tree that has a long trunk with shady leaves is a symbol of protection and security. However, in the <i>subahnale bulan begantung</i> , this palm tree means uncertainty and restraint (Lestari, Paridi, and Ashriany 2019).
2. Bulan Begantung Motif Symbolism		
	 Moon	The moon motif on the <i>bulan begantung</i> is a modification of the rose or <i>remawe</i> motif which has been changed in such a way. The symbols of the rose and the moon in Sasak culture mean women, and feminism, and sometimes they can mean purity and dignity (Lestari et al. 2019).
3. Awun Motif Symbolism		



Awun



Cloud

The awun motif is a modification of the *tri raja* motif from *subahnale laeq*. This motif is inspired by the shape of a floating cloud but is simplified into a geometric hexagon shape. In the traditional religious teachings of the Sasak people who are still based on the *Hindu-Buddhist* religion, the cloud is a symbol of shade, safety and protection. However, after the entry of Islam, this value changed and the cloud became a sign of incoming rain. The value of teaching in Islam believed that rain is a symbol of blessing and sustenance, and implies the coming of good things (Satriadi, an interview on 26 May 2022).

4. Kute Motif Symbolism



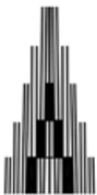
Kute



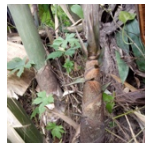
Geometric shapes of Lines, zigzags, parallelograms, triangles, circles, rhombus, rectangles, and meanders

The word *kute* in the Sasak language means fort. The *kute* motif has many types and consists of various geometric and abstract shapes. In songket *subahnale* strictures, the *kute* motif is usually located on the top and bottom edges of the cloth which is illustrated to protect the object in the middle. The *kute* motif itself is a symbol of the protection and guarantee of security given by the king (Rosyidi 2012).

5. Rembaung Motif Symbolism



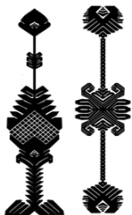
Rembaung



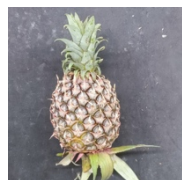
Bamboo shoot

The *rembaung* motif is a simplification of the shape of a bamboo shoot object into a geometric shape. The form of the *rembaung* motif is a square with high steps like a pyramid. The *rembaung* motif is usually located on the structure of the *subahnale* songket cloth on the edges of both sides of the cloth. The majority of the Sasak people are an agrarian population, bamboo shoots are a symbol and a sign of the start of the farming season. Good bamboo shoots appear in a good rainy season. The unique nature of bamboo shoots which is a sign of nature is what has inspired the motif of *rembaung*. Apart from being a symbol of the rainy season, the roof is also a symbol of fertility (Rosyidi 2012).

6. Nanas Motif Symbolism



Nanas



Pineapple

The word "*nanas*" is derived from the Sasak language which is an uptake of the Malay language which means "pineapple", which is also the motif inspired by this fruit. Pineapple farming has become a side job for most of the Sasak people who are known to be agrarian. Although pineapple is not one of the main agricultural commodities, it is sufficient to help the community in supporting their needs for trading activities. The nature of the pineapple which is very compatible with the type of soil of the residents there and easy to grow is considered

a blessing and uniqueness of the fruit. This *nanas* motif is considered a blessing from God almighty who has entrusted the Sasak people with the fertile *Gumi Lombok* land (Satriadi, an interview on 26 May 2022).

7. Remawe Motif Symbolism



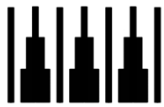
Remawe



Rose

Remawe in the Sasak language means "rose". The *remawe* motif is a simplification of the rose flower object shape which is made geometric and is a derivative of the *subahnale laeq* motif because it still represents the hexagonal shape typical of *subahnale*. In the culture of the Sasak tribe, the rose or the moon is a symbol of femininity or women. It is the duty of men internally in a family to protect the women in it, such as their sisters, mothers, and wives, and in the wider or external milieu such as society, men must be good at protecting the women around them through guard their lust and look from women (Rosyidi 2012).

8. Cemara Motif Symbolism



Cemara



Pine tree

The *cemara* motif is a motif inspired by a type of pine tree that is often found growing on the coast on the island of Lombok. The pine tree, according to the Sasak culture, is a symbol of popular culture that is not easily forgotten, is always remembered, and practised. This understanding is a representation of the uniqueness of the evergreen tree which always finds a way to keep growing and developing even though it is repeatedly knocked down by the waves and wind from the tide (Satriadi, an interview on 26 May 2022).

9. Melati Motif Symbolism



Melati



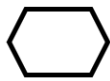
Jasmine

The *melati* motif on songket *subahnale rincik* is a stylization of the jasmine flower figure. The *melati* motif on the cloth has 5 colour variations and has a random pattern which makes this cloth called the *subahnale rincik* cloth, wherein in the Sasak language, the word *rincik* means random, uncertain, or something patternless. Jasmine is a symbol of human personality and the uncertain pattern on the colour of this cloth shows the human nature that is uncertain, often lost, and often easily deceived. However, like the fragrance of jasmine, there is always hope no matter how bad the past is. The laying of parallel jasmine motifs in hexagonal motifs is a symbol of the hope that humans will find a straight path and return to order as long as they adhere to a religion (Satriadi, an interview on 26 May 2022).

