

We are IntechOpen, the world's leading publisher of Open Access books Built by scientists, for scientists

6,100

Open access books available

149,000

International authors and editors

185M

Downloads

Our authors are among the

154

Countries delivered to

TOP 1%

most cited scientists

12.2%

Contributors from top 500 universities



WEB OF SCIENCE™

Selection of our books indexed in the Book Citation Index
in Web of Science™ Core Collection (BKCI)

Interested in publishing with us?
Contact book.department@intechopen.com

Numbers displayed above are based on latest data collected.
For more information visit www.intechopen.com



Upsurge of Online Shopping in Malaysia during COVID-19 Pandemic

Krishna Moorthy, Te Nian Ci, Aufa Amalina Kamarudin, Normala S. Govindarajo and Loh Chun Ting

Abstract

The aim of this study is to assess the factors, perceived usefulness (PU), perceived ease of use (PEOU), subjective norms (SN), perceived risk (PR) and situational influences (SI) that influence the consumers' behavioral intention to use online shopping during the Coronavirus time. This research has adopted the Technology Acceptance Model (TAM) as its theoretical base. This research is a quantitative research wherein data were collected through online questionnaire using convenience sampling method. A total of 203 valid samples were collected from Malaysian respondents from selected States. Then, single and multiple linear regression analysis were conducted to test the hypotheses. The results concluded that perceived usefulness, perceived ease of use and situational influences have significant influence on Malaysian consumers' behavioral intention to adopt online shopping during pandemic times. However, subjective norms and perceived risk have showed an insignificant relationship with consumers' behavioral intention. The findings have implications for Malaysian government and SME companies in Malaysia in promoting online business.

Keywords: online shopping, Covid-19, movement control order, technology acceptance model, Malaysia

1. Introduction

Covid-19 has accelerated the online shopping trends. With the outbreak of Covid-19, the global economy is facing a big challenge. According to World Health Organization (WHO) [1], 'Covid-19' namely the Coronavirus, is a newly discovered infectious disease on 31 December 2019 in China. This pandemic has brought a shock to every person, every country and even leads to disruptions in the world economy.

There is no exception for Malaysia as well. To prevent the virus spread from getting worst, the government implemented preventative measures, Movement Control Order (MCO) to urge everyone to stay at home [2]. During COVID-19 pandemic, Malaysian government has introduced the Movement Control Order (MCO) from 18 March 2020. This statutory order helped to slow down the transmission rate of the COVID-19 virus and increase social distancing among the public. This Movement

Control Order was extended many times and called in different names like Conditional Movement Control Order (CMCO), the Recovery Movement Control Order (RMCO), or the Enhanced Movement Control Order (EMCO) depending on the type of movement allowed for the people. These measures have restricted the non-essential stores (e.g. clothing shops, accessories shops etc.) from being opened and people are not allowed to cross states and even districts during the MCO period. Hence, to survive through this pandemic, business owners have to adopt a new norm: digitalisation of small and medium enterprises (SMEs) [3]. By this means, the transactions of online shopping up-surged significantly. One of the online shopping platforms in Malaysia, Lazada has experienced an increase of 80% on orders placed compared to the pre-pandemic, said by the CEO, Leo Chow [4]. The same situation goes to Shopee Malaysia as well, where Shopee recorded a boom, not only in volume and traffic but also the adoption of local brands (like Mamee, Hup Seng, etc.). This shows that many brands and sellers have started to digitalise to survive in this epidemic. These statistics have revealed the uptrend of online shopping in Malaysia during Covid-19 pandemic.

1.1 Problem statement

Covid-19 is a recent virus outbreak since the end of 2019. It has brought a big challenge and vast change to the global business, including Malaysia. Many issues have arisen due to the pandemic outbreak. The MCO imposition resulted in the ramp up of online purchases among consumers due to the closure of most of the physical stores [5]. According to EcommerceDB, Malaysia became the 38th largest online shopping market, with a revenue of US\$4 billion in 2020, placing ahead of Portugal. The online shopping market expansion in Malaysia is expected to continue over the years. Hence, identifying the determinants will be able to sustain the trend for long term.

Whilst there has been a wealth of existing research (before the Covid-19 outbreak) on online shopping trends and prospects, the research might be outdated since the sudden virus epidemic has impacted the economy significantly [6, 7]. Besides that, the previous studies only generally discussed the impact of the pandemic on online shopping [8, 9]. There is also a study related to the factors influencing online purchase of fashionable apparel [10]. However, the study only focused on a specific item of online purchase. Hence, there is a research gap on identifying the factors that contribute to the upsurge of online shopping in Malaysia during Covid-19 situation.

1.2 Research objectives

The general objective of the study is to determine the factors that contribute to the upsurge of online purchase in Malaysia during Covid-19 pandemic. The specific objectives are as shown below:

1. To identify the relationship between perceived usefulness and perceived ease of use of using online shopping during the Covid-19 pandemic.
2. To examine the relationship between perceived usefulness and behavioral intention of using online shopping during the Covid-19 pandemic.
3. To identify the relationship between perceived ease of use and behavioral intention of using online shopping during the Covid-19 pandemic.

4. To examine the relationship between subjective norms and behavioral intention of using online shopping during the Covid-19 pandemic.
5. To identify the relationship between perceived risk and behavioral intention of using online shopping during the Covid-19 pandemic.
6. To determine the relationship between situational influences and behavioral intention of using online shopping during the Covid-19 pandemic.

2. Literature review

Literature review helps to gain an understanding of the existing findings and research relevant to a particular area of study and topic and to present that information in the form of a summarized report. It also helps the researchers to identify the research gaps to formulate the research questions of the study accordingly.

2.1 Online shopping

According to Market Business News, one form of electronic commerce is online shopping wherein consumers are allowed to directly buy goods or services from a vendor through the internet, using a mobile app or web browser. Consumers find it very interesting to visit the website of the seller directly or by searching among various available sellers of the same product. They can see the product's availability and prices while searching. Consumers can use laptops, desktop computers, smartphones and tablet computers.

2.2 Technology Acceptance Model (TAM)

Technology Acceptance Model (TAM) was first introduced by Davis in 1986. Davis proposed the TAM to explain computer usage behavior [11]. This theory could explain the user adoption of technology in organization. Davis explained that TAM is to trace the impact of external factors on internal beliefs, attitudes and intentions. Hence, two key determinants, perceived usefulness and perceived ease of use have been introduced in this model as in **Figure 1**.

Though there are criticisms about its generality, many researchers adopted this theory in their studies [13, 14]. It is widely adopted to study topics related to IT adoption as its purpose is to explain user behavior in technology acceptance. Those studies include examining the use of Learning Management Systems (LMSs) in higher education [15], use of mobile banking apps [16], and use of Moodle [17].

