

The Antecedents of Digital Marketing Application by Malaysian Micro, Small and Medium Enterprises (MSMEs)

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ABSTRACT

This research focuses primarily on Micro, Small and Medium Enterprises (MSMEs) in Malaysia, with special reference to Perak State. It is widely recognised that the adoption and use of digital marketing applications change the ways in which organizations conduct their activities and represent a critical business opportunity for MSMEs. This opportunity will only be realised by MSMEs if, and when, digital marketing is applied to their organizations. This, therefore, creates a requirement to understand the factors that influence MSMEs in making the adoption decision. The research related to such factors is scarce, not least because the technologies are relatively new. By using the Technology-Organization-Environment (TOE) framework, this study, therefore, attempted to understand the predictors/factors influencing the decision making by MSMEs to adopt digital marketing applications. It employed a quantitative approach to meet the research objectives. A survey involving 369 MSMEs in Perak State was conducted to examine empirically the preliminary model. The survey data were analysed using Logistic Regression (LR) technique. Of the factors examined, technological and organizational contexts were found to have a significant influence on MSMEs' decisions to adopt digital marketing applications. These findings have important implications and value for the research community, MSMEs and policymakers in terms of formulating improved strategies for digital marketing adoption and applications. The resulting research model proposed in this paper/article can improve these stakeholders'

understandings on why some MSMEs have chosen to adopt digital marketing technologies, while other MSMEs which face similar market conditions have not.

Keywords: *MSME, digital marketing, adopters, non-adopters, technology, business environment.*

1.0 INTRODUCTION

Various studies have shown that by strategically harnessing the power of the Internet, business organizations may be able to increase profit maximization through strategic online marketing approach which covers a broad spectrum of applications that enable businesses to form virtual relationships with its customers, potential buyers, resellers, suppliers and business partners around the world. Hongyu and Dongmei (2011) suggested that the advent of the Internet has changed global business and marketing landscape especially on how they distribute product's information among customers and how they interact with supply and demand as well as buy and sell. Internet usage started mainly as a means of communication via electronic mails (E-mail) and for providing information via online news and homepages on the Web (Drew, 2003). According to International Telecommunication Union (ITU) (2018), as of June 2017, 54.4 per cent of the world's population has Internet access, with Asia has the most Internet users representing 48.7 per cent from that population.

Despite the efforts of the Government and various support schemes, only 30 per cent of the local MSMEs have their own websites as revealed by the Malaysian Small and Medium Industry Association in 2013. Some are still at the initial stage, and or not progressing much beyond E-mail and simple information-based webpages. Ang, Tahar and Murat (2013), mentioned that although Malaysian MSMEs have a company website, most of the functions are limited for corporate image purposes only and neglected the importance of a website for communication and promoting the products and services. In fact, MSMEs owners or managers still do not know and understand the strategic value of digital marketing on their businesses (Lim, Baharudin & Low, 2017). The number of MSMEs achieving advanced stages of digital marketing is very low as compared to larger corporations (Omar et al., 2011). Therefore, in view of the low adoption of digital marketing applications among MSMEs and lag of digital marketing research being done in Malaysia within the context of MSMEs, there is a need and worth to investigate the antecedents of digital marketing application among Malaysian MSMEs. Thus, this paper was written to answer two research questions:

- i) What are the antecedents of digital marketing application among Malaysian MSMEs?
- ii) Which antecedent is the most important in influencing the digital marketing application?

2.0 PAST STUDIES

There are limited literatures on digital marketing adoption among MSMEs, especially in the Malaysian context. Hence, it is critical to review on a wider concept of Information and Communication Technology (ICT) innovation literatures in relation to the factors that have influenced the decision to adopt ICT innovations that may include digital marketing tools and components such as E-commerce, websites and social media in business organizational settings.

2.1 Digital Marketing and ICT adoption in MSMEs

The term digital marketing may be perceived as the new and latest ICT innovation to support business marketing processes that are based on the Internet through the use of digital information and online media, with a view to create, disseminate and transfer of business value in order to achieve marketing objectives and to support the transactions of marketing activities processes such as building customer relationships and enhancing service quality delivery.

