

PERCEIVED EASE OF USE, PERCEIVED USEFULNESS AND SOCIAL INFLUENCE AS DETERMINANTS OF CUSTOMERS INTENTION TO USE E-COMMERCE PLATFORM DURING COVID-19 PANDEMIC

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Abstract

This study investigates the underlying factors towards individual intention to purchase through electronic commerce (e-commerce) platforms during COVID-19 pandemic. The use of e-commerce platform is on the rise, especially during a COVID-19 because customers have a limitation for in-store purchase due to Movement Order Control (MCO) enforced by the government, which causing them to rely more in making purchases online. Drawing on the theory of Technology Acceptance Model (TAM), this study hypothesized that, perceived ease of use (PEOU), perceived usefulness (PU) and social influence (SI) are positively related customer intention to purchase through e-commerce platform. The study adopted cross-sectional research design and a structured questionnaire were used as a means of data collection. The responses of 393 e-commerce users collected via online survey were analyzed using Partial Least Squares-Structural Equation Modelling (PLS-SEM). The findings of this study showed that two out of three hypothesized relationships were supported. Specifically, PEOU and PU are important predictors of customer intention to purchase via e-commerce platform during a COVID-19 pandemic. Meanwhile, SI has no significant relationship with intention to purchase through e-commerce platforms during COVID-19 pandemic. The result of this study offers an important basis to the theoretical and practical implications related to online purchase via e-commerce platform.

Keyword: Perceived ease of use; Perceived usefulness; Social influence; Intention; e-commerce

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Abstrak

Kajian ini menyiasat faktor asas terhadap niat individu untuk membeli melalui platform perdagangan elektronik (e-dagang) semasa pandemik COVID-19. Penggunaan platform e-dagang semakin meningkat, terutamanya semasa COVID-19 kerana pelanggan mempunyai had untuk pembelian di kedai disebabkan Perintah Kawalan Pergerakan (PKP) yang dikuatkuasakan oleh kerajaan, yang menyebabkan mereka lebih bergantung kepada membuat pembelian secara dalam talian. Berpandukan kepada teori Model Penerimaan Teknologi (TAM), kajian ini membuat hipotesis bahawa, kemudahan penggunaan yang dirasakan (PEOU), kegunaan yang dirasakan (PU) dan pengaruh sosial (SI) adalah niat pelanggan yang berkaitan secara positif untuk membeli melalui platform e-dagang. Kajian ini menggunakan reka bentuk penyelidikan keratan rentas dan soal selidik berstruktur digunakan sebagai cara pengumpulan data. Maklum balas 393 pengguna e-dagang yang dikumpulkan melalui kaji selidik dalam talian telah dianalisis menggunakan Pemodelan Persamaan Struktur Sekurang-kurangnya Separa (PLS-SEM). Penemuan kajian ini menunjukkan bahawa dua daripada tiga hubungan hipotesis disokong. Khususnya, PEOU dan PU merupakan peramal penting dalam hasrat pelanggan untuk membeli melalui platform e-dagang semasa pandemik COVID-19. Sementara itu, SI tidak mempunyai hubungan yang signifikan dengan niat untuk membeli melalui platform e-dagang semasa pandemik COVID-19. Hasil kajian ini menawarkan asas penting kepada implikasi teori dan praktikal yang berkaitan dengan pembelian dalam talian melalui platform e-dagang.

Kata kunci: Kemudahan penggunaan yang dirasakan; Kegunaan yang dirasakan; Pengaruh sosial; Niat, e-dagang

Introduction

The birth and growth of the internet allowed for the expansion of purchasing goods and services via online transactions and interactions. According to Yeon et al. (2019), consumers may now discover information about products and compare prices more easily due to e-commerce platform. From the suppliers' side, the emergence of this digital marketplace can help them to market their products and services easily and efficiently to their targeted customers. In line with the growth of internet usage and the expansion of e-commerce platform, level of competition among e-commerce retailers keeps rising (Puspitasari et al. 2020).

The level of competition is getting critical due to the occurrence of COVID-19 outbreak. As reported before, COVID-19 not only change how people work, travel, and communicate but also how people shopping. Shahabi et al. (2021) and Seetharaman (2020) stated that business environment and operation has changed to contactless business and contactless interactions because of the pandemic. In other

words, from traditional shopping channels, customers are shifted to online shopping channels, causing the trend and demand for online shopping via e-commerce platform accelerated. Therefore, to keep with the great competition and economically survive during the pandemic, it is important for online retailer to understand the predictors of customers' online purchase intentions via e-commerce platform.