Thus, in this study, TAM model is applied to study the factors that contribute to the upsurge of online shopping in Malaysia during Covid-19 pandemic. Perceived risk, subjective norm and situational influence are also integrated into this research in order to provide a comprehensive understanding of the online shopping in this pandemic time.

2.3 Relationship between perceived usefulness (PU) and perceived ease of use (PEOU)

As pointed by Venkatesh and Davis [18], PU is affected by PEOU. An individual's perceived usefulness on online shopping can be explained by his or her perception of

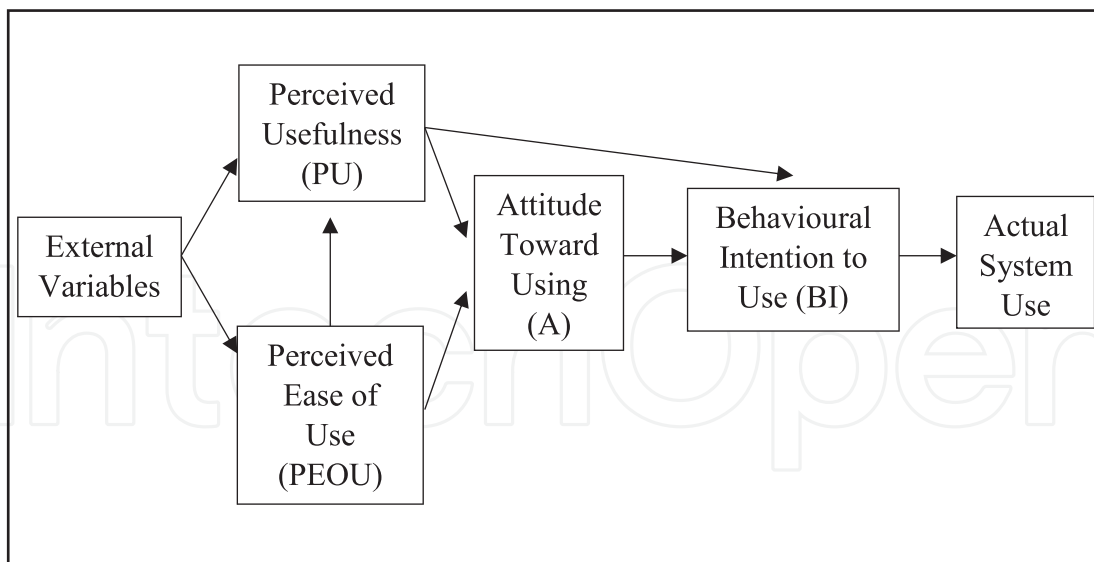


Figure 1.
Original technology acceptance model (TAM) [12].

the technology's simplicity of use. When a technology is easy to use, the consumers will then increase their perceived usefulness. Rattanaburi and Vongurai [19] explained that PEOU of the mobile shopping applications is significantly affected the PU among the Generation Y in Thailand. Additionally, this relationship has also been empirically investigated by several researchers and found to have positive relationship in various contexts [20, 21]. Hence, it is hypothesized that:

H1: There is a positive relationship between perceived usefulness and perceived ease of use of using online shopping during the Covid-19 pandemic.

2.4 Relationship between perceived usefulness (PU) and behavioral intention (BI)

As proposed in TAM, PU is defined as an individual believes that using a particular technology would result in his or her improvement in job performance [22]. It is an expectation that the particular technology used will benefit in achieving a valued outcome. Based on the study of Kucukusta et al. [23], the findings suggested that the functionality, efficiency and effectiveness of the Internet make online booking useful. This can imply the PU as the degree to which users believe that if they use the online booking system, they will able to enjoy the convenience of booking through Internet. Hence, the usefulness of online shopping is vital, especially in this pandemic. With the shut-down of brick-and-mortar stores, people have to shop online to purchase goods and services. Apart from this, online purchase can reduce the risk of infection by avoiding contact with people [24]. Numerous studies have found that PU and BI to shop online are related [25–27]. These explanations lead to the following hypothesis:

H2: There is a positive relationship between perceived usefulness and behavioral intention of using online shopping during the Covid-19 pandemic.

2.5 Relationship between perceived ease of use (PEOU) and behavioral intention (BI)

PEOU is defined as the degree to which an individual believes that using a particular technology would be free from effort, as stated in the TAM [22]. If a technology is

easy to use, then the barriers can be eliminated, and individuals will be more willing to adopt that particular technology. A study indicated that the poor design in online shopping sites can lose the buyers' focus on shopping. This is because it reduced the perception of buyers on the ease of use of online shopping [28]. In addition, the ease of navigating through online sites, the ease of placing orders, the ease of conducting transactions, and other ease of use that allow the consumers to purchase online, can increase the interest in online shopping among the users [29]. This can be related to the level of easiness that a user feels when shopping online through online shopping sites or platforms. Individual tends to use online shopping if it is easy to learn and use. Thus, the lower the complexity to use online shopping, the higher the intention of an individual to use online shopping. In the previous studies, there are a surprising number of researchers that showed a positive relationship between these two variables [25, 30, 31]. Thus, the following hypothesis is proposed:

H3: There is a positive relationship between perceived ease of use and behavioral intention of using online shopping during the Covid-19 pandemic.

2.6 Relationship between subjective norms (SN) and behavioral intention (BI)

Based on the study of Fishbein and Ajzen [32], SN is defined as an individual's perception that people who are important to him or her think he/she should or should not engage in certain behavior. In 1985, Ajzen further defined SN as a perception of belief that an individual believes that a specific individuals or groups think he or she should or should not perform the behavior. These individuals or groups can be the family, friends, supervisors or even the society at large. When there is a person or a group of people kept on introducing and praising a particular online shopping platform, the individuals will be influenced and get interested to the online shopping platform too. Hence, SN can influence the BI of an individual towards online shopping. Akar's [33] research paper acknowledged the positive relationship between SN and BI. The online questionnaire was carried out in Turkey and concluded that SN has significant influence on the consumer's BI towards online purchase during pandemic. This relationship is also recognized by the study of Islam et al. [34], in which the data was collected in Bangladesh. The significant relationship between SN and BI of using online shopping has been found by many prior literatures [24, 35, 36]. These resulted in the following hypothesis being proposed:

H4: There is a positive relationship between subjective norms and behavioral intention of using online shopping during the Covid-19 pandemic.