10. Tri Raja Motif Symbolism



Tri raja



The geometric shape of a

The hexagon motif which is often found on *subahnale* songket cloth is called the *tri raja* motif. The *tri raja* motif is used as a symbol of the social status of the king. This motif represents 3 points that the king and his government must be able to guarantee to their princess as a form of their honour, among which are: (1) a princess's night journey

hexagon

must be illuminated with lighting, (2) when leaving the house, the princess must be accompanied by maids or the male relative or biological mother, surrogate mother, or wet-nurse mother; and (3) it is only permissible to leave the house after the daughter gets her parents' permission (Satriadi, an interview on 26 May 2022).

11. Jelo Motif Symbolism



Jelo



Sun

The *jelo* motif is a cosmic type of motif that imitates the shape of the sun object. In pre-Islamic times, the sun symbol was a representation of "Surya", the sun god who has power over the sun. After the arrival of Islam to Lombok and the spread of Islamic values, these values changed to become more Islamic and the sun symbol became a form of manifestation of the power of God, who governs what is in the heavens and on earth (Satriadi, an interview on 26 May 2022).

5. Discussion

Of the 4 songket samples used, a total of 17 motifs and 3 subject matters with several variations of the motifs were obtained. Based on Arba'iyah Ab. Aziz (2020), motifs can be put into 7 categories of motifs, including:

- Flora
- Fauna
- Cosmic
- Objects
- Culinary
- Calligraphy; and,
- Geometric

The motifs from the identification of 4 samples of songket subahnale were analysed and put into these 7 categories.

Table 6
Motif Categorization

No	Songket weaving	Motifs categorization						
	Categories	Flora	Fauna	Cosmic	Object	Geometric	Culinary	Calligraphy
1	Subhanale bulan	a. Palm tree	-	a. Moon	a. Cloud	a. Kute	-	-
	begantung	b. Bamboo shoot						
	Total	2	-	1	1	1	-	-
2	Subahnale nanas	a. Pineapple	-	-	-	a. Kute	-	-
		(2) b. Rose c. Pine tree						
	Total	4	-	-	-	1	-	-
3	Subahnale	a. Jasmine	-	-	-	a. Tri raja	-	-

	<i>rincik</i>	b. Pine tree				b. Kute		
	Total	2	-	-	-	2	-	-
4	<i>Subahnale awun</i>	a. Pine tree	-	a. Sun	a. Cloud (2)	a. Kute	-	
	Total	1	-	1	2	1	-	-
	Total Summary	9	-	2	3	5	-	-

Then, these motifs are analysed with the social and cultural influences that inspired the creation of these motifs. Based on Arba'iyah Ab. Aziz (2020), 5 aspects influence the creation of motifs, including:

- Uses and benefits
- Traits and habits
- Natural laws and God's decrees
- Uniqueness
- Symbolism and implied meaning

The 17 motifs obtained were analysed and then included in the 5 categories of aspects that influence the development of motifs, namely as follows.

Table 7
Motif Influencing Aspects

No	Songket weaving		Motifs influencing aspects			
	Categories	Uses and benefits	Traits and habits	Natural laws and God's decrees	Uniqueness	Symbolism and implied meaning
1	<i>Subhanale bulan begantung</i>	a. Bamboo shoot b. Palm tree	-	a. Cloud	-	a. Moon b. Kute
	Total	2	-	1	-	1
2	<i>Subahnale nanas</i>	a. Pineapple (2)	-	-	a. Pine tree	a. Rose b. Kute
	Total	2	-	1	1	2
3	<i>Subahnale rincik</i>	-	-	-	a. Pine tree	a. Jasmine b. Tree raja c. Kute
	Total	-	-	-	1	3
4	<i>Subahnale awun</i>			a. Cloud (2) b. Sun	a. Pine tree	a. Kute
	Total	-	-	3	1	1
	Total Summary	4	-	5	3	7

6. Conclusion

Sasak traditional clothing has its uniqueness because of the many cultural elements resulting from the socio-cultural assimilation of the Sasak tribe with cultural influences from outside the island of Lombok originating from various regions. It can be seen that the traditional clothing of the Sasak tribe has a blend of Javanese and Balinese traditional clothing styles, but on the undergarments, instead of using batik cloth or simple weaving, they used songket cloth which is the

representative of Malay culture. This is the result of the absorption of Malay culture brought by Muslim traders and scholars in the past. There are 2 types of undergarments in typical Sasak clothing, including *dodot* for the groom and *bendang* for the bride. Both types of undergarments use songket as a basis. The songket cloth used is also a special songket cloth typical of the Sasak tribe, which is called the *songket subahnale*.