Although many previous studies have been conducted on the antecedents of customer intentions towards online shopping, understanding the intention of customer to use e-commerce platform to buy a product or service during the COVID-19 is still lacking especially in Malaysia. Therefore, is important for this study to bridge the gap by investigating the underlying factors that influence customers' intention to use e-commerce platform to shop during the pandemics. According to Akar (2021), the behaviour of customer is varied between online shopping and traditional shopping as well as during specific event or situation such as pandemic. Specifically, the main objectives of this study are to examine the influence of perceived ease of use, perceived usefulness, and social influence on customers' intention towards the use e-commerce during pandemics.

Literature Review

Theory

The theory used to support proposed research framework and hypotheses development in this study is Technology Acceptance Model (TAM). This theory, which was introduced by Davis (1989) claimed that perceived usefulness and perceived ease of use are the two main influences on a person's adoption of new technology, and behavioural intention is determined by a user's attitude toward adopting a new technology. Therefore, drawing on TAM theory, this study hypothesized that perceived ease of use, perceived usefulness and social influence are positively related to intention to purchase via e-commerce platforms during COVID-19 pandemic. The proposed theoretical framework is explicitly presented in Figure 1 below.

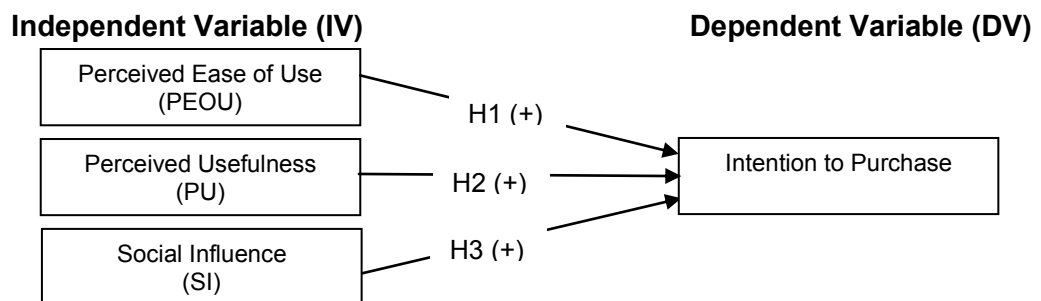


Figure 1: Proposed Theoretical Framework

Hypotheses Development

a) Perceived Ease of Use (PEOU) and Intention to Purchase

The term "perceived ease of use" describes how someone feels about the amount of physical and mental effort required to use a specific technology (Davis, 1993). In other words, perceived ease of use is explained as the degree that a user viewed a specific website as easy to learn, run or not too much effort to use it (To & Trinh, 2021), and in turn, increase their usage of the system. Customers may be unhappy and highly likely to disapprove of using a system or technology that is difficult to use, especially if they are elderly and inexperienced and are not tech knowledgeable (To & Trinh, 2021).

Previous studies have shown that perceived ease of use was positively and significantly associated with intention to use a particular technology. Specifically, it has been recognized that customers with a high level of perceived ease of use towards online shopping or internet shopping is more likely to use e-commerce platform to make a purchase during COVID-19. Tew et al, (2022) found that perceived ease of use and perceived usefulness are positively and significantly associated with customers' intention to adopt Near Field Communication (NFC) mobile payment. Similarly, in the context of smart grid technologies in Romania, Ianole-Calin and Druica (2022) claimed that perceived ease of use and perceived usefulness is positively impacted customers' intention to use that technology. Therefore, the following hypothesis is proposed:

H1: Perceived ease of use (PEOU) is positively related to intention to purchase through e-commerce platform during COVID-19.

b) Perceived Usefulness (PU) and Intention to Purchase

Perceived usefulness is defined as "the degree to which a person believes that using a specific system will improve his or her job performance". Therefore, a system high in perceived usefulness is one for which a user believes in the existence of a positive relationship between usage and efficiency (Davis, 1989). In the context of online shopping, Kripesh et al. (2020), interpreting perceived usefulness as consumers' perceptions of how an internet portal enhances their value and effectiveness during online buying. In other words, the more accessible and navigable an internet portal or a website for online transaction is, the more they begin to discover its advantages compared to direct transactions as well as the more likely customer intention to purchase through it (Dachyar & Banjarnahor, 2017).