2.7 Relationship between perceived risks (PR) and behavioral intention (BI)

The concept of PR was introduced by Bauer in 1960. He defined PR as 'perceived consequences of an outcome in case of a wrong choice; and subjective probability to make a mistake'. Pham, Nguyen, Do, Tang and Hoai [37] adopted the concepts of PR in their study by separating it into several variables, which include financial risks, product risks, social risks, time risks, distribution risks, and information risks. The study of Iriani and Andjarwati [27] also studied PR by dividing it into several indicators, such as financial risk, performance risk and security risk. Therefore, in this study, the perceived risk will be studied in terms of health risk. This is due to the individual perception of their health hazards that they might be exposed to the Covid-19 virus when shopping in malls and stores physically [26]. Pham et al. [37] has conducted a study related to Vietnamese consumer switching behavior towards online

shopping during the pandemic. This study has indicated that PR in terms of products risks, time risks and social risks has significant effect on influencing the Vietnamese customers shopping online during the pandemic. Aside from this, several previous literatures also concluded on this positive relationship [31, 38]. Therefore, this hypothesis is made in this research:

H5: There is a positive relationship between perceived risk and behavioral intention of using online shopping during the Covid-19 pandemic.

2.8 Relationship between situational influences (SI) and behavioral intention (BI)

As defined by Tanner and Raymond [39], SI refers to the temporary conditions that affect how the consumers behave. It can be a condition where they actually buy the products, buy additional products or not buying anything at all. They also explained that the influences can be resulted from time factors, physical factors, social factors, the reason for the consumer's purchase and the consumer's mood. With all these factors, it can influence people's buying behavior. Besides that, situational influences are significant in shaping and reinforcing the online shopping motivations. Hence, in this study, the SI will conceptualize the impact of Covid-19 pandemic. The study of Hashem [40] revealed that the Covid-19 pandemic had a significant influence over the Jordon customer behavior towards e-shopping. Several prior studies also support the association of SI and BI in the context of online groceries shopping [41] and online book shopping [42]. In this study, Covid-19 pandemic is an essential situational influence that can affect the online shopping adopting intention among consumers. Based on these previous studies, the following hypothesis is developed:

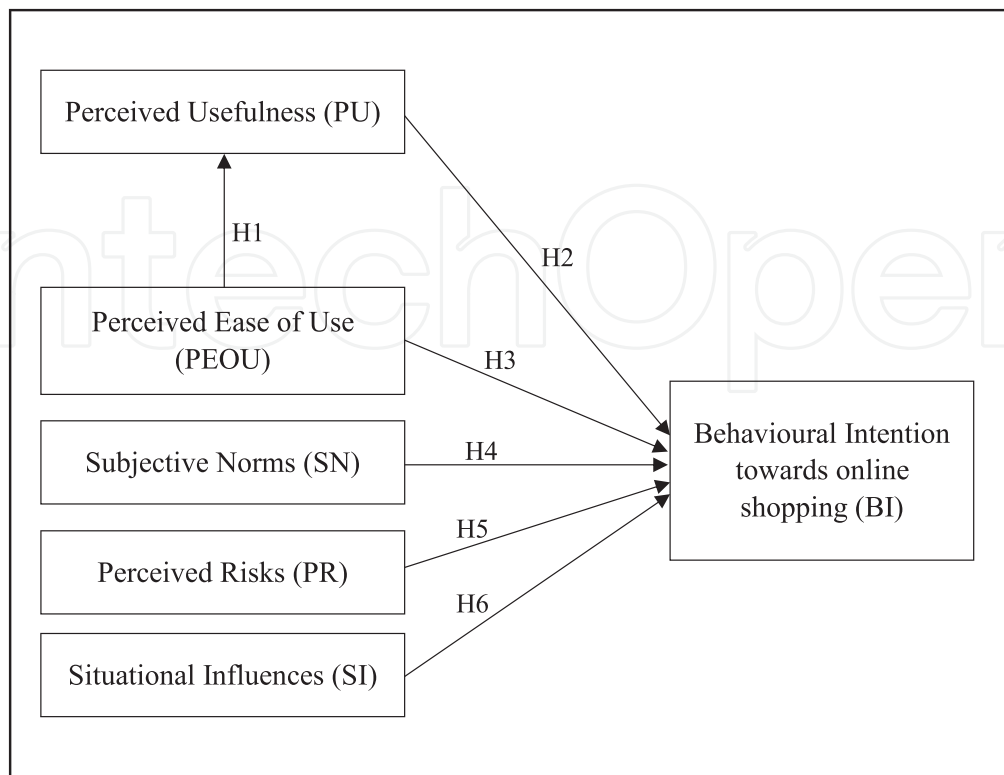


Figure 2.
Proposed research framework.

H6: There is a positive relationship between situational influences and behavioral intention of using online shopping during the Covid-19 pandemic.

2.9 Research framework

Figure 2 shows the research framework of this study. The independent variables include perceived usefulness, perceived ease of use, subjective norms, perceived risks and situational influences, whereas behavioral intention of using online shopping is the dependent variable.

3. Research methodology

In this research, quantitative method is used to deal with the statistical data. It collects the data based on numbers and mathematical calculations. This method relies on collection and analysis of numerical data in order to describe, explain or predict the variables. This type of study basically answers the research questions through the test of hypothesis, in order to determine the relationship between two variables (independent and dependent) [43].

3.1 Data collection

Primary data was collected through online self-administered questionnaire. This quantitative method is able to test the hypothesis developed and gather the data about the determinants contributing to upsurge of online shopping in Malaysia during Covid-19 pandemic. The questionnaire study was conducted within Malaysia, via online distribution and collection to test the relationship between PU, PEOU, SN, PR, SI and BI. The quantitative data analysis in this study is aided by using the Statistical Package for Social Science (SPSS) software.

3.2 Target population

The target population in this research is individuals of 18 years and above and residing in Malaysia, who have been shopping online during the pandemic. This is because they are the main contributors to the online shopping growth. According to International Trade Administration (ITA) [44], Malaysia has approximately 16.53 million online shoppers in 2019. These statistics reflected 50% of the Malaysia population and 62% of mobile users who purchase online using their devices.

3.3 Sampling frame and sampling location

Due to the absence of online shopping users' detail information, it is impossible to identify all the elements in the population. Hence, the sampling frame is not applicable in this study.

The percentage of Malaysian online shopping users by State are shown in **Table 1**. From the table, it can be seen that Wilayah Persekutuan Putrajaya, Wilayah Persekutuan Labuan, Perlis, Selangor, Wilayah Persekutuan Kuala Lumpur, Terengganu, Melaka, Pulau Pinang, Negeri Sembilan and Johor are the top 10 highest among the 16 States. Hence, they are chosen as the sampling location in this research. It is deemed sufficient to represent the whole population.