The researcher has identified the motifs on the cloth samples and with this, the objective of this research has been fulfilled. It is found that in the category of motifs on the cloth, there are as many as 9 floral motifs, 5 geometric motifs, 3 object motifs, and 2 cosmic motifs. In addition, this study also found that the aspects that mostly influenced the creation of motifs were the aspects of *symbolism and implied meaning* in as many as 7 motifs, and the remaining 5 were from the aspect of *natural laws and God's decrees*, 4 from the aspects of *uses and benefits*, and the least was from the aspect of *uniqueness* that has 3 motifs. Hence, from the 4 samples of the *subahnale* songket cloth, it is found that the floral motif is the motif that has the most number and the aspect that most strongly influences the creation of the cloth motif is the aspect of *symbolism and implied meaning*. Many of the social and cultural values in these *subahnale* songket motifs are values that lean towards a very strong Islamic teaching or are values of transitional teaching from the beliefs of the ancestral religions and the influence of *Hindu-Buddhist* religion brought by ancient kingdoms from the island of Java and Bali in pre-Islamic times on the island of Lombok.

Although the results of this study cannot be immediately used as a benchmark for the overall results of the motifs of the *subahnale* songket cloth, the results of this study can provide an overview of the dominant categories and socio-cultural aspects that influence the creation of motifs on the *subahnale* songket cloth of the Sasak tribe on the island of Lombok.

Finally, this research is expected to have significance as a reference in research related to traditional Sasak tribal clothing, *songket subahnale*, and social and cultural aspects of the Sasak tribe. Research on the *subahnale* songket fabric used in the undergarments of traditional Sasak clothing is very interesting to study more deeply so that the results of the research can show how strong the influence of the entry of Islam was in the archipelago and to be able to see more closely and more broadly, also to find out more deeply the traces of civilisation the Malay nation, the spread of religion, and historical traces of ancient kingdoms in the archipelago, especially to know historical values through social and cultural records as outlined in the motifs on the songket *subahnale* typical of the Sasak tribe.

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A TEACHING STRATEGY FOR DYSLEXIC CHILDREN: UTILISING A MULTI-SENSORY APPROACH

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ABSTRACT

Early detection of learning difficulties, such as dyslexia, in children aged 5 and below is crucial to provide them with the appropriate attention and support in developing essential skills such as letter recognition, spelling, and reading. Dyslexic children often struggle with spelling, highlighting the need for effective interventions. This study aimed to evaluate the effectiveness of the Smart Board, a teaching tool, in assisting beginner-level dyslexic children in developing simple Malay syllables. The intervention utilised a multi-sensory approach, incorporating kinesthetic, auditory, visual, and tactile senses to teach students how to form basic Malay syllables using lowercase letters. The research was conducted at the DAM Centre Pulau Pinang Branch, DAM Centre Sg. Petani Branch, and SK Bukit Kiara Kedah in Malaysia. The findings have indicated positive outcomes from the use of the Smart Board as a teaching tool. The participants showed improvement in recognising letters, forming syllables, rewriting accurately, and spelling correctly. The multi-sensory approach of the Smart Board enhanced their understanding and application of basic Malay syllables. The results support the effectiveness of the Smart Board in assisting dyslexic children at the beginner's level. The multi-sensory approach, integrating kinesthetic, auditory, visual,

and tactile elements, successfully addressed spelling difficulties. The interactive and engaging nature of the Smart Board facilitated the participants' learning experience and contributed to their progress in building basic Malay syllables. The study highlights the efficacy of the Smart Board as an intervention for beginner-level dyslexic children in developing simple Malay syllables. Proper utilisation of the Smart Board in dyslexia centres, schools, and therapeutic facilities is essential to maximise its benefits. Future research should focus on investigating teaching aids for dyslexic children at intermediate and advanced levels, expanding the available resources for their education.

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1. Introduction

This paper explores the integration of research on interventions for dyslexia, focusing specifically on the recognition of alphabets when designing teaching aids for dyslexic children who are beginners in learning the Malay Language. Dyslexic children face challenges in letter recognition, which can impede their reading, spelling, and writing abilities, as well as their ability to concentrate during learning or reading (Hebert et al., 2018).

Dyslexia is a prevalent learning difficulty affecting a significant number of children worldwide. The Malaysia Ministry of Education has reported approximately 15,118 students with dyslexia in 2022 (Ministry of Education, 2022), and this number has continued to rise (Yazid & Yin, 2015).

Dyslexic children encounter difficulties in letter recognition (Jamali et al., 2019), which can hinder their reading skills (Izzati Suffiah & Ai Cheng, 2022), as well as their ability to concentrate during learning or reading (Nadelson et al., 2019).

Dyslexia is associated with visual confusion, a common learning challenge that impacts language, literacy, memory function, reading, and motor skills (Ramus et al., 2003). Unfortunately, dyslexic children often lack access to specialised treatments, such as special educators or extra classes, which results in unequal opportunities and limited access to quality education (Abd Rauf et al., 2018).

Despite the challenges that are faced by dyslexic children, there is a growing body of research on interventions that are aimed at supporting their learning (Yuzaidey et al., 2018; Lee, 2007). One area of research focuses on developing teaching aids to assist dyslexic children in their learning process. These teaching aids are designed to help dyslexic children to recognise letters, construct simple words, and improve their reading, writing, and spelling skills. In correspondence, the Smart Board is a teaching aid that has been specifically developed to support dyslexic children in their learning process. This educational tool emphasises differentiating vowels and consonants through touchable, 3D embossed letter shapes. Additionally, the Smart Board utilises distinct colours for each alphabet to facilitate letter recognition and differentiation for dyslexic children.