MSMEs have unique features that can help them to compete with larger corporations especially when comes to adopt new technologies in their business operations. They are often seen as dynamic organizations and thus are expected to easily adapt to modern ICT technologies (Abdullah, Wahab & Shamsuddin, 2013). MSMEs are more flexible, adapt to changes, and are better placed to develop and accept new ideas as compared to larger corporations (Subrahmanya, Mathirajan & Krishnaswamy, 2010). Yeboah-Boateng and Essandoh (2014) also agreed that MSMEs are easily to adapt ICT because of their size and nature. They are more flexible and simpler organizational structures compared to larger corporations, which allows them to be more innovative in their response to rapid technological changes in a globalization environment.

Owing to the above characteristics, there are substantial evidences that MSMEs has engaged with many technological innovations. Subrahmanya et al. (2010) has found that MSMEs has witnessed the introduction of a range of digital marketing applications, ranging from basic technologies to more complex and advanced

IT capabilities, such as Web 2.0. Other studies have also examined the adoption of different ICT applications over recent decades. For example, Kuan and Chau (2001) investigated the adoption of Electronic Data Interchange (EDI) by MSMEs in Hong Kong while in another study by Rahayu and Day (2015) have studied E-commerce adoption in MSMEs in Indonesia. In a similar vein, a recent study by Ramayah, Ling, Taghizadeh and Rahman (2016) have also identified determinants for website usage intention among Malaysian MSMEs, reflecting an interest in understanding the adoption of Internet technology in this country.

2.2 Malaysian MSMEs

Since Malaysia is well-positioned and strategically located in the Asia region which has been regarded as the most populated Internet users in the world by ITU, Malaysian MSMEs should take this advantage by adopting digital marketing in their businesses to help them grow and participate in new opportunities both locally and globally. The benefits associated with digital marketing among MSMEs have received empirical attention in the past such as Melewar and Smith (2003) who found that the Internet may enhance the ability of MSMEs to identify and evaluate international competitors apart from developing networks of contacts and partners in foreign markets. With the ability to enter international markets at minimal costs, digital marketing may provide wider opportunities for the Malaysian MSMEs to reach new potential customers around the world. According to SME Corporation (2015), Malaysian MSMEs contributed 36 per cent to the national GDP in 2014, and this is expected to grow at around 10 per cent annually to reach 49 per cent by 2020. This is also supported by Malaysia Digital Economy Corporation (MDEC) (2017) that stated, Malaysia has a large segment of the population that is well-versed in technology and most Malaysians who use the Internet spend more than 16 hours online each week. Consistently, more than 67 per cent of the population currently are considered as Internet users or netizens, and 80 per cent of these netizens are estimated to have made online purchases before, a rate that is comparable to other countries such as Thailand, Singapore, India, and China. Malaysia has about 12 per cent of people using credit card, the second highest in ASEAN, behind Singapore's 37 per cent but well ahead of Thailand's 5 per cent and Indonesia's 1 per cent. Malaysia also has solid e-Commerce platforms, including online marketplaces such as Lelong and Mudah, and big international companies such as Zalora and Lazada have entered the market. The Internet business infrastructure is also supported by well- developed regulations, including the Electronic Commerce Act (ECA) and the Personal Data Protection Act (PDPA).

2.3 Research Theoretical Framework for ICT Adoption Model

This study employed the Technology-Organisation-Environment (TOE) framework to determine the antecedents of digital marketing application among Malaysian MSMEs (Figure 1). Srivastava and Teo (2010), Oliveira and Martins (2011) as well as Ramdani, Chevers and Williams (2013) are all recommended that the TOE framework is a widely-accepted model for studying ICT adoption in various business organisations, including MSMEs. The TOE framework is best described as an organisational-level theory that consists of three contexts of antecedents: technological (T), organisational (O) and environmental (E) (Baker, 2012). Recently, it has been viewed as an ideal theoretical framework for predicting and explaining the adoption of any given technology (Ndekwa & Katunzi, 2016).

The technological context describes existing technologies in the organization as well as the pool of technologies available in the market. A consideration of existing literature on ICT adoption using TOE shows that the impact of characteristics of the technology has long been recognised. Rogers (2010) have identified four elements to measure the technological context that may have an influence on the decision to adopt or reject a given technology in any organization. They are relative advantage, simplicity, security and trialability. Many empirical studies such as Consoli (2012), Luo and Bu (2016) as well Rahbi and Abdullah (2017) on ICT adoption in MSMEs have provided evidence of a significant link between technology applications that are providing positive business impacts, safe and friendly to use are more likely to be applied. Hence, this study proposes;

H1: Technological context influences Malaysian MSMEs' decision to adopt digital marketing

