A STUDY THAT INFLUENCES SMEs IN ADOPTING E-COMMERCE IN MALAYSIA UNDER INSTABILITY PHENOMENON

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ABSTRACT *- This research is going to study the factor that will influence the SME service industry adopting e-commerce in Malaysia under the instability phenomenon. Given the impact of COVID-19, this study will evaluate the factors that influence the SME service industry to adopt e-commerce under this instability and uncertainty. Hence, the four factors will be discussed which are technology context, organizational context, environmental context, and individual context. 200 owners or managers will be participants in this research by giving supporting messages to allow further understanding of the potential prospects of e-commerce adoption.*

Keywords - Small Medium Enterprise; Covid-19; E-commerce.

I. INTRODUCTION

In today's world, the pandemic of COVID-19 has changed the way business operates and changes the purchasing habits of customers within a month. The effect of COVID-19 is uncontrolled and unstoppable. Most countries facing lockdown including Malaysia and most of the economic activity are forced to suspend [1]. However, under the instability phenomenon, the e-commerce industry is still growing. According to Bernama News (2020), a total of 140,883 Malaysian SMEs have participated in e-commerce platforms as of September 2020 compared to 42,620 SMEs in 2019. Malaysia SMEs are gradually moving towards digital transformation.

Therefore, the objective of this study is to determine the factors that will influence e-commerce adoption by the SMEs service industry. Because the COVID-19 pandemic had affected some physical stores that remained closed and thus the online user had raised [2]. So, this study will look into what the significant factor will influence SMEs in adopting e-commerce during the instability phenomenon.

II. LITERATURE REVIEW

2.1 E-commerce adoption

In the late1970, e-commerce was a relatively new concept that gradually penetrated into the business vocabulary. Originally e-commerce refers to the execution of commercial transactions electronically with technologies such as Electronic Data Interchange (EDI) and Electronic Funds Transfer (EFT) [3]. With the advanced changes in technology, nowadays e-commerce is all about electronically mediated information exchanges between organizations and their external stakeholders. These activities encompass no matter are financial transactions, exchanges of information, selling and buying a product or other services [4].

E-commerce adoption has brought enormous potential benefits to organizations and contributes to economic growth in the country [5]. Statistics had shown that the Malaysian e-commerce market for 2019 has generated revenue of $3.68 billion and predicted by the year 2023, the annual market growth to reach 11.8 percent resulting in a market volume of $5.75billion [6]. The adoption of e-commerce creates opportunities and offers benefits for businesses and industries going forward. Business benefits from 24-h availability of services by reaching customers directly, fulfilling customer needs, building rapport, and exchanging information with customers, yet increasing sales effectiveness [7].

E-commerce adoption among SMEs in Malaysia has roused. This is where in this unprecedented period, the SMEs service industry recalibrates and re-set its business model to incorporate digitization for its part of core strategy. The crisis triggered by the COVID-19 has prompted the SMEs service industry to adopt e-commerce as one of the solutions to maintain sustainability, competitiveness, and reach out to customers [8]. However, a survey conducted had indicated that SMEs in Malaysia are still struggling with cash-flow problems which 20% of respondents are considering permanently shuttering business [9]. Since SMEs service industry had a huge contribution to the Malaysia economy, and digitalization has proven to be beneficial to SMEs service industry as it can assist in avoiding a complete economic standstill for the entrepreneur during the COVID-19 pandemic, the Malaysia government has introduced an initiative to encourage SMEs to adopt e-commerce which includes financial aid under the PERIHATIN Economic Stimulus Package plan especially for SMEs [10].

2.2 Technological context

A number of technology contexts have been examined in relation to SME's e-commerce adoption [11]. Technology context represents a range of technologies accessible to a firm for adoption. It can be either both where the technologies available on the market or the current equipment business have. The technology context variables are vast, such as perceived benefit, compatibility, and cost that will influence the technology adoption by SMEs service industry in Malaysia [12].

Technology is obviously one of the main factors that have influenced the SME service industry's decision to adopt innovative systems. When SMEs adopt e-commerce, the enterprise believes the technology can bring possible advantages to their firm. This is where entrepreneurs believe

in adopting e-commerce, it can improve operational costs and job performance [13]. While compatibility also is an important aspect to determine SMEs service industry in adopting e-commerce. Entrepreneurs are more likely to utilize technology that can be worked in maximum seamlessly with existing technology infrastructure, values, culture, and work practice [14]. The study from Alsaad, Mohamad, & Ismail [15] had recognized compatibility as one of the significant factors influencing e-commerce. The study discovered that SMEs will adopt the innovation when the possibility of innovation is consistent with the work practices, firm culture, and value [16].