States	Percentage (%)
W.P. Putrajaya	70.5
W.P. Labuan	60.5
Perlis	49.4
Selangor	40.0
W.P. Kuala Lumpur	38.0
Terengganu	35.5
Melaka	32.5
Pulau Pinang	32.5
Negeri Sembilan	27.5
Johor	26.5
Kedah	25.0
Sarawak	24.0
Pahang	24.0
Sabah	22.5
Perak	22.0
Kelantan	22.0

Table 1. *Percentage of online shopping consumers by state. (Malaysian Communications and Multimedia Commission, 2018).*

3.4 Sampling technique

Non-probability sampling was used in this study. This is due to the unavailability of sampling frame. The population size is extensive and difficult to examine, so non-probability sampling is the most suitable method for this research. Among the methods available, convenience sampling is the most suitable method to be used. This is because it is less costly, simple to implement and efficient. Convenience sampling is a sampling method whereby a sample is taken from a group of people who are easy to be contacted or reached by the researcher [45]. This sampling method was consistent with the method used in many previous literatures related to online shopping adoption [25, 46].

3.5 Sampling size

Based on the study of [47], the item-to-response ratios range was recommended to be in the range from 1:4 to 1:10. In this research, there are 28 items to be measured in the online questionnaire. Hence, a sample size of 112 to 280 is deemed to be sufficient for this study, based on the recommended ratios range. In this study, a total of 203 questionnaires have been collected and all of them are usable for the study. As 203 is between the recommended range of samples, it is considered adequate for the purpose of this research.

3.6 Research instrument

To collect primary data for this research, a self-administered questionnaire has been employed as the research instrument. The reason for choosing this survey

Variables	Cronbach's alpha	Number of items
PU	0.829	5
PEOU	0.876	5
SN	0.755	3
PR	0.778	5
SI	0.724	5
BI	0.805	5

Table 2.
Reliability statistics (pilot test).

method is due to the limited time available and there is no cost requirement. The questionnaire was created by Google Form and the survey link are shared to various social media (e.g. Facebook, Instagram, etc.). Data were collected for one-week period, from 15 May 2021 to 21 May 2021. During this time period, Malaysia was under the Movement Control Order 3.0 due to covid-19. The questionnaire is divided into three sections: Demographic information of respondents, questions related to the five independent variables (PU, PEOU, SN, PR & SI) and questions related to the dependent variable (BI).

3.7 Pilot test

In spite of the fact that the items in the questionnaire are adapted from earlier studies that have been tested on their reliability and validity, this questionnaire still needed to have a pilot study. As stated by Treece and Treece [48], the suggested sample size for a pilot test is 10% of the sample size in this study. Hence, in this study, the pilot test was carried out with 35 respondents. Based on the data collected in the pilot test, all the questions in the variables are acceptable as the Cronbach's Alpha value are above 0.7 [49], as shown in **Table 2**.

4. Research results

4.1 Demographics

There are 203 respondents in total, and no missing data, thus all are usable. All (100%) of the respondents are Malaysian, aligning to the target respondents of this study. Among the respondents, 54 are from Selangor (26.6%), 49 from Negeri Sembilan (24.1%), 25 from Johor (12.3%), 22 from Kuala Lumpur (10.8%), 13 from Putrajaya (6.4%), 11 from Penang (5.4%), 10 from Malacca (4.9%), 9 from Terengganu (4.4%), 6 from Perlis (3.0%) and 4 from Labuan (2.0%). Out of 203 respondents, approximately two-third of them are female and the remaining are male. The age group data showed that 104 respondents are from age group of 18–25 years (51.2%), followed by 46 of them from age group of 26–35 years (22.7%), 22 under the 36–45 years' age group (10.8%), 19 from 46 to 55 years' age group (9.4%) and remaining 12 above 55 years old (5.9%). 98 out of 203 of the respondents (48%) are students. These results are not surprising, considering that the majority of the

respondents are from 18 to 25 years' age group. Besides students, there are 61 employees (30%), 21 self-employed (10.3%), 17 freelancers (8.4%), 3 housewives (1.5%) and the remaining 3 categorized as Others (1.5%). The respondents' occupation for the 'Other' category is the pensioner etc. Among the respondents, 102 (50.3%) of them shop 1–2 times a month through online platform before the Covid-19 pandemic. It is followed by 62 (30.5%) respondents who shop 3–5 times a month before the pandemic, 29 (14.3%) shop 6–10 times a month and only 10 (4.9%) of them shop more than 10 times in a month. The results of the online purchase frequency were found to be changed during the Covid-19 pandemic. Before the pandemic, the highest percentage is 1–2 times a month. However, during the pandemic, the highest percentage is 3–5 times a month. The 1–2 times a month category then drop to become the lowest percentage, at 16.7%. The 'Above 10 times a month' category has increased to 18.7%.

4.2 Reliability analysis for full data

The reliability analysis result can be seen in **Table 3**. All the factors are reliable and consistent. Broadly speaking, all the variables are above 0.8 alpha, which implies good reliability, except for SI variable with 0.786 alpha. However, this alpha value is still acceptable, as 0.7 alpha implies as acceptable reliability [49].

4.3 Normality analysis

The result of normality test shows that all the items are normally distributed. This is due to the skewness value of this study comes within the range of ± 3 and the kurtosis value of this study falls between the range of ± 10 [50].

4.4 Correlation coefficient analysis

Table 4 shows that the correlation coefficient values in this study are between +0.6 and +0.8. Hence, it can be categorized between the moderately positive and strongly positive [51]. Aside from this, the correlations are also below 0.9, so there is absence of multicollinearity problem [52].

4.5 Inferential analysis

In this study, the regression technique was used to test the relationship between the dependent and independent variables. The analysis is divided into two parts. A

Variables	Cronbach's alpha	Number of items
PU	0.807	5
PEOU	0.845	5
SN	0.814	3
PR	0.800	5
SI	0.786	5
BI	0.844	5

Table 3.
Reliability statistics (full data).

	PU	PEOU	SN	PR	SI	BI
PU	1					
PEOU	.734**	1				
	.000					
SN	.719**	.629**	1			
	.000	.000				
PR	.699**	.660**	.644**	1		
	.000	.000	.000			
SI	.722**	.652**	.702**	.740**	1	
	.000	.000	.000	.000		
BI	.732**	.699**	.636**	.644**	.707**	1
	.000	.000	.000	.000	.000	

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

Table 4.
 Pearson's correlation coefficient analysis.

simple linear regression (SLR) is carried out to examine the relationship between the PU and PEOU, where PU is considered to be the dependent variable in this relationship. Then, multiple linear regression (MLR) is applied to identify the relationship between the independent variables (PU, PEOU, SN, PR and SI) and the dependent variable (BI).

4.6 Multiple linear regression (MLR)

As shown in **Table 5**, the R^2 value is 0.636, implying that the five variables, PU, PEOU, SN, PR and SI, can explain 63.6% of the variance in BI, while the remaining 36.4% is explained by additional factors not included in this study.