The second context of antecedents in the TOE framework, organizational has through a considerable number of studies such as Srivastava and Teo (2010), Tan, Eze and Chong (2012) as well as Tehrani and Shirazi (2014) have been found to impact the adoption of new technologies. With respect to MSMEs, there are many published studies such as Oliveira and Martins (2011), Chang, Hung, Yen and Lee (2012) as well as Oliveira, Thomas and Espadanal (2014) describing the role of top management support, which is considered a key driver in the adoption decision for technological innovations in MSMEs. According to all these literatures, there are three internal elements of organizational context that have been examined in relation to the adoption of new technologies among MSMEs. The three organizational elements are top management support, CEOs' innovativeness and past IS experience. Given this, we propose

H2: Internal organizational context influences Malaysian MSMEs' decision to adopt digital marketing

The environment context represents the third antecedents in the TOE framework that has been identified to impact the adoption of technology in MSMEs. The ICT adoption literature by Kannabiran and Dharmalingam (2012) suggested to look into the external environment context in which MSMEs are operating should help to understand ICT uptake within these types of businesses. In fact, a more recent study by Ainin, Parveen, Moghavvemi, Jaafar and Shuib (2015) believed that the arena in which an enterprise operates represents a primary stimulus for the adoption of innovations as organisations respond to changes in the external environment. The four environmental elements that have been identified to affect an organization's decision to adopt new technology are competitive pressure, customer pressure, government support and external IS support. Therefore, this study proposes

H3: External environmental context influences Malaysian MSMEs' decision to adopt digital marketing

3.0 METHODOLOGY

A survey questionnaire based on a comprehensive literature review and pilot test in 25 business organizations were utilized in this study. Upon finalizing the survey, a larger study was conducted using a simple random sampling technique. Out of the 400 randomly selected MSMEs, 31 respondents rejected the invitation to participate during the pre-notified stage. Hence, 369 responses were given the survey. Data collected shows that there were seven (7) non-usable responses with five (5) from postage and two (2) from e-mail respectively while one (1) response received via postage after the deadline which is considered as no response. Thus, the response rate was 99.7 per cent and 361 responses were valid for analysis, representing 98.1 per cent of completed rate respectively. The survey was conducted in Perak state because the data for the total population of MSMEs was available and considered accurate to perform simple random sampling technique. The questionnaires were emailed or posted to the respondents according to owner-managers' preferences.

4. RESULTS

4.1 Owner-managers' Profiles

In respect of gender characteristics of the owner-managers of the MSMEs who participated in this survey, the majority of the respondents were male representing 80.1 per cent or 289 respondents. The survey data also show a comparable number from a recent study by Ahmad, Suseno, Seet, Susomrith and Rashid (2018) which revealed that only 20.6 per cent of Malaysian MSMEs are owned or managed by females. This might be due to the characteristics of the Malaysian's cultural setting and traditions associated with the concept of women at work (refer to Table 1).

Table 1: Malaysian MSMEs owner-managers' demographic characteristics (n=361)

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Demographics	Frequency	Percentage
<i>Gender</i>		
Male	289	80.1
Female	72	19.9
<i>Age</i>		
Less than 25	8	2.2
25 to 34	85	23.5
35 to 44	161	44.6
45 to 54	80	22.2
55 to 64	26	7.2
65 and over	1	0.3
<i>Highest education level</i>		
No formal qualification	16	4.4
Primary school	0	0.0
Secondary school	25	6.9
Pre-university or diploma	72	19.9
Degree	198	54.8
Postgraduate - Master/PhD	50	13.9

In terms of age group, the result shows that respondents aged 35 to 44 years old comprised nearly half of the total respondents (44.6%) while owner-managers between the aged of 25 and 34 years was the second largest group followed by 45 to 54 years with 23.5 per cent and 22.2 per cent respectively. However, 7.5 per cent of the population is represented by the older generation aged above 55 years old compared to just 2.2 per cent of the younger generation aged below than 25 years old. These results are not surprising as recent statistics released by the SME Corporation Malaysia have indicated that the 35 to 44 age group is the dominant decision-makers in the country, suggesting a relatively mature-entrepreneurs population in this country (SME Corporation, 2015).