For dyslexic children, the Smart Board aims to be user-friendly and engaging. This teaching aid focuses on alphabet recognition by segregating vowels and consonants. Simultaneously, the term 'Board' refers to rewriting letters to facilitate the dyslexic children's learning. The Smart Board proves effective as it provides the dyslexic children with a fun and engaging method to enhance their reading, writing, and spelling skills. Significantly, teaching aids play a crucial role in supporting teachers and students by improving learning strategies and skills.

They can enhance learning outcomes for all students, including those with learning difficulties such as dyslexia. Specifically designed for novice learners in Grades 1-3 who struggle with recognising lowercase letters and constructing simple syllables in the Malay Language, the Smart Board serves as an effective teaching aid for dyslexic children in the classroom.

Dyslexic children require additional assistance to enhance their learning progress. Dyslexia is a condition that affects children differently, and there is no one-size-fits-all approach. However, instructional aids such as the Smart Board have proven beneficial in improving the reading, writing, and spelling skills of dyslexic children. The Smart Board, as an engaging and effective teaching aid, can support dyslexic children in their learning process, leading to improved learning outcomes and academic performance.

2. Literature Review

The word 'Dyslexic' is Greek and it refers to problems with words (Benton, 1976). The definition of dyslexia can vary based on specific criteria but generally involves difficulties with recognising letters, reading words, and spelling accurately, leading to low levels of fluency and accuracy (Adlof & Hogan, 2018). Dyslexia can also impair speech and writing language, coordination, self-control, and focus. These obstacles might make learning to read and write difficult, also to perform mathematical calculations are more challenging for individuals with dyslexia.

Dyslexia manifests in several ways. Firstly, directional confusion is a common problem among dyslexic children which can manifest in various ways, ranging from the difficulty in distinguishing left from right to having trouble in reading maps accurately (Bald, 1994). Additionally, this confusion with direction can lead to the reversal of letters, words, or numbers. Symptoms of directional confusion include the tendency to reverse letters, such as m and w, or p and q, while reading or writing. Dyslexic children often struggle to identify the correct orientation of letters and may mistake them for others, such as confusing [n] with [u], [m] with [w], or [p] with [d] or [b].

Secondly, children with dyslexia struggle with the sequence of letters, such as comprehending and remembering the order of things. As a result, their reading and spelling abilities are hindered. Third, underlying deficits such as poor motor skills, inaccurate visual interpretation of symbols and words, and trouble remembering visual impressions can all have an impact on their handwriting ability (Monczka et al., 2011). The dyslexic children's learning processes differ from those of normal developing children, necessitating more help, precise instructions, and face-to-face tutoring as the most successful teaching method. The Dyslexia Association of Malaysia (DAM) has classified learning into three levels: beginner, intermediate, and advanced. At the beginner's level, which typically occurs between 7 and 9 years of age, dyslexic children face difficulties in remembering and recognising letters and numbers. They may also struggle with recognising letter and number shapes, spelling, and sounding out each letter, counting and saying numbers, building two simple syllables, and rewriting letters and numbers. As the dyslexic children's learning processes differ from those of other children, they necessitate additional guidance, precise instructions, and face-to-face tutoring for the optimal teaching strategy. The Dyslexia Association of Malaysia (DAM) classifies learning into 3 levels: beginner, intermediate, and advanced. Dyslexic children between the ages of 10 and 12 are better able to enhance their skills in producing hard syllables and building entire sentences in the intermediate stage. At the advanced stage, dyslexic children aged 13 and above continue to learn by monitoring and observing their capacity to form complex phrases and use more advanced vocabulary, eventually leading to the ability to read full paragraphs or books.

To effectively support the teaching process for dyslexic children, teachers need a diverse range of teaching tools. The play while learning strategy is useful and appropriate for dyslexic children who struggle to concentrate for long periods and benefit from repetitive teaching techniques. Thus, the problem of reading is one of the challenges in writing and counting

because writing skills are needed for development and progress to stimulate successful reading (Al Hadhrami et al., 2022). Multisensory interventions based on the Orton Gillingham's theory, which focuses on letter recognition and sentence construction activities, have been shown to increase the reading comprehension in dyslexic children (Ana Lorena, 2020; Diane Hansen, 2017).

Play-based learning engages and inspires dyslexic children to learn without getting burdened or overwhelmed. Indeed, Al Hadhrami et al. (2022) mention that the right and effective strategy is one of the methods to encourage and improve the reading ability among dyslexic children (León et al., 2017). Former initiatives, such Madrigale, Bijak Membaca, and MyLexics, were created to create instructional action games, encourage engagement and motivation, and help dyslexic children to visualise Malay letters, words, sentences, and pronunciations (Di Tore et al., 2014; Muhammad Haziq et al., 2009). These interventions can help the dyslexic children to recognise letters, spell, and read more effectively without becoming bored or frustrated.