Past empirical studies have provided support to confirm the relationship between perceived usefulness and customer intention in the context of e-commerce. Ma

(2021), for example, stated that non-adopters' perceived usefulness towards internet pharmacies in China is higher when they found internet pharmacies is convenience and efficient in terms of information searching, ordering online, comparing prices, and making payments online and therefore, affected their intention to use internet pharmacies in China. Similarly, Al-Hattami (2021) revealed that perceived usefulness has a positive relationship with customers' intention to continue usage of online shopping under COVID-19. Furthermore, Aji et al. (2020) and Aji et al. (2021) also found that perceived usefulness is a significant antecedent of behavioural intention. Accordingly, this study postulated that:

H2: Perceived usefulness (PU) is positively related to intention to purchase through e-commerce platform during COVID-19.

c) Social Influence (SI) and Intention to Purchase

The level to which a person perceives the importance of the peers' friends, families towards whether they should the new system or technology or not may exert social influence (Venkatesh et al, 2003). Online buyers may quickly obtain a wealth of knowledge about a certain topic from people who have recently dealt with it. This is a type of social influence known as informational social influence, which entails taking information or advice from someone who may or may not have been a friend or coworker previously. When a customer is under time limits, has inadequate knowledge, sees a high danger in the action, or just lacks interest in making the decision alone, informational social influence is extremely crucial. In the context of this study, it is assumed that, given the perceived risk associated with online shopping, we predicted that potential online consumers would seek advice from their friends or online consumer groups before making a purchase.

Literature predicting positive relationship between social influence and a person intention to adopt or use technology has shown that social influence is a significant antecedent of his/her intentions. For example, study by Lara-Rubio et al. (2021) reported that an individual intention towards adoption of peer-to-peer (P2P) payment system is influence by six factors. One of the factors is social influence or subjective norms. In addition, Liebana-Cabanillas et al. (2021) also found that usefulness, subjective norms and personal innovativeness significantly related to intention to use P2P mobile payment in Spain. In line with perceived usefulness, Aji et al. (2021) also found that subjective norms influence an individual intention to use e-money in Indonesia as well as towards intention to adopt Alipay in China (Cao & Niu, 2019). Therefore, it is hypothesized that:

H3: Social influence (SI) is positively related to intention to purchase through e-commerce platform during COVID-19.

Methodology

The population of this study consists of e-commerce’s users in Malaysia. Using convenience sampling technique and due to MCO during COVID-19 pandemic, a total of 404 questionnaires were distributed via google form to the targeted respondents. Out of 404 distributed questionnaires, only 393 questionnaires were usable for further analysis.

As for measurement, this study adopted established scales that have been validated by previous works (Hsu et al. 2006; Dwivedi et al. 2016; Rosillo Diaz et al.2019; Gefen et al. 2003; Hejiden et al. 2003; Pavlou 2003; Venkatesh et al. 2003; Cao & Niu 2019). All items were measured using 5 point-Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Respondent Profile

Table 1 shows a summary of respondents’ profile. Based on the Table, majority of the respondents are females 78.1% followed by male 21.9%. Over half of the respondents 91.6% were between 19-25 years old and have a bachelor’s degree (76.3%) followed by Diploma (13.5%). In terms of ethnicity, the higher percentage is Malay 83.2 % and have make an online purchase between 2-5 times in a month. In addition, 33.6% of the respondents spent 1-2 hours on online shopping in a week followed by 26.7% in less than one hour.

Table 1: Profile of Respondents

Demographic Characteristics		Frequency	Percent (%)
Gender	Female	307	78.1
	Male	86	21.9
Age	Below 18 years old	3	8
	19-25 years old	360	91.6
	26-35 years old	26	6.6
	Above 36 years old	4	1.0
Education	Postgraduate degree	24	6.1
	Bachelor degree	300	76.3
	Diploma	53	13.5
	Secondary school	12	3.1
	Below secondary	4	1.0
Ethnicity	Malay	327	83.2
	Chinese	7	1.8
	Indian	6	1.5
	Others (Malaysia)	53	13.5

Table 1 (continues)

Demographic Characteristics		Frequency	Percent (%)
Number of purchases made (monthly)	Just once	76	19.3
	2-5	243	61.8
	6-15	49	12.5
	More than 15	25	6.4
Time spent on online shopping (weekly)	Less than one hour	105	26.7
	1-2 hours	132	33.6
	2-3 hours	81	20.6
	More than 3 hours	75	19.1

Data Analysis and Result

To assess the measurement and structural model, Statistical Package for Social Science (SPSS) 26 version and partial least squares (PLS) modelling using the SmartPLS 4 version was used. According to Hair et al. (2017), before conducting measurement and structural model analysis, the normality test and common method variance (CMV) must be conducted. Normality test was performed using a software called as WebPower. The result showed that Mardia's multivariate skewness test was $b= 12.953$, $p<0.01$ and kurtosis test was $b=61.068$, $p<0.01$, indicating that the data did not follow the normal distribution. Thus, SmartPLS was suitable to be used to analyze the data.