As depicted in **Table 6**, the F-value is 68.947 and p-value is 0.000 at 5% significance level. This means that it is significant as the p-value is lower than 0.05. It demonstrates that the dependent variable (BI) has a substantial relationship with the five independent variables (PU, PEOU, SN, PR and SI).

From the **Table 7**, it can be seen that at 5% significance level, PEOU (p-value = 0.000), PE (p-value = 0.000) and SI (p-value = 0.001) have significant and positive effects on the dependent variables (BI). This is due to their p-value are less than 0.05. However, SN (p-value = 0.376) and PR (p-value = 0.468) are found insignificantly

Model summary ^b				
Model	R	R square	Adjusted R square	Std. error of the estimate
1	.798 ^a	.636	.627	.27962

^aPredictors: (constant), SI, PEOU, SN, PR, PU.

^bDependent variable: BI.

Table 5.
 Model summary for all variables.

ANOVA ^a						
Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	26.955	5	5.391	68.947	.000 ^b
	Residual	15.403	197	.078		
	Total	42.358	202			

^aDependent variable: BI.

^bPredictors: (constant), SI, PEOU, SN, PR, PU.

^c $\alpha = 0.05$.

Table 6.
Analysis of variance (ANOVA) for all variables.

Coefficients ^a						
Model		Unstandardized coefficients		Standardized coefficients	t	Sig.
		B	Std. error	Beta		
1	(Constant)	.507	.217		2.337	.020
	PU	.284	.078	.280	3.623	.000
	PEOU	.244	.065	.252	3.734	.000
	SN	.049	.055	.060	.888	.376
	PR	.051	.071	.051	.727	.468
	SI	.257	.073	.261	3.516	.001

^aDependent variable: BI.

^b $\alpha = 0.05$.

Table 7.
Multiple linear regression coefficient.

associated with BI as their p-values are higher than 0.05. As a result, H2, H3 and H6 are statistically supported, but H4 and H5 are not supported.

Thus, the MLR equation is as follows:

$$BI = 0.507 + 0.284 PU + 0.244 PEOU + 0.049 SN + 0.051 PR + 0.257 SI$$

4.7 Simple linear regression (SLR)

The R² value of 0.539, depicts that PEOU can explain 53.9% of the variance in PU, whereas the remaining 46.1% is explained by the other variables not examined in this study, as presented in **Table 8**.

The **Table 9** shows the F-value (1, 201) = 235.024, and p-value = 0.000 at 5% significance level, which indicates that the PEOU plays a significant role in shaping PU. These clearly shows the positive effect of the PEOU.

Table 10 shows that PEOU (p-value = 0.000) has a significant and favorable influence on PU as the p-value is less than 0.05. Hence, H1 is supported.

To sum up, the SLR equation can be written as follow:

$$PU = 1.324 + 0.702 PEOU$$

Model summary ^b				
Model	R	R square	Adjusted R square	Std. error of the estimate
1	.734 ^a	.539	.537	.30723

^aPredictors: (Constant), PEOU.

^bDependent Variable: PU.

Table 8.
 Model summary for PEOU and PU.

ANOVA ^a						
Model		Sum of Squares	df	Mean square	F	Sig.
1	Regression	22.183	1	22.183	235.024	.000 ^b
	Residual	18.972	201	.094		
	Total	41.155	202			

^aDependent variable: PU.

^bPredictors: (constant), PEOU.

^c $\alpha = 0.05$.

Table 9.
 Analysis of variance (ANOVA) for PEOU and PU.

Coefficients ^a						
Model		Unstandardized coefficients		Standardized coefficients	t	Sig.
		B	Std. error	Beta		
1	(Constant)	1.324	.204		6.480	.000
	PEOU	.702	.046	.734	15.330	.000

^aDependent variable: PU.

$\alpha = 0.05$.

Table 10.
 Single linear regression coefficient.

A summary of the hypothesis testing has been developed in **Table 11**. H1, H2, H3 and H6 are supported, whereas H4 and H5 are not supported.

5. Discussion

The findings suggest that consumers believe PEOU to be a key element in determining the PU of online shopping ($p < 0.05$). This result was confirmed by the prior studies which done by [21], [20], [19]. When the online shopping is simple to be accessed by users, they can attain their shopping objectives easily, and thus, increase the perceived usefulness on online shopping among them. Users may not consider e-shopping to be useful if they have to cope with the difficulties in using online shopping. This is because if they are busy handling the difficulties, they could not see

Hypothesis	p-value	Result
H1: There is a positive relationship between PU and PEOU of using online shopping during the Covid-19 pandemic.	0.000	Supported
H2: There is a positive relationship between PU and BI of using online shopping during the Covid-19 pandemic.	0.000	Supported
H3: There is a positive relationship between PEOU and BI of using online shopping during the Covid-19 pandemic.	0.000	Supported
H4: There is a positive relationship between SN and BI of using online shopping during the Covid-19 pandemic.	0.376	Not supported
H5: There is a positive relationship between PR and BI of using online shopping during the Covid-19 pandemic.	0.468	Not supported
H6: There is a positive relationship between SI and BI of using online shopping during the Covid-19 pandemic.	0.001	Supported

Table 11.
Summary for hypotheses testing.

the benefits of using it. To sum up, there is a positive relationship between PU and PEOU in online shopping during pandemic.

The result ($p < 0.05$) implied that PU significantly influence BI. Consumers' behavioral intention to utilize online shopping during a pandemic is profoundly influenced by PU. This finding is in line with the findings of a number of prior studies [25, 26]. By comparing the online purchase to traditional purchase from physical stores, online shopping enables users to reach the items faster and also more choices are available compared to physical stores [27]. The consumers are able to shop in their homes while maintaining social distancing during this pandemic. Hence, the perceived usefulness is established. On top of that, consumers have little opportunities to purchase items other than necessities, like clothing, stationery, etc. during the lockdown [53]. So, online shopping can be a good substitute for physical stores. Consequently, PU is a factor for consumers' BI on using online shopping during pandemic.

PEOU is also found to have positive impact on BI of using online shopping during Covid-19 pandemic ($p < 0.05$). This significance and positive relationship were evidenced by Verweijimeren [41]; Yadav et al. [30]; and Lisdayanti et al. [31] in their study. Youssef et al. [25] explained the ease of use was contributed by the languages available on the platform, the design of the platform and guidance video provided. In Malaysia, Shopee application, one of the top-ranking online shopping in Malaysia, also provided several languages in the application (i.e., Malay, English and Mandarin) and guidance video to use Shopee application was provided on YouTube too. Thus, users may consider online shopping was easy to use (such as adequate search support provided, provide relevant recommendations, etc.). When users found that online shopping was easy to navigate, they may not get frustrated when using online shopping. Instead, users may find it helpful to achieve their purchase objectives easily and thus, developed the intention to purchase online.