2.3 Organizational context

Organizational context refers to the company's characteristics and resources, including aspects such as technology readiness and firm size that might influence e-commerce adoption [12].

By adopting e-commerce, the organization will look into the technology readiness of to what extent or how well prepare the technology infrastructure, relevant systems, and IT human resources that can support e-commerce adoption [17]. This is important that the SME service industry had the availability of technology tools to adopt e-commerce and more importantly, there is the availability of human resources who are expertise or mastery of technology. The study by Nurlinda, *et al*. [18], points out that the availability of human resources in technology has the most powerful influence on e-commerce adoption were accounting for 80.19%. On the contrary, the availability of technology tools in adopting e-commerce accounted for 80.05%. This shows that the skilled human resource is more essential as they had relative knowledge and profession of the technology application.

The study by Ahmad, *et al*., [19], also supported that IT knowledge within an organization's human resources is important in e-commerce adoption. The study also revealed that Singapore had a formal plan and a task force dedicated to carrying out e-commerce plans, which shows that there is widespread expertise within the internal SMEs. Therefore, this had positively influenced the e-commerce adoption rate among SMEs in Singapore. In the context of Malaysia, most of the SMEs are still not availing of digitalization enablers such as cloud computing, Internet of Things (IoT), and data analytics. The lack of knowledge and skilled human resources is the main reason, thus leading to the low access to technology. The white paper published by SME Corp Malaysia and Huawei Technologies (M) Sdn Bhd indicates that the usage of cloud computing, IoT, data analytics among SMEs are only 44%, 35%, and 54% respectively [20]. Apparently, without having IT expertise, the SMEs service industry may be unaware of net technology and may not be willing to take the risks of adopting certain technology [21].

2.4 Environmental context

Environmental context is considered as the external factor to the firm and has an effect on e-commerce adoption by SMEs service industry in Malaysia [22]. These external factors generally come from the pressure of customer/supplier, competition, or government support.

The pressure of customers/suppliers relates to the degree of pressure from customers/suppliers perceived by the SME service industry. In many cases, customers/suppliers have the power to pressure the SME service industry to embrace the particular new technology. This happened where the company encouraged the branches and suppliers to adopt e-commerce technology. Thus, can be linked to their global production networks. This happened in the wireless tracking (RFID) technology that was used in Wal-Mart because of pressure from suppliers [23]. Apart from suppliers, this study has identified that customer also is an essential factor influencing the SMEs service industry in Malaysia to adopt e-commerce. This is because customers switch online during this pandemic encouraging businesses to move toward digital commerce [24]. A Statista had shown 64% of the respondents explain they purchase more online during the COVID-19 pandemic in Malaysia [25].

In addition, due to the MCO in Malaysia, the SME service industry had been disrupted. Some of the non-essential service sectors remain closed and some essential service sectors are restricted in operating hours. Therefore, customers change their buying behaviors to online that is available 24hr [26]. Customer buying behavior had given pressure toward SMEs service industry in Malaysia to move digital. If SMEs fail to adopt e-commerce, the customer demand from alternative channels will not be satisfied. Eventually, the SME service industry might not be able to survive in the new economic system especially under the instability phenomenon. In short, the customer/supplier had the power in influencing the SME service industry in adopting e-commerce.

The pressure of the competitor could be one of the important factors affecting the adoption of e-commerce. Based on Sin & Sin [27] research, indicated that competitive pressure under the environmental context has a significantly positive influence on e-commerce adoption. This happens due to the increased adoption of e-commerce within the SME service industry market. This aspect is also correlated to customer pressure. Since the increase of online customers, every SME service industry one after another wants to adopt new technology in order to reach customers and ensure the survivability of the firm. Thence, it increases the competitor pressure as every SME service industry adopts e-commerce more widely compared to the competitor to achieve outstanding firm performance and sustained competitive advantages [28]. As a result, the SME service industry failed to adopt e-commerce and might be left behind in the market since other customers started to rely on SMEs that had adopted e-commerce. So, competitor pressure had given a significant impact on the SMEs service industry to adopt e-commerce as Raghavan, Wani, & Abraham [29] research stated.

2.5 Individual context

Mahliza's [30] research found that individual contexts are also important factors for SMEs to adopt e-commerce. This is because the strategic decision is made by the manager or the owner who has a very large influence on the company. The owner or manager characteristic is an important factor affecting SMEs service industry in e-commerce adoption where the aspect includes individual innovation, ability, and experience.