Following suggestion by Kock and Lynn (2012), and Kock (2015), full collinearity test was carried out to rectify the issue of CMV. This test was performed because this study used single source during a data collection process. According to Hair et al. (2017), VIF value less than 5 indicating that there was no multicollinearity problem exist. In other words, there is no issue with a single source data. Based on Table 2 below, the VIF values for this study were less than 5. Therefore, the problem of single source data was of minor significance.

Table 2: Full Collinearity Testing

INT	PEOU	PU	SI
2.657	3.473	3.718	1.565

Note:INT= Intention, PEOU = Perceived Ease of Use, PU=Perceived Usefulness, SI= Social Influence,

Measurement Model

Proposed model was tested using a 2-step approach (Anderson & Gerbing, 1988). First, validation of measurement model. It involves the test of reliability and validity of the instruments used for this study. Second is analysis of structural model, which is to

test the proposed hypotheses. According to Hair et al. (2019), the bootstrapping approach was used to determine the importance of the path coefficient between exogenous and endogenous variables.

Specifically, the reliability and validity of measurement model was validated using convergent and discriminant validity. As stated by Hair et al. (2019), Hulland et al. (2018), and Syima et al. (2019), convergent validity must be proven to guarantee that numerous items measure the same constructs. Convergent validity is met when the loading and Average Variance Extracted (AVE) values are both ≥ 0.5 and the composite reliability (CR) score is ≥ 0.7 . (Hair et al., 2017). As shown in Table 3, the loadings and AVEs are all higher than 0.5 (ranging from 0.648 to 0.745) and the CRs are all higher than 0.7 (ranging from 0.902 to 0.936). Therefore, the analysis confirmed that convergent validity was established.

Table 3: Measurement Model

VARIABLE	ITEMS	LOADINGS	CR	AVE
	INT1	0.817	0.902	0.648
	INT2	0.765		
	INT3	0.770		
	INT4	0.856		
	INT5	0.814		
	PEOU1	0.846	0.936	0.745
	PEOU2	0.879		
	PEOU3	0.880		
	PEOU4	0.852		
	PEOU5	0.858		
	PU1	0.851	0.923	0.706
	PU2	0.875		
	PU3	0.754		
	PU4	0.852		
	PU5	0.863		
	SI1	0.878	0.910	0.717
	SI2	0.788		
	SI3	0.876		
	SI4	0.841		

Next, discriminant validity was assessed using the Heterotrait-Monotrait (HTMT) criterion suggested by Henseler et al. (2015) and Franke and Sarstedt (2019). Discriminant validity was used to determine whether items differ from constructs (Ramayah et al., 2018; Hair et al. 2014). The threshold or cut-off value for HTMT is less than 1 (Black & Babin, 2019). As shown in Table 4, the values of HTMT were all lower than 1, indicating the construct used are distinct. Based on these two validity

tests, the results have demonstrated that the measurement items used in this study are valid and reliable and therefore, can proceed with hypothesis testing.

Table 4: Discriminant Validity (HTMT)

	1	2	3	4
INT				
PEOU	0.842			
PU	0.854	0.901		
SI	0.577	0.605	0.667	

Structural Model

Utilizing the bootstrapping technique with a resampling of 5000, the results show that two out of three direct hypotheses were supported (H1 and H2). Meanwhile, H3 was not supported. Specifically, based on Table 5, it is shown that coefficient of determination (R^2) value is 0.624, indicating that 62.4% of total variance in customer intention to purchase through e-commerce platform during COVID-19 is explained by perceived ease of use (PEOU), perceived usefulness (PU) and social influence (SI). However, the result of direct effect analysis between these constructs showed that only PEOU and PU were positively and significantly related to INT ($\beta = 0.404$, $t = 6.291$: LL = 0.301, UL = 0.511, $P < 0.01$); ($\beta = 0.391$ $t = 6.056$: LL = 0.286, UL = 0.499, $P < 0.01$) respectively. Hence, H1 and H2 are supported. SI on the other hand was not significantly related to INT ($\beta = 0.052$, $t = 1.332$: LL = -0.010, UL = 0.117, $P > 0.05$). Hence H3 is unsupported. The findings imply that the higher perceived ease of use and perceived usefulness of the e-commerce platform, the higher the level of customer intention to to purchase through e-commerce platform during COVID-19. Social influence, on the other hand, did not contribute to enhance their intention. The significant effect of perceived ease of use and perceived usefulness were supported by the previous studies (Ma, 2021; To & Trinh, 2021; Al-Hattami 2021; Tew et al., 2022). Meanwhile, insignificant effect of social influence on intention to purchase via e-commerce platform during Covid-19 is consistent with the study by Arfi et al. (2021) and Belanche et al. (2022).