The findings ($p > 0.05$) indicate that SN is not considered a factor that influences the consumers' BI of using online shopping. This result was supported by several prior literatures [26, 53]. The study of Koch et al. [53] showed internal SN has no influence on customers' BI to adopt online shopping, whereas external SN have significant influence. The study defined internal SN as internal sources of social influence, such as family and

friends, while external SN is described as external sources of social influence, such as mass media. The insignificant relationship is ascribed to the large Generation Z respondents in this study. Generation Z is people that born between 1997 and 2015, who born into new technology. They rely heavily on digital media. In this study, the questionnaire items design for subjective norm was related to internal SN. However, Generation Z is more easily influenced by mass media reports or expert opinions, especially in this epidemic. This is the reason why findings indicated the insignificant relationship between SN and BI in this study, as most of the respondents are from Generation Z. However, there are also some literatures that are not supporting this result [33, 34, 36].

The results ($p > 0.05$) also show the PR is not a factor that affects the consumers' BI in using online shopping during pandemic. Several studies also demonstrated the same results as this study [27, 26]. Gao et al. [53] found that the insignificant relationship because people may still be concerned about the potential risk of being infected when they purchased online, even though online shopping is the most suitable and safer alternative method for shopping in brick-and-mortar stores. They might worry that people who packaged and delivered their parcels was infected by virus and in this way, PR is not a factor to influence the consumers' BI to adopt online shopping during Covid-19. Therefore, the same result in this study would be due to the same reason as provided by Gao et al., where Malaysian online consumers may find the risk of Covid-19 virus being transmitted through parcel. However, this insignificant relationship result was contrasted by some prior research [37, 31, 38].

The results ($p < 0.05$) depict that SI is considered a determinant factor that influences consumers' BI of using online shopping. Many previous studies also recognized that SI plays an important role in the behavioral intention of using online shopping during Covid-19 pandemic [40, 41, 42]. As stated in Akar [33], Covid-19 has brought a big change across the world and resulted in instabilities in the society. These pandemic concerns can affect the consumers' online shopping intentions. The study stated that Covid-19 had an influence over the customer behavior in terms of frequency, necessity, payment method, price and products availability. During the MCO period in Malaysia, most of the retail stores were forced to stop operations. Thus, the alternative method available for consumers is to shop through online shopping. This has led consumers to switch to e-shopping, and thus, built the BI of using online shopping during Covid-19 crisis.

5.1 Theoretical implications

This study's main theoretical implication is that it adds value to the literature of technology dissemination, to be more specific, the online shopping research. This research gives a comprehensive overview of Malaysian consumers' perception towards online shopping throughout the pandemic. This study focused on studying the determinant factors of consumers' behavioral intention to use online shopping during the Covid-19 times. The researchers adopted the TAM model and added some variables, such as subjective norms, perceived risk and situational influences, aimed to fit the current situation. This can provide a deeper understanding about the online shopping in Malaysia and it is useful for future research.

5.2 Practical implications

Covid-19 hits Malaysia economy heavily, and online shopping is the only way to substitute the physical retail stores. Hence, this study is able to bring implication for

Malaysian government agencies to further plan to improve the online shopping usage among the citizens. According to this study, consumers' BI to embrace online shopping during a pandemic is influenced by PU, PEOU and SI. From the insight of this finding, Malaysia government can provide supports to those SME companies and online shopping companies to enhance their online shopping platforms. The government can provide IT training especially to those SME owners who run business in traditional business model, who are not familiar with online shopping technology prior to this pandemic. The pandemic has also significantly affected the day-to-day business operations. Those sellers are still struggling with their businesses to minimize their losses during this difficult time. Accordingly, this study could benefit SME sellers to survive through this pandemic and to avoid suffering losses by adopting online shopping business model.

5.3 Limitations

Firstly, this is a cross-sectional study. The study result is only limited to a single point of time. However, the Covid-19 impact is still continuing and its influence on consumers is still ongoing and changing, so a longitudinal study is able to capture more accurate result. Secondly, due to time and cost constraint and also the pandemic, this study's data collecting technique was decided to be an online questionnaire. Sometimes, the participants may not read and answer the questions carefully. This might result in inaccurate data collection. In addition to this, the quantitative method indeed provides wide scope of data collection but less detailed, compared to qualitative method which provides narrower but more thorough responds. Apart from these, the sampling location for this study is limited to Malaysia, and more specifically only 10 States involved due to time constraint. Hence, this limits the generalizability of this study to other countries. Lastly, the convenience sampling technique was applied in this study on account of the limited time available. Whilst convenience sampling was easy to apply and participants are readily available, this sampling technique is lack of generalizability to the population as a whole and could lead to a biased result.

6. Conclusion and recommendations

This study presented a comprehensive understanding about the determinants that contributed to the up-surged online shopping in Malaysia during the pandemic. The study integrated TAM theory by using PU, PEOU, SN, PR and SI variables to provide useful insights on the consumers' BI on using online shopping. The results concluded that perceived usefulness, perceived ease of use and situational influences have significant influence on Malaysian consumers' behavioral intention to adopt online shopping during pandemic times. However, subjective norms and perceived risk have showed an insignificant relationship with consumers' behavioral intention. This research adopted the TAM model and added some variables, such as subjective norms, perceived risk and situational influences, aimed to fit the current situation. This can provide a deeper understanding about the online shopping in Malaysia and it is useful for future research. Furthermore, this study is useful for Malaysian governments and SME owners to gain an insight into the online shopping adoption determinants. Limitations and recommendations have been included in order to enhance future studies. Regarding recommendations, the first recommendation would be to carry out the longitudinal perspective for future research. This can analyze the changes in

respondents in the long term. Although investigating a single point in a decision event is allowed, the antecedent factors that lead to that tipping point is also important. Future research can also focus on changes in before and after the event. Future researchers can also consider to adopt multimethod quantitative if there is sufficient time and budget. By applying two or more quantitative methods, the drawbacks can be offset by each other's benefits. The next recommendation is related to the sampling location. Future research can conduct in the whole country, Malaysia. This can cover all the states in Malaysia, as citizen in different states may have different viewpoints and perception due to the different development of online shopping and logistics among the states. To address the limitation on convenience sampling technique, future researchers can gather large samples in order to strengthen the generalizations.

Author details


Krishna Moorthy^{1*}, Te Nian Ci¹, Aufa Amalina Kamarudin¹, Normala S. Govindarajo¹ and Loh Chun T'ing²

1 School of Economics and Management, Xiamen University Malaysia, Sepang, Selangor, Malaysia

2 Faculty of Business and Finance, Universiti Tunku Abdul Rahman, Perak, Malaysia

*Address all correspondence to: krishna.manicka@xmu.edu.my

IntechOpen

© 2022 The Author(s). Licensee IntechOpen. This chapter is distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/3.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. 