Manager or owner innovation will affect e-commerce adoption in terms of where the problem occurs, how it will be solved. A manager or owner who tends to seek solutions in

different ways and never tried before when the problem is located is considered an innovative manager [31]. It is important where Falahat, Tehseen, & Horne's [32] study clarify that SMEs service industry who had innovative owner or manager will lead to superior firm performance in the turbulent business environment.

The ability and experience of the manager or owner are also identified as determinant factors that will influence the adoption of e-commerce. The owner and manager who had greater ability and experience in IT will be more confident in adopting e-commerce and thus reducing the risk and uncertainty of adopting the technology [33]. Especially under the COVID-19 pandemic, there is one of the mobile industries in which owner utilized its IT ability and experience in leveraging its contracts with mobile phone retailers come out with an e-commerce platform that helps the retail business continue to sell and deliver products directly to the customer during an ongoing pandemic [34]. Undoubtedly, the owner's ability and experience can assist and increase the speed of technology adoption successfully.

III. METHODOLOGY

3.1 Research instrument/measurement

Questionnaire administration is the method for the researcher to collect the data [35]. This research uses a quantitative method which is an online survey questionnaire as it uses in Likert scale. There are 200 surveys conducted to the respondent in Selangor, Malaysia.

Data analysis refers to the researches that go from large amounts of data to meaningful insights [36]. SPSS version 27 software is chosen for the study in analyzing questionnaire, means, frequency, and data reliability [37].

3.2 Pilot study

A pilot study will be conducted with SMEs service industry located in Selangor, Malaysia. The respondents will be the manager and owner who can make decisions in the firm.

Pilot studies provide valuable information for the research main study. It carried out 30 surveys to analyze the reliability of each independent variable Cronbach's alpha is above 0.7 [38].

IV. DATA ANALYSIS

4.1 Correlation Analysis

Table 4.1 interprets the analysis of the correlation between DV and IV. Pearson correlation analysis helps to measure the statistically significant relationship between two continuous variables [39]. The determination of the correlation level is based on table 4.2 below.

According to table 4.3 below, the result of the model summary shows that the R square value of this research is 0.664. It indicates that 64.4% of the total variance in the dependent variable (e-commerce adoption) is explained by the total independent variable (technology context, organizational context, environmental context, and individual context). Therefore, the remaining 35.6% can be explained by the other factors that are not involved in this research. Besides, a Durbin-Watson value from table 4.3 is 1.821. As a result, it indicates the data is no autocorrelation problem among the residuals since the value is between 1-3.

Table 4.1–Correlation Analysis

Correlations						
		ECA	TC	OC	EC	IC
ECA	Pearson Correlation	1	.786**	.601**	.579**	.734**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	198	198	198	198	198
TC	Pearson Correlation	.786**	1	.641**	.659**	.766**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	198	198	198	198	198
OC	Pearson Correlation	.601**	.641**	1	.649**	.710**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	198	198	198	198	198
EC	Pearson Correlation	.579**	.659**	.649**	1	.768**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	198	198	198	198	198
IC	Pearson Correlation	.734**	.766**	.710**	.768**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	198	198	198	198	198
**. Correlation is significant at the 0.01 level (2-tailed).						

Table 4.2: Correlation Scale

Scale of correlation coefficient	Value
$0 < r \leq 0.19$	Very Low Correlation
$0.2 \leq r \leq 0.39$	Low Correlation
$0.4 \leq r \leq 0.59$	Moderate Correlation
$0.6 \leq r \leq 0.79$	High Correlation
$0.8 \leq r < 1.0$	Very High Correlation

Table 4.2: Correlation Scale

4.2 Multiple Regression Analysis

Table 4.3–Model Summary

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.815[a]	.664	.657	.30516	1.821
a. Predictors: (Constant), IC, OC, TC, EC					
b. Dependent Variable: ECA					

4.4 ANOVA

Table 4.4–ANOVA

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	35.534	4	8.883	95.394	.000[b]
	Residual	17.973	193	.093		
	Total	53.506	197			
a. Dependent Variable: ECA						
b. Predictors: (Constant), IC, OC, TC, EC						

ANOVA Model table 4.4 above, is to examine whether there are statistically significant differences between the several independent variables. The significant level is analyzed based on the sig-value shown in the ANOVA table. The significant value should be less than 0.05 means the model is fit to use for further analysis. In contrast, if the significant value is more than 0.05, it means that there is non-significant [40]. According to table 4.22, the significant level shown in

ANOVA table is 0.000, which is below that the significant level of 0.05. As a result, it can be said that there is a statistically significant for the variables and the model is fit to use for further analysis.

