e-Bangi Faculty of Social Sciences and Humanities Universiti Kebangsaan Malaysia
Journal of Social Sciences and Humanities

Vol. 16, No.3 (1-12), ISSN: 1823-884x

PERCEIVED TECHNOLOGY TRUST AMONG BUSINESS OWNERS: A STUDY OF E-BUSINESS ADOPTION IN SARAWAK'S SMES

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ABSTRACT

E-Business platform is a strategic tool that provides many SMEs a platform turn their business from traditional into the advance business model. Due to the rapid growth of the Internet, it has led to increasing interest in how to inspire the owner or manager of SMEs in Sarawak. This paper examines the influence of privacy and security factors on attitude towards adoption which directly predicts e-business adoption in Sarawak's SMEs. The motive of this study was the limited studies related to e-business adoption by SMEs, especially in Sarawak. Furthermore, most e-business studies focused on the acceptance level of the e-business adoption instead of the owner's or manager's attitude towards the adoption. Thus, this limits the understanding about e-business adoption by SMEs in Sarawak, as well as the privacy and security factors that influenced the attitude towards the rate of the e-business adoption in Sarawak's SMEs. SPSS and SmartPLS 3.0 are used as the main analytical tool. Data were collected from 163 Sarawak's SMEs and purposive sampling method was used for the research. The findings revealed that privacy and security factor is significant to the adoption attitude of Sarawak's SMEs in the adoption of e-business platform. The findings extended the current understanding of e-business adoption by Sarawak's SMEs. The results will be useful to SMEs, government, and policymakers devising e-business security and privacy policies. Several implications, limitations of the study, and the conclusion are outlined.

Keywords: Privacy; Security; Attitude towards e-Business Adoption; e-Business Adoption in SMEs; Sarawak.

INTRODUCTION

Economies in the world (Karadag 2016), as well as Malaysia. Although SMEs are a strong stimulus to the economy, they generally lack national geographic location and unable to provide immediate services in 24 hours a day. The adoption of e-business technology has improved these conditions and allowed SMEs to enter larger markets without physical existence. Likewise, the use of Internet helps to improve business processes and productivity, as well as improving communication with customers, suppliers, and all businesses related partners.

In national economic census released by the Department of Statistics Malaysia (2016), Sarawak's SMEs accounted 6.7 per cent from the total SMEs in the country and is the sixth-highest number of SME establishments in the country. Abang Johari, the Chief Minister of Sarawak said, "Sarawak is on the right path to achieving its goal to become a developed state with the inception of several initiatives to enhance the state's potential in digital economy" at the launch of the Business Excellence Seminar and Forum 2017 (New Straits Times 2017). This emphasised that the state government are encouraging SMEs to exploit technology in their business modules.

However, SMEs in developing countries such as Malaysia, have not fully capitalised

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on technological developments to expand their businesses beyond their traditional markets (Abroud, Yap, Muthaiyah & Yong 2015). Further, there is important to have a better understanding of the determinants of e-business usage which may be related to technology trust (Apau & Ahmad 2011) on the attitude towards the adoption of e-business in SMEs.

Hence, this study aims to gain a deeper understanding of e-business adoption for SMEs in Sarawak State. Specifically, it investigates the technology trust has a positive influence on attitude towards adoption which directly predict e-business adoption. An attempt is made to answer the following questions:

i. Do privacy and security have a positive impact on attitude towards adoption which directly predicts e-business adoption in SMEs?
ii. Does attitude toward adoption has a direct and positive impact on behaviour intention to adopt the e-business in SMEs?

THEORETICAL FOUNDATIONS AND DEVELOPMENT OF HYPOTHESIS

e-Business and Adoption

"e-Business" is generally defined as buying and selling products or services over the Internet, servicing online customers, collaborating with business partners, conducting e-learning and marketing transactions online (Turban, Outland, King, Ting & Turban 2017). In the literature, e-business has also been described as the use of an electronic platform to conduct business (Mazzarol 2015). These definitions are consistent with the definition of DTI (2000) in which e-business is defined as an integration process of business activities with Information and Communication Technology (ICT) (Wong 2013). Internet has always been a good channel to deal with people from around the world. This is known as globalisation and defined as increasing interconnectedness of the world through flow of information, capital, and people facilitated by trade and political openness as well as information technology.

Besides, past study defined e-business as emphasis on customer value and enhance organisation's profit with the advantages of technology (Omar, Ali & Achan 2015). The application of e-business will be adopted before the advantages are being realised. The adoption of e-business by SMEs has increased the competitive advantage for modern companies. SMEs have unique characteristics that can help them compete with larger companies by adopting modern technologies in their business operations. They are dynamic organisations and expected to adapt to modern technologies easily. The SMEs are more flexible, adapt to changes faster, better development and acceptance on new ideas than large organisations (Abdullah, Wahab & Shamsuddin 2013).

Furthermore, in SMEs the decision for operational and strategic can be made by the owner or manager of the company. Thus, the attitude of the owner or manager serves as a driving force for the investment and acceptance for the e-business. Additionally, there are quite often for SME's owner or manager to responsive on e-business goals establishment and determine the potential of e-business in their company. Due to these characteristics of SMEs, the introduction of e-business and rapid growth of the country become more and more important. There are ample evidences that SMEs are involved in technological innovation (Ahmad, Abu Bakar, Mohamed Faziharudean & Mohamad Zaki 2015) as many studies have examined the adoption of e-business in recent decades.

Attitude towards e-Business

Several scholars have investigated users' perceptions towards