References

- [1] World Health Organization. Coronavirus. 2020. Available from: https://www.who.int/health-topics/coronavirus#tab=tab_1
- [2] Shah AUM, Safri SNA, Thevadas R, Noordin NK, Rahman AA, Sekawi Z, et al. COVID-19 outbreak in Malaysia: Actions taken by the Malaysian government. *International Journal of Infectious Diseases*. 2020;**97**:108-116. DOI: 10.1016/j.ijid.2020.05.093. Epub 2020 Jun 2. PMID: 32497808; PMCID: PMC7264933
- [3] Tong A, Gong R. The Impact of COVID-19 on SME Digitalisation in Malaysia. 2020. The Impact of COVID-19 on SME Digitalisation in Malaysia. Available from: <https://blogs.lse.ac.uk/seac/2020/10/20/the-impact-of-covid-19-on-sme-digitalisation-in-malaysia/>
- [4] Nathan L. The Boom of Online Shopping in Covid-19 Era. 2021. Available from: <https://themalaysianreserve.com/2021/01/01/the-boom-of-online-shopping-in-covid-19-era/>
- [5] Bhatti A, Akram H, Basit HM, Khan AU, Naqvi SM, Bilal M. Online shopping trends during COVID-19 pandemic. *International Journal of Future Generation Communication and Networking*. 2020;**13**(2):1449-1452. Available from: <https://lovackey.eu/ws/media-library/8291b8bb61d0458d9bec753432dc4842/qualitativepaper.pdf>
- [6] Goyal S, Sergi BS, Esposito M. Literature review of emerging trends and future directions of online shopping in global business landscape. *World Review of Entrepreneurship, Management and Sustainable Development*. 2018;**14**(3):312-332. DOI: 10.1504/wremsd.2019.098454t
- [7] Kiu CC, Lee CS. Online shopping market trends: A case study in leveraging Web 2.0 technologies to gain and improve competitive advantage. *International Journal of Business Information Systems*. 2017;**25**(3): 373-392. DOI: 10.1504/IJBIS.2017.10005086
- [8] Hasanat MW, Hoque A, Shikha FA, Anwar M, Hamid AB, Huam H. The impact of coronavirus (Covid-19) on E-business in Malaysia. *Asian Journal of Multidisciplinary Studies*. 2020;**3**(1): 85-90. Available from: https://www.researchgate.net/publication/340445932_The_Impact_of_Coronavirus_Covid-19_on_E-Business_in_Malaysia
- [9] Lee N, Cheong J, Mansur K, Mahmud R. The impact of coronavirus (Covid-19) on E-business in Malaysia: A review. In: 1St International Conference on Entrepreneurship and Small Business (ICES2020). 2020;**3**(1):212-219
- [10] Harizan SHM, Shukor MHA. Factors influencing the intention to buy fashionable apparel via online platforms: An empirical evidence from Malaysia. *International Journal of Asian Social Science*. 2021;**11**(2):98-113. DOI: 10.18488/journal.1.2021.112.98.113
- [11] Davis FD. A technology acceptance model for empirically testing new end-user information systems: Theory and results [doctoral dissertation]. US: Massachusetts Institute of Technology; 1986. Available from: <https://dspace.mit.edu/bitstream/handle/1721.1/15192/14927137-MIT.pdf>
- [12] Davis FD, Bagozzi RP, Warshaw PR. User acceptance of computer technology: A comparison of two theoretical models. *Management*

Science. 1989;**35**(8):982-1003.
DOI: 10.1287/mnsc.35.8.982

2000;**46**(2):186-204. DOI: 10.1287/
mnsc.46.2.186.11926

[13] Mathieson K. Predicting user intentions: Comparing the technology acceptance model with the theory of planned behavior. *Information Systems Research*. 1991;**2**(3):173-191.
DOI: 10.1287/isre.2.3.173

[19] Rattanaburi K, Vongurai R. Factors influencing actual usage of mobile shopping applications: Generation Y in Thailand. *Journal of Asian Finance, Economics, and Business*. 2021;**8**(1): 901-913. DOI: 10.13106/jafeb.2021.vol8.no1.901

[14] Taylor S, Todd PA. Understanding information technology usage: A test of competing models. *Information Systems Research*. 1995;**6**(2):144-176.
DOI: 10.1287/isre.6.2.144

[20] Denaputri A, Usman O. Customers' Trust and Technology Acceptance Model on Online Purchase Intention. 2020. Available at SSRN: <https://ssrn.com/abstract=3647193>. DOI: 10.2139/ssrn.3647193

[15] Fathema N, Shannon D, Ross M. Expanding the technology acceptance model (TAM) to examine faculty use of learning management systems (LMSs) in higher education institutions. *Journal of Online Learning & Teaching*. 2015;**11**(2): 210-232. Available from: https://www.researchgate.net/publication/281842180_Expanding_The_Technology_Acceptance_Model_TAM_to_Examine_Faculty_Use_of_Learning_Management_Systems_LMSs_In_Higher_Education_Institutions

[21] Ananda NA, Fietroh MN, Mikhratunnisa M, Rizqi RM. Theory acceptance model and purchase intention in online shopping. *Advances in Social Science, Education and Humanities Research*. 2020;**465**:165-169.
DOI: 10.2991/assehr.k.200827.042

[16] Leiva F, Climent S, Cabanillas F. Determinants of intention to use the mobile banking apps: An extension of the classic TAM model. *Spanish Journal of Marketing-ESIC*. 2017;**21**(1):25-38.
DOI: 10.1016/j.sjme.2016.12.001

[22] Davis FD. Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*. 1989;**13**:319-340.
DOI: 10.2307/249008

[17] Essel DD, Wilson OA. Factors affecting university students' use of Moodle: An empirical study based on TAM. *International Journal of Information and Communication Technology Education (IJICTE)*. 2017;**13**(1):14-26. DOI: 10.4018/IJICTE.2017010102

[23] Kucukusta D, Law R, Besbes A, Legohérel P. Re-examining perceived usefulness and ease of use in online booking. *International Journal of Contemporary Hospitality Management*. 2015;**27**(2):185-198. DOI: 10.1108/IJCHM-09-2013-0413

[18] Venkatesh V, Davis FD. A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*.