The goal of this study is to look into the Orton-Gillingham Approach as a method for teaching dyslexic people literacy. The method is based on Dr Samuel Orton and Anne Gillingham's theory that in order for individuals with severe dyslexia to learn reading, writing, and spelling, they need a multimodal approach that involves their auditory, visual, tactile, and kinesthetic channels (Rose & Zirkel, 2007). Through the use of all the five senses, this method stimulates the brain to take in and comprehend information. Therefore, by using all of the senses, which serve as pathways or bridges in their brains, the Orton-Gillingham Approach can be a useful manual for teaching struggling dyslexic youngsters to read. By using a multisensory teaching method, dyslexic children can learn and understand more effectively, making this approach an essential tool in literacy teaching (Subramaniam et al., 2013).

3. Problem Statement

Dyslexia is a learning difficulty that significantly impacts children's ability to recognise letters, spell words, read accurately, and write proficiently (International Dyslexia Association, 2017). In the context of Malaysia, where Bahasa Melayu is the predominant language and serves as the medium of instruction in schools, dyslexic children face unique challenges in adapting to the curriculum. The Ministry of Education in Malaysia has mandated the use of Bahasa Malaysia as the primary language of instruction in both public and private schools (Ministry of Education, 2013). The majority of the course material is taught in Bahasa Malaysia. The education board also follows the principle of "Upholding Bahasa Malaysia and Strengthening the English Language", which states that Malay would continue to be used as the primary language of instruction in national schools.

Dyslexic children encounter difficulties in recognising lowercase letters, which impairs their ability to develop strong reading skills and to comprehend written information (Nur Amalina et al., 2015). Additionally, their struggles in spelling and word comprehension limit their readiness to learn new vocabulary. These challenges hinder their academic progress and can lead to frustration and a lack of confidence in their abilities. Furthermore, dyslexic children often face difficulties in maintaining focus and concentration during learning sessions, which further hampers their comprehension and retention of information (Manisah & Norizza, 2016).

To address these issues, there is a pressing need for effective interventions and teaching aids that cater specifically to the learning needs of dyslexic children. Multisensory teaching approaches have shown promise in supporting dyslexic learners by engaging multiple sensory modalities, such as auditory, visual, tactile, and kinesthetic, to enhance their learning experiences and concentration (Siti Zunaida & Mohd Hanafi, 2019). By providing a multisensory environment, dyslexic children can develop stronger connections between letters, sounds, and words, leading to improved reading, spelling, and writing abilities.

Unfortunately, the existing interventions and teaching tools that are available for dyslexic children in Malaysia are inadequate, resulting in limited support for their unique learning

requirements. There is a lack of comprehensive intervention guidance programs that are specifically designed for dyslexic children within the Malaysian education system (Abu Bakar et al., 2023). As a consequence, teachers may struggle to provide appropriate and effective assistance, and the dyslexic students may not receive the targeted support they need to overcome their difficulties and to succeed academically.

Additionally, the availability of teaching aids that address the specific challenges that are faced by dyslexic children in the Malaysian context is limited. Therefore, teachers need access to well-designed and effective teaching tools that can facilitate letter recognition, spelling, and word comprehension for dyslexic learners. These teaching aids should employ evidence-based strategies, such as multisensory approaches, to enhance the learning outcomes and educational experiences of dyslexic children (Yuzaidey et al., 2018). By incorporating appropriate teaching aids into the classroom, teachers can provide dyslexic students with the necessary support to overcome their learning difficulties and achieve academic success.

In summary, the challenges that are faced by dyslexic children in Malaysia, including difficulties in recognising lowercase letters, spelling, reading comprehension, and maintaining focus during learning, necessitate effective interventions and teaching aids. The current lack of comprehensive intervention programs and the limited availability of appropriate teaching tools hinder dyslexic children from receiving the targeted support they require. Addressing these issues is essential to ensure that the dyslexic children in Malaysia have equal opportunities and access to quality education, enabling them to overcome their learning difficulties and reach their full potential.

4. Significance of Study

This research holds significant implications and benefits in the following areas:

Educational Resources for Dyslexic Children:

This study provides valuable educational resources that are aimed at enhancing the literacy skills of dyslexic children who are at the initial stages of learning letter recognition, spelling, reading, and writing. The research focuses on the specific context of the Malay language and employs a multisensory approach to support dyslexic children in their learning journey. The findings of this study can serve as a practical guide for educators, parents, and other individuals who are involved in assisting dyslexic children, equipping them with effective strategies and resources to address the learning challenges that are faced by these children. By incorporating the research outcomes into educational practices, dyslexic children can receive tailored support to improve their literacy skills and overall academic performance.

Advancement in Teaching and Learning Approaches for Dyslexic Children:

The justification for this study holds relevance and significance for various stakeholders, including the Ministry of Education, rehabilitation facilities, and other organisations that are involved in supporting dyslexic children. By highlighting the need for teaching and learning approaches that are specifically tailored to the needs of dyslexic children, this research advocates for improvements in educational practices and interventions. The findings can serve as a valuable tool to guide policymakers, educators, designers, and professionals in the field, encouraging them to adopt more inclusive and effective strategies in the instruction of dyslexic children. By promoting a more engaging and interactive approach, based on the specific needs and challenges of dyslexic children, this research can contribute to enhancing the quality of educational outcomes for dyslexic students and fostering a more inclusive educational environment.