On the question of educational attainment, it is worthy to note that there is still a small portion of Malaysians did not have any formal educational qualification (4.4%) and secondary school leavers (6.9%), indicating a low educational background of decision-makers in the region. Gratefully, the data also shows that the educational level of those sampled is generally high. More than half (54.8%) of the respondents' highest qualification was at degree level and 13.9 per cent having Master or PhD while owner-managers with pre-university of diploma represents the second-highest group accounting 19.9 per cent of the population, indicating a well-educated decision-makers population in the Perak state.

4.2 Business Profiles

Among the participant enterprises, less than a year enterprise accounted for only a small proportion (6.7%) of the total sampled enterprises, while those which had been in business for one to three years and four to six years made up 16.6 per cent and 20.2 per cent of the sample, respectively. The vast majority were businesses that had been in business for more than six years (56.5%), indicating that MSMEs in the region is well-established. Table 2 below presents the relevant summary data.

Table 2: Malaysian MSMEs demographic characteristics (n=361)

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Demographics	Frequency	Percentage
<i>Age of business organization</i>		
Less than a year	24	6.7
1 to 3 years	60	16.6
4 to 6 years	73	20.2
More than 6 years	204	56.5
<i>Total number of employees</i>		
Less than 5	130	36.0
5 to 29	171	47.4
30 to 74	24	6.6
75 to 200	36	10.0
<i>Approximate annual sales</i>		
Less than RM300,000	82	22.7
RM300,000 and less than RM3 million	177	49.0
RM 3 million and less than 15 million	66	18.3
RM15 million and less than RM20 million	20	5.5
RM20 million and less than RM50 million	16	4.5
<i>Main business sector</i>		
Manufacturing	89	24.6
Services	206	57.1
Others	66	18.3
<i>Market area</i>		
Urban market	108	29.9
Rural market	20	5.5
National market	156	43.3
International market	77	21.3

Given the definition of Malaysian MSMEs based on a number of employees, the highest proportion (54%) of the sampled enterprises fell into the small-enterprises category with a number of employees between 5 to 74 staffs, while the other two categories, micro-enterprises (less than 5 employees) represent 36 per cent and medium-enterprises (75 to 200 employees) accounts for 10 per cent of the sample. This indicates that the sampled MSMEs in the region is led by small-size companies compared to the previous study by Aman et al. (2011) who revealed that micro-enterprises are the majority for Malaysian MSMEs if based on number of full-time employees.

As referred to the other definition of Malaysian MSMEs based on approximate annual sales, the highest proportion (67.3%) of the sampled enterprises fell into the small-enterprises category with an approximate annual income of between RM300,000 and less than RM15 million, while the other two categories, micro-enterprises (less than RM300,000) and medium enterprises (between RM15 millions and less than RM50 million) account for 22.7 per cent and 10.0 per cent of the sample, respectively. Similarly, these results also indicate that the sampled MSMEs in the region is led by small-size companies if based on approximate annual sales income.

As far as the make-up of the sample by industry sector is concerned, the survey results indicate that the sample comprised MSMEs from manufacturing (24.6%), services (57.1%) and others (18.3%), demonstrating a similar proportional record by SME Corporation (2015).

Which regards to the market area, the survey data reveals that 78.7 per cent of the surveyed MSMEs focused their business activities inside the country, with 29.9 per cent having an urban scope, 5.5 per cent at rural areas and the balance 43.3 per cent are reachable nationwide. It can be also observed that the percentage of enterprises catered on global markets accounted only 21.3 per cent, suggesting that Malaysian MSMEs are more likely to cater on domestic and national markets than to expand activities in globally. This may imply that MSMEs in Malaysia are highly dependent on local and national markets.

4.3 Reliability Test

Table 3: Reliability test results

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TOE Constructs	No. of Items	Cronbach's alpha
Technological	15	0.942
Organizational	7	0.918
Environmental	8	0.837

From Table 3, the Cronbach's alpha coefficients for all the constructs exceeded 0.70, with the coefficients' score ranging between 0.837 to 0.942 indicating good internal consistency and hence reliable constructs (Palant 2013).

4.4 Hypotheses Testing

Binary Logistic Regression (LR) was performed to assess the impact of the three TOE antecedents that influence the adoption of digital marketing by Malaysian MSMEs. Table 4 below presents the findings related to each independent variable included in the analysis and explains its contribution to the overall model results by calculating the effect of changes to each independent variable.