Table 5: Hypothesis Testing

Hyp	Relationship	Beta	SE	T value	P value	LL	UL	R^2	f^2	Decision
H1	PEOU -> INT	0.404	0.064	6.291	0.000	0.301	0.511	0.624	0.143	Supported
H2	PU -> INT	0.391	0.065	6.056	0.000	0.286	0.499		0.123	Supported
H3	SI -> INT	0.052	0.039	1.332	0.092	-0.010	0.117		0.005	Unsupported

In addition, the table also shows the effect size (f^2) of exogenous variables on endogenous variables of perceived ease of use, perceived usefulness, social influence and customer intention. Based on Cohen (1992), effect sizes of 0.35, 0.15, and 0.02, are considered as having large, medium and small effect sizes, respectively. Therefore, based on Cohen's rule of thumb, the finding shows that, perceived ease of use and perceived usefulness have small effect on customer intention to purchase through e-commerce platform during COVID-19. As for predictive relevance (Q^2), the blindfolding process was used to evaluate the Q^2 . According to Hair et al. (2011), if the cut-off value for Q^2 is greater than zero, it demonstrates the model's ability to make predictions.

Conclusion, Implications and Recommendations

The main objective of this study is to identify the factors that influence customers' intention to make a purchase via e-commerce platform such as Shopee, Lazada and eBay during pandemic. Using the construct derived from TAM with social influence, which may directly motivate this customer to use e-commerce platform, this study tests the proposed hypotheses using SPSS and PLS-SEM. Based on the result of 393 respondents, two main variables in TAM which are perceived ease of use and perceived usefulness are the most important antecedents to the intention of customer to make a purchase using e-commerce platform during the pandemic. In other words, this study found that the relationship between these two variables is positive and significantly related to customer intention to purchase via e-commerce platform. This result is consistent with the traditional TAM (Davis et al., 1989) and with many previous studies (i.e; To & Trinh, 2021; Ma, 2021; Ianole-Calin & Druica 2022; Aji et al, 2021; Al-Hattami, 2021; Tew et al, 2022). In contrast, social influence has no significant influence on customer intention to purchase via e-commerce platform during pandemic. Although the result is not consistent with the findings of previous studies, but in the context of this study, it can be assumed that the insignificant result might be due to the limitation of doing offline purchase or brick-and-mortar purchase during the pandemic. In other words, with the MCO that have been imposed by the government, customer have no alternative and the customer think that seek an opinion or influence of friends, family or colleagues are not important in their decision to make a purchase via e-commerce platform during the pandemic.

In terms of research implications, this study supports the TAM by showing that perceived ease of use and perceived usefulness is positively related to behavioural intention and this model is relevant in studying the intention to use e-commerce platform during pandemic. As for practical implications, the findings offer important information about the factors that can help online seller or e-commerce provider to encourage customers to use their website or platform to make a purchase. As discussed above, perceived ease of use and perceived usefulness are key predictors of customer intention to purchase via e-commerce platform during pandemic. Based

on this result, it is suggested that online seller or e-commerce provider should ensure their platform easy to navigate, easy to learn, provide useful and up-to-date information that can help them less stressful when making an online purchase.

The current study has several constraints, which call for future research. First, this study only investigated the relationship between perceived ease of use, perceived usefulness, and social influence with customer intention to purchase via e-commerce platform during pandemic. Therefore, other explanatory variables such as perceived risk, perceived familiarity as well as other moderating or mediating variables should be incorporated into the model. Considering other variables in the model not only can expand the current literature of technology acceptance but also can enhance the robustness of the model and other theories. Second, this study only considers e-commerce users in Malaysia. Future research is recommended to get a data from other country, and it would be more interesting if the comparison study between country can be conducted.

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