5. Research Questions:

1. How does the utilisation of a teaching tool contribute to the effectiveness of helping dyslexic children at the beginner's level in constructing basic Malay syllables using lowercase alphabets?
2. How might multi-sensory elements help beginner-level dyslexic children in building basic Malay syllables?

6. Research Objectives:

1. To examine the efficacy of a teaching tool in assisting dyslexic children at the beginner's level to construct basic Malay syllables using lowercase alphabets.
2. To explore the utilisation of multi-sensory elements as a strategy to support dyslexic children at the beginner's level to build basic Malay syllables

7. Methodology

This study has employed a methodology based on qualitative research and procedures. Qualitative research is deemed appropriate as it allows for an understanding of participants' engagement and experiences from their own perspectives, rather than those of the researchers. Therefore, class observations were utilised as the primary research tools in this study.

Participants

17 dyslexic children were chosen for the study using a purposive sample method. This method does not require a predefined hypothesis or participant pool, rather, it entails a purposeful and non-random selection of people who meet the criteria for the study. The selected participants, are in the age range from 7 to 11 and are drawn from government schools with dyslexia programs, as well as from the two centres from the Dyslexia Association Malaysia (DAM), namely, DAM Pulau Pinang Branch and DAM Sg Petani Branch, all three of which offer dyslexia programs. Their dyslexia status and their shortcomings in letter identification and syllable production served as the primary selection criteria.

Method of Data Collection

The study involved observing the beginner-level dyslexic children and their teachers who acted as instructors in using the Smart Board as a teaching tool for improving their literacy skills in the Malay language. The Smart Board was effective in teaching alphabet recognition, letter recognition, and syllable construction through colour coding. The teacher will write syllables on the board for the dyslexic students, and they will then be required to complete tasks such as word recognition and comprehension. For enhanced letter identification, the letters will be presented as 3D objects that may be touched and held. The dyslexic children then have to arrange the letters in the correct order and rewrite the spelling of the syllable. The researcher used pictures and phone recordings to document the class observation.

Data Analysis:

The collected data were analysed using Atlas.ti, a qualitative data analysis software. Specialised software such as ATLAS.ti helped the researchers to analyse data more effectively by improving organisation, memory retention, and maintaining a systematic approach (Gulsia & Yadav, 2023), through a systematic process, the data were coded, categorised, and analysed to identify patterns, themes, and relationships that were relevant to the research objectives.

Coding Process:

The coding process involved the identification and assignment of meaningful codes to segments of data related to the effectiveness of the Smart Board as a teaching tool. The initial coding was performed using an inductive approach, allowing for the emergence of themes directly from the data. The codes were then organised into categories and subcategories, forming a coding framework for further analysis.

Data Interpretation:

The interpretation of the data involved a comprehensive examination of the coded segments and their relationships. The themes and patterns that had been identified in the data were interpreted to understand the effectiveness of the multi-sensory approach that was facilitated by the Smart Board in supporting the dyslexic children's development of the basic Malay syllables.

Validity and Reliability:

To ensure the validity and reliability of the findings, several measures were taken. Firstly, multiple researchers were involved in the coding process to enhance intercoder reliability. Consensus meetings were held to discuss and resolve any discrepancies. Additionally, member checking was conducted by involving authors 2, 3, 4 and 5 who were positioned to audit the process of the analysis process to ensure accuracy and credibility (Birt et al., 2016).

The research findings are presented and discussed based on two research questions:

RQ1: How does the utilisation of a teaching tool contribute to the effectiveness of helping dyslexic children at the beginner-level in constructing basic Malay syllables using lowercase alphabets?

The study used class observation to evaluate the efficacy of employing a teaching tool to help dyslexic students at the beginner-level to construct basic Malay syllables using lowercase alphabets. The researcher has observed 17 dyslexic children in total, comprising 3 students from the DAM center of Pulau Pinang Branch, 6 students from DAM centre Sg. Petani Branch, and 8 students from a government school that runs a dyslexic program. The dyslexic children worked in pairs using the Smart Board teaching aid, which enabled them to engage in multisensory learning activities. Accordingly, the teacher instructed the children on how to use the Smart Board teaching aid to build syllables in the Malay language.

Table 1

Findings from the observation of using the Smart Board teaching tool to Dyslexic Children

No table of figures entries found.	Recognize Letter		Mix And Match The Letters		Rewrite The Syllables		Spell The Syllables	
	Can	Can't	Can	Can't	Can	Can't	Can	Can't
Government School	8	0	8	0	8	0	8	0
Dyslexia Association Malaysia Pulau Pinang Branch	3	0	3	0	3	0	2	1
Dyslexia Association Malaysia Sg. Petani Branch	6	0	6	0	6	0	5	1

Total Participants	17	0	17	0	17	0	15	2
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The table presents the findings from the observation of using the Smart Board teaching tool to assist dyslexic children in building simple Malay syllables using lowercase letters. The table provides data on the recognition of letters, the ability to mix and match letters, rewriting syllables, and spelling the syllables among the participants.