The full model containing all predictors was statistically significant, $(3, n = 361) = 126.934, p = 0.000 < 0.001$, indicating that the model was able to distinguish between respondents who adopted and did not adopt digital marketing in their businesses. The model as a whole explained between 29.6 per cent (Cox and Snell R square) and 39.5 per cent (Nagelkerke R squared) of the variance in digital marketing adoption, and correctly classified 71.5 per cent of cases. Similarly, the Hosmer-Lemeshow Goodness of fit test is less than 0.05 indicated a good fit of the model. Out of the three variables tested, only technological and organizational of the independent variables were statistically significant towards the contribution of the model on the adoption of digital marketing applications among the surveyed MSMEs, as both yielded a p-value of less than 0.05.

Table 4: Results of LR Analysis (n=361)

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Independent variables	β	S.E	Wald	Sig. (p-value)
Technological	1.504	0.382	15.496	0.000
Organisational	0.778	0.244	10.155	0.001
Environmental	-0.052	0.240	0.048	0.827
Constant	-8.092	0.991	66.659	0.000

Notes:
 Omnibus = 0.000;
 Hosmer & Lemeshow = 0.000;
 Cox & Snell = 0.296;
 Nagelkerke = 0.395;
 Dependent variable: 0 = Non-adopter; 1 = Adopter (Dummy)

Technological context ($\beta = 1.504$, $p = 0.000 < 0.05$) emerged as the strongest predictor that influences the adoption of digital marketing by Malaysian MSMEs. As expected, it was positively related, with a positive sign coefficient, suggesting that technological advancement plays a key role in the lack of adoption of digital marketing by MSMEs in Malaysia. This result accepts that hypothesis (H1) is corresponding to this factor.

For organizational context, the results suggest that it is also statistically significant ($\beta = 0.778$, $p = 0.001 < 0.05$) and provide a positive relationship towards adopting digital marketing. This indicates that the internal organisational factor plays an important role in the decision of MSMEs on adopting digital marketing, suggesting that its corresponding hypothesis (H2) was therefore supported.

Surprisingly, the result shows that environmental context ($\beta = -0.052$, $p = 0.827 > 0.05$) was found to be statistically insignificant in relation to the adoption decision. Meaning that this variable has no role in the model and no effect on the dependent variable. Thus, the findings lend no support for hypothesis (H3).

Table 5: Summary of hypotheses test

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Antecedents	Hypotheses	Hypotheses Statements	Results
Technological Context	H1	Technological context influences Malaysian MSMEs' decision to adopt digital marketing.	Supported
Organizational Context	H2	Internal organizational context influences Malaysian MSMEs' decision to adopt digital marketing.	Supported
Environmental Context	H3	External environmental context influences Malaysian MSMEs' decision to adopt digital marketing.	Rejected

4.0 DISCUSSION

Building on the research findings and data analysis, the study has identified and determined two statistically significant antecedents which are technological and internal organizational contexts that influence the application of digital marketing by Malaysian MSMEs, demonstrating the applicability and usefulness of the TOE framework model for studying the adoption of digital marketing applications among micro, small and medium enterprises in Malaysian. However, the study has examined and found a non-significance relationship between external environmental context towards the decision to adopt digital marketing applications by MSMEs in Malaysia.

The finding of the present study has confirmed that the technological context was found to be the strongest antecedent (Wald =15.496) to influence Malaysian MSMEs to adopt digital marketing applications in their businesses. In fact, the findings from this research agree to prior literatures such as Ramdani et al. (2013), Alshamaila (2013) as well as He et al. (2017) which have found technological context to be a positive predictor across a range of technology application among MSMEs in developed Western countries. From a developing country point of view, this position is further supported by the findings of a study by Parveen et al. (2015) on the factors influencing Facebook adoption among MSMEs in Malaysia, which showed that advancement of Information System (IS) technology plays a significant role in the decision to adopt Facebook among the sampled MSMEs.

However, the examined positive significance of technological context contradicts with that of Shaharudin, Omar, Elias, Ismail, Ali and Fadzil (2012) investigation of factors influencing ICT adoption among Malaysian MSMEs. This may be related to differences in the technology contexts of the two groups of studies. For the present study, for example, the finding can be attributed to the fact that the latest digital marketing innovations such as social media platforms are one where the tools and applications are simplified with user-friendly designs that can be easily managed with no need of sophisticated technical skillsets and experiences. This has been found to be the case in the past with different digital marketing and IS innovations but similar in functionality, such as Enterprise Resource Planning (ERP) and Customer Relationship Management (CRM) as reported by Kannabiran and Dharmalingam (2012) as well as Cesaroni and Consoli (2015).