4.4 Coefficient Test

Table 4.5–Coefficients

Coefficients[a]							
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	1.057	.182		5.809	.000		
TC	.465	.058	.537	8.018	.000	.388	2.580
OC	.062	.054	.071	1.151	.251	.454	2.204
EC	-.068	.061	-.075	-1.117	.265	.381	2.622
IC	.311	.076	.330	4.071	.000	.265	3.779
a. Dependent Variable: ECA							

The coefficient table 4.5 shown above allows researchers to figure out whether the hypothesis for the independent variables is accepted or rejected. The hypothesis for the independent variables is accepted when the significant value is less than 0.05. In contrast, the hypothesis is rejected when the significant value is more than 0.05 [41]. According to table 4.23, technology context, and individual context (IV) significant values are both 0.000 which are significant and accepted as their significant value less than 0.05. On the other side, organizational context, and environmental context (IV) significant values are 0.251 and 0.265 respectively. Both variables are not significant and rejected which significant values are more than 0.05.

v. DISCUSSION AND CONCLUSION

Under this Section, it will further discuss and come out with a conclusion regarding to the outcome from data analysis and conclusion. Besides that, the contribution of the study, as well as the limitation of the study also mentioned. In addition, at the end of this, we also offered several recommendations and advice to SMEs service industry and future research.

5.1 To determine the relationship between technology context and e-commerce adoption

The objective of conducting this research is to investigate the relationship between the technology context and e-commerce adoption in SMEs service industry in Malaysia under the instability phenomenon. Based on the result shown in table 5.1, this hypothesis is accepted and there is a significant relationship between technology context and e-commerce adoption in SMEs service industry in Malaysia under instability phenomenon. The result of findings is also supported by previous research, which is Hamad, Elbeltagi, & El-Gohary [11], where technology factors are considered among the most important factor which affects developing countries' adoption of IT. The other study by Ocloo, et al. [28] also supported the hypothesis in showing a positive and significant effect on e-commerce adoption levels among SMEs. Technology context is regarded to the relative advantage where it seems to be a critical factor influence SMEs service industry adopt e-commerce. This is because SMEs service industry believes the benefits could be obtained after the adoption of e-commerce.

5.2 To determine the relationship between organizational context and e-commerce adoption

The objective of conducting this research is to investigate the relationship between the organizational context and e-commerce adoption in SMEs service industry in Malaysia under the instability phenomenon. Based on the result shown in table 5.1, this hypothesis is rejected and there is no significant relationship between organizational context and e-commerce adoption in SMEs service industry in Malaysia under instability phenomenon. However, there is research that argues that organizational context had influenced e-commerce adoption determined the high dependence of the organization on the strategic decision made by the manager or owner [42]. In the other previous research by Chandra & Kumar [43], the hypothesis of organizational context showed a non-significant relationship with the adoption intention of the technology. In this research, the organizational context had been rejected and the possible explanation for the insignificance is because of lack of supported IT knowledge and human resource. Therefore, SMEs service industry will reluctant to adopt new practices.

5.3 To determine the relationship between environmental context and e-commerce adoption

The objective of conducting this research is to investigate the relationship between the environmental context and e-commerce adoption in SMEs service industry in Malaysia under the instability phenomenon. Based on the result shown in table 5.1, this hypothesis is rejected and there is no significant relationship between environmental context and e-commerce adoption in SMEs service industry in Malaysia under instability phenomenon. However, according to Lim, Lim, & Trakulmaykee [44], stated that environmental context is an important factor for SMEs in using e-commerce. This is because SMEs with "high tech" enable them to place businesses in a better market position. Even so, this study wasn't found to have a significant relationship between environmental context and e-commerce adoption. Anyway, a study by Miao & Tran [45] also showed an insignificant impact on the intention for e-commerce adoption in Saudi SMEs. The reason behind this is that SMEs are less willing to accept changes, especially under instability phenomena like the Covid-19 pandemic.

5.4 To determine the relationship between individual context and e-commerce adoption

The objective of conducting this research is to investigate the relationship between the individual context and e-commerce adoption in SMEs service industry in Malaysia under the instability phenomenon. Based on the result shown in table 5.1, this hypothesis is accepted and has a significant relationship between individual context and e-commerce adoption in SMEs service industry in Malaysia under instability phenomenon. The output of findings also has been supported by previous research studies which indicated individual context in manager or owner innovativeness are a key factor that stands out in the case [46]. In addition, this hypothesis is also supported by Rahayu & Day [12]. The result shows a significant relationship between individual context and e-commerce adoption because the SMEs service

industry owner or manager has characteristics such as innovation, ability, and experience. The individual (owner/manager) in SMEs service industry plays an important role because the strategic decision is made by the manager. Thence, the adoption of e-commerce decisions was affected by owner or manager characteristics.

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