In the 'Recognise Letter' column, the table indicates the number of participants who are able to correctly recognise the letters. The 'Mix and Match the Letters' column shows the number of participants who have successfully combine the letters to form syllables. The 'Rewrite the Syllables' column displays the number of participants who are able to rewrite the syllables correctly. Lastly, the 'Spell the Syllables' column indicates the number of participants who have accurately spelled the syllables.

The table also includes data for two different branches of the Dyslexia Association Malaysia, namely, the Pulau Pinang Branch and the Sg. Petani Branch, as well as participants from government schools. The 'Government School' row displays the results for the participants from the government schools, while the subsequent rows represent the results for the participants from the respective branches of the Dyslexia Association.

Based on the table, it can be observed that out of a total of 17 participants, all 17 were able to recognise the letters correctly. However, when it comes to activities such as mixing and matching the letters, rewriting the syllables, and spelling the syllables, some participants have encountered difficulties. Specifically, in the 'Spell the Syllables' column, two participants from the total sample and one participant from the Dyslexia Association Malaysia's Pulau Pinang Branch had challenges in accurately spelling the syllables.

The Smart Board teaching tool intervention allowed dyslexic children to repeatedly construct simple words without conscious effort. By utilising multi-sensory techniques, the children were able to identify vowel and consonant letters, where the latter was in different colours to capture their attention. The board game serves as a tool to facilitate the dyslexic children's learning in constructing simple Malay syllables through the use of various sensory methods; it employs a repetition technique to reinforce the learning process. These findings suggest that while the participants have generally demonstrated proficiency in recognising letters, they face some challenges in other tasks that are related to building simple Malay syllables. Therefore, further analysis and interpretation would be needed to understand the factors contributing to the difficulties that were encountered and to identify areas for improvement in the utilisation of the Smart Board teaching tool for dyslexic children.

RQ2. How might multi-sensory elements help the beginner-level dyslexic children in building basic Malay syllables?

The figures were attained through class observation sessions conducted at the Dyslexia Association of Malaysia (DAM) in Penang, the Dyslexia Association of Malaysia (DAM) in Sg. Petani, and SK Bukit Kiara in Kedah. The researcher was able to learn more about the children's viewpoints and the effectiveness of the instructions during the class observation. After the researcher had used video recording, note-taking, and a camera to record each activity during the observation process, the data were evaluated using Atlas.ti. In order to validate the multi-sensory components, the researcher has sought the opinions of three independent assessors who have more than five years of experience in the study's field. The expert panel examined the format, the suitability of the measurement's component arrangement, and the significance of the question's components before making recommendations.

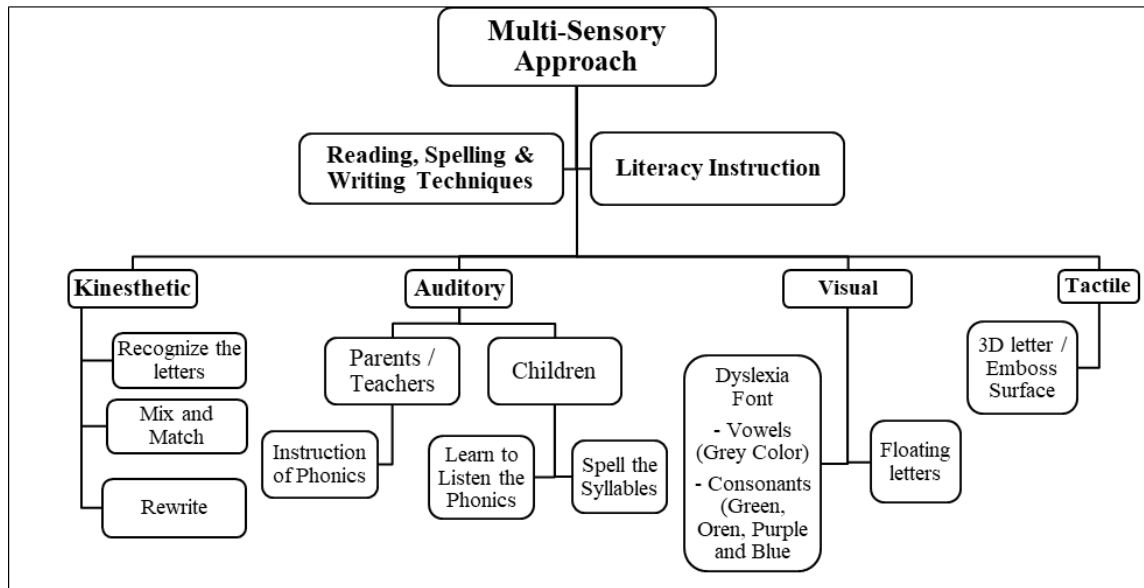


Figure 1 Elements that help dyslexic children to build Malay syllables through a multi-sensory approach

The findings presented in Figure 2 showcase the significant benefits and effectiveness of employing a multi-sensory approach to assist beginner-level dyslexic children in building basic Malay syllables. By incorporating kinesthetic, auditory, visual, and tactile experiences, this approach caters to the diverse learning needs of dyslexic children and enhances their understanding, retention, and application of the basic Malay syllables.