As expected, the internal organizational context was found to be a significant antecedent between adopters and non-adopters of digital marketing among Malaysian MSMEs. This finding reflects the recent study by Ramayah et al. (2016) that explained for the positive significance of internal organizational context that,

Malaysian MSME owner-managers may provide additional attention and strong commitment from their side to adopt digital marketing applications. The finding is also in line with other literatures such as Chang et al. (2012), Oliveira et al. (2014) as well as Ndekwa and Katunzi (2016). Which stress that top management and CEO's innovativeness within the organizational context is key for ICT adoption. Top management support generally comes in the form of committing financial and organizational resources and engaging in the adoption decision process. This may have been associated with the affordable amount of initial investment required to adopt non-complex digital marketing applications such as social media platforms, given that this type of digital marketing innovation is cheaper and does not require additional skill sets to begin with.

However, a remarkable disagreement also exists between the finding of this study and those of many previous studies, such as Kuan and Chau (2001), Lee et al. (2007), Lin and Lin (2008) as well as Alshamaila (2013). The main difference in the finding from the present study and those mentioned above may be attributed to the fact that previous ICT tools such as ERP and CRM are more complex and expensive technologies for smaller businesses to partake during that particular time. This is important as MSMEs have limited financial and technical resources that inhibit the uptake of more sophisticated technologies. Hence, many smaller enterprises at that time therefore face difficulties in dedicating the resources required for the adoption and use of more complex technologies.

Despite being essential for the adoption of various innovations in the MSME setting, unexpectedly, in this study, external environmental context such as competitive pressure, customer pressure, government and external IS support were found to be insignificant to influence the decision of Malaysian MSMEs to apply and adopt digital marketing. This result does not reflect the findings of Saffu et al. (2008) and Talukber et al. (2013), who identified external environmental context is the significance for the adoption of IS innovations in MSMEs. This finding also did not provide support for the recent observation by Rahbi and Abdullah (2017) that MSMEs' owner-managers are lack of strong IT backgrounds to assess the significance of ICT investment for their businesses and therefore require external support such as ICT service providers and digital marketing firms. It is possible, therefore, that present sampled MSME owner-managers do not require to seek ICT related advice and support as over 90% of the adopters were using social media platforms that are simple, easy to use and to learn.

These findings also reject those obtained by many researchers such as Lippert and Govindarajulu (2006), Rahayu and Day (2015) as well as the recent study

by Lim et al. (2017) indicating that MSMEs are likely to adopt new technologies with conducive business surroundings. The study's finding also contradicts those of Ongori and Migiro (2010) as well as Omar et al. (2011) which reported that appropriate access to basic ICT facilities such as the Internet and high-speed broadband was associated with the adoption of ICT. One possible explanation for the insignificance of external environmental context in this study is that over 78 per cent of the sampled MSMEs just focussed their business activities inside the country, with 29.9 per cent having an urban scope, 5.54 per cent at rural areas and the balance 43.2 per cent are reachable nationwide indicating that over 51 per cent of Malaysian MSMEs who are non-adopters are still running their business via the conventional brick and mortar concept and yet to explore the competitive global markets. Nevertheless, since over 51% of the investigated MSMEs were non-adopters, this result should be interpreted with caution. It is felt that further research is needed to confirm these findings.

5.0 CONCLUSION

The findings of the research have validated that technological and internal organizational contexts may influence the adoption decision among Malaysian MSMEs while external business environment does not have any influence on it. This study has also contributed to a better understanding of the relationship between technological, organizational and environmental factors towards digital marketing application in the Malaysian MSMEs context. The resulting model could be used to guide Malaysian MSMEs in their application of digital marketing tools and technologies by helping them to identify and understand the most significant TOE factors that influence the decision to adopt and apply these emerging technologies. From a model or research-findings perspective, this study has highlighted the importance of assessing technological, organizational and environmental contexts regarding the adoption decision of new and innovative technologies by MSMEs such as digital marketing applications. This is, thereby encouraging academics, particularly those interested to study the adoption of new technologies in MSMEs, to pay attention to the potential impacts of the three contexts of the TOE framework. Lastly, the study has also produced a model, which assists in understanding the adoption of digital marketing technologies in the Malaysian MSMEs based on the three contexts of the TOE framework. In this respect, the study reaffirms that applicability of TOE framework to study the IS innovations adoption in an organizational setting in developing countries.

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