[24] Koch J, Frommeyer B, Schewe G. Online shopping motives during the COVID-19 pandemic—Lessons from the crisis. *Sustainability*. 2020;**12**(24):10247.
DOI: 10.3390/su122410247

[25] Youssef AA, Jaafari M, Belhacen L. Factors Affecting the Online Purchase Intention during COVID-19 Crisis: The

Case of Morocco. SSRN; 2020. DOI: 10.2139/ssrn.3734389

[26] Salem, M. A., & Nor, K. M. (2020). The effect of COVID-19 on consumer behaviour In Saudi Arabia: Switching from brick and mortar stores to online shopping. *International Journal of Scientific & Technology Research*, 9(07), 15-28. Available from: <https://www.ijstr.org/final-print/jul2020/The-Effect-Of-Covid-19-On-Consumer-Behaviour-In-Saudi-Arabia-Switching-From-Brick-And-Mortar-Stores-To-Online-shopping.Pdf>

[27] Iriani SS, Andjarwati AL. Analysis of perceived usefulness, perceived ease of use, and perceived risk toward online shopping in the era of Covid-19 pandemic. *Systematic Reviews in Pharmacy*. 2020;**11**(12):313-320. DOI: 10.31838/srp.2020.12.50

[28] Ramayah T, Ignatius J. Impact of perceived usefulness, perceived ease of use and perceived enjoyment on intention to shop online. *ICFAI Journal of Systems Management (IJSM)*. 2005;**3**(3):36-51

[29] Davis K. Newstrom, Human Behavior at Work: Organization Behavior. New York: McGraw Hill Book Company; 1985

[30] Yadav M, Goel M, Sharma B. Consumer perception towards online shopping during lockdown. *International Journal of Management*. 2020;**11**(7): 1578-1584. DOI: 10.34218/IJM.11.7.2020.140

[31] Lisdayanti A, Roespinoedji D, Saudi MH. The effect of perceptions of ease and perception of risk on interest in shopping online using the shopee application in the pandemic era. *Palarch's Journal of Archaeology of Egypt/Egyptology*. 2020;**17**(10):

1288-1297. Available from: <https://archives.palarch.nl/index.php/jae/article/view/4826>

[32] Fishbein M, Ajzen I. Belief, Attitude, Intention, and Behaviour: An Introduction to Theory and Research. Reading, MA: Addison-Wesley; 1975

[33] Akar E. Customers' Online Purchase Intentions and Customer Segmentation During the Period of COVID-19 Pandemic. *Journal of Internet Commerce*. 2021;**20**(3):371-401. DOI: 10.1080/15332861.2021.1927435

[34] Islam A, Anjum N, Ahmed I. Predicting consumers' intention to shop online in an emerging market: A COVID-19 perspective. *Journal of Marketing and Consumer Behaviour in Emerging Markets*. 2021;**1**(12):4-18. DOI: 10.7172/2449-6634.jmcbem.2021.1.1

[35] Ranasinghe U, Kuruppu U, Herath H, Wijayagrahi H, Mel WD. Factors affecting young consumers' online purchase intention in Sri Lanka: With special reference to undergraduates in general sir John Kotelawela defence university. 13th International Research Conference, General Sir John Kotelawela Defence University, Allied Health Sciences Sessions. 2020:85-94. DOI: 10.13140/RG.2.2.29965.36321

[36] Moon J, Choe Y, Song H. Determinants of consumers' online/offline shopping behaviours during the COVID-19 pandemic. *International Journal of Environmental Research and Public Health*. 2021;**2021**(18):1593. DOI: 10.3390/ijerph18041593

[37] Pham VK, Nguyen TL, Do TTH, Tang MH, Thu Hoai HL. A Study on Switching Behavior Toward Online Shopping of Vietnamese Consumer During the Covid-19 Time. 2020

- [38] Prasad RK, Srivastava MK. Switching behavior toward online shopping: Coercion or choice during Covid-19 pandemic. *Academy of Marketing Studies Journal*. 2021;25(1): 1-15. Available from: <https://search.proquest.com/openview/3874aad4d31ccc54327075a97fa2e538/1?pq-origsite=gscholar&cbl=38744>
- [39] Tanner J, Raymond M. *Principles of Marketing*. Nyack, NY: Flat World Knowledge; 2010
- [40] Hashem TN. Examining the influence of COVID 19 pandemic in changing Customers' orientation towards E-shopping. *Modern Applied Science*. 2020;14(8):59-76. DOI: 10.5539/mas.v14n8p59
- [41] Verweijmeren RW. The effect of COVID-19 on consumer adoption of the online purchase channel for grocery shopping. In: *Behavioural, Management and Social Science*. 2020. Available from: <http://essay.utwente.nl/81787/>
- [42] Nguyen HV, Tran HX, Van Huy L, Nguyen XN, Do MT, Nguyen N. Online book shopping in Vietnam: The impact of the COVID-19 pandemic situation. *Publishing Research Quarterly*. 2020;36: 437-445. DOI: 10.1007/s12109-020-09732-2
- [43] Eldabi T, Irani Z, Paul RJ, Love PE. Quantitative and qualitative decision-making methods in simulation modelling. *Management Decision*. 2002; 40(1):64-73. DOI: 10.1108/00251740210413370
- [44] International Trade Administration. 2020. Malaysia—eCommerce. Available from [https://www.export.gov/apex/article2?id=Malaysia-Online shopping](https://www.export.gov/apex/article2?id=Malaysia-Online%20shopping)
- [45] Saunders M, Thornhill A, Lewis P. *Research Methods for Business Students*. United Kingdom: Pearson Education Limited; 2009
- [46] Dinesh S, MuniRaju Y. Scalability of online shopping in the covid-19 era. *International Journal of Research-GRANTHAALAYAH*. 2021;9(1):123-128. DOI: 10.29121/granthaalayah.v9.i1.2021.3032
- [47] Hinkin T. A review of scale development practices in the study of organizations. *Journal of Management*. 1995;21(5):967-988. DOI: 10.1016/0149-2063(95)90050-0
- [48] Treece EW, Treece JW. *Elements of Research in Nursing*. 3rd ed. Maryland Heights, MO: Mosby; 1982
- [49] Kraisuth D, Panjakajornsak V. Thai AEC engineer readiness: A confirmatory factor analysis. *SAGE Open*. 2018;8(1): 1-16. DOI: 10.1177/2158244017745346
- [50] Kline RB. *Principles and Practice of Structural Equation Modeling*. NY: The Guilford Press; 2015
- [51] Ratnasari D, Nazir F, Toresano LOHZ, Pawiro SA, Soejoko DS. The correlation between effective renal plasma flow (ERPF) and glomerular filtration rate (GFR) with renal scintigraphy 99m Tc-DTPA study. *Journal of Physics Conference Series*. 2016;694(1):1-6. DOI: 10.1088/1742-6596/694/1/012062
- [52] Hair JF, Black WC, Babin BJ, Anderson RE. *Multivariate Data Analysis*. 7th ed. Upper Saddle River, NJ: Pearson Education; 2010
- [53] Gao X, Shi X, Guo H, Liu Y. To buy or not buy food online: The impact of the COVID-19 epidemic on the adoption of online shopping in China. *PLoS One*. 2020;15(8):1-14, e0237900. DOI: 10.1371/journal.pone.0237900