The kinesthetic aspect of the multi-sensory approach engages dyslexic children in various activities, such as recognising letters, mixing and matching them, and rewriting them. These hands-on activities encourage physical movement and active participation, hence, allowing the dyslexic children to internalise the concepts of basic Malay syllables more effectively. The first element, kinesthetic, requires the children to physically interact with the Smart Board by identifying the letters that are required to form a syllable and arranging them in the correct slot squares. They then rewrite the syllable on the board using a marker pen. By actively manipulating the letters, dyslexic children develop a kinesthetic connection to the syllables, leading to improved comprehension and retention.

Within the auditory component, parents and teachers play a crucial role in providing phonics instruction to the dyslexic children. By focusing on auditory recognition and differentiation of sounds that are associated with the letters, dyslexic children learn to listen carefully and identify the phonetic aspects of basic Malay syllables. This auditory training enhances their ability to identify and reproduce the correct sounds, contributing to their overall success in building the basic Malay syllables.

Visual elements within the multi-sensory approach include the utilisation of Dyslexia Font and floating letters. The Dyslexia Font incorporates different colours for vowels and consonants, enhancing visual discrimination and aiding the dyslexic children in distinguishing between the components of the basic Malay syllables. By providing a visual distinction, dyslexic children can more easily identify and differentiate the letters, contributing to their accuracy and fluency in constructing syllables. The use of floating letters, visually presented in a suspended manner,

further enhances visual focus and attention, drawing the dyslexic children's eyes to the letters and supporting their engagement with the syllables.

The tactile dimension of the multi-sensory approach involves the use of 3D letters or embossed surfaces. By physically feeling and exploring the shape and texture of the letters, the dyslexic children receive additional sensory input, reinforcing their letter recognition skills and deepening their understanding of the basic Malay syllables. This tactile experience provides a tangible connection to the syllables, promoting a more sensory-rich and immersive learning environment.

In conclusion, the comprehensive findings from the table highlight the tremendous value and efficacy of employing a multi-sensory approach to facilitate the beginner-level dyslexic children in building basic Malay syllables. By incorporating kinesthetic, auditory, visual, and tactile experiences, this comprehensive approach addresses the diverse learning needs of dyslexic children and fosters their understanding, retention, and application of basic Malay syllables. Implementing this multi-sensory approach in educational settings can significantly enhance the dyslexic children's overall proficiency and confidence in working with the basic Malay syllables, leading to improved literacy skills and academic success.

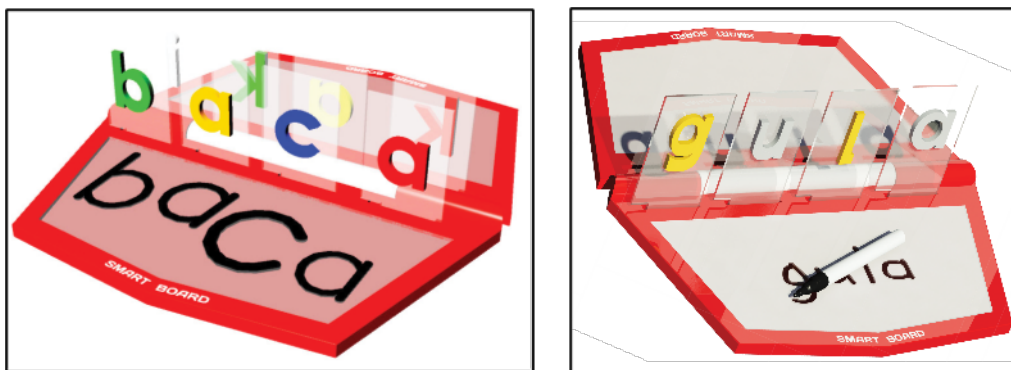


Figure 2 Smart Board teaching tool for Dyslexic Children

8. Conclusion

The lack of teaching aids that are specifically designed for dyslexic children who need to construct Malay syllables has stimulated researchers to produce a multi-sensory approach using the Smart Board. Notably, teachers have reported difficulty in finding effective teaching aids for dyslexic children, and most of the available products are too complicated and aimed at normal children. The researchers have found limited literature that focuses on teaching aids for intermediate-level dyslexic children, and there is a need for further research to develop literacy skills among dyslexic children at the intermediate and advanced levels. In particular, the Smart Board has been shown to be an effective teaching aid for dyslexic children, and it is hoped that it will be fully utilised in schools, therapy centres, and dyslexia centers. It is important to provide dyslexic children with appropriate and relevant teaching aids that are tailored to their needs. In order to develop cognitive domains, the study underlines the necessity for larger sample numbers, control training schemes, broad character reading assessments, and the involvement of more subject-matter specialists. Ultimately, this research contributes to the body of knowledge surrounding dyslexia intervention strategies, highlighting the importance of employing a multi-sensory approach in teaching basic Malay syllables to dyslexic children. By embracing the findings and implementing these evidence-based practices, we can enhance the educational

outcomes and overall well-being of dyslexic children, empowering them to reach their full potential in their language acquisition and literacy development

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Conflict of Interest

No conflict of interest associated with this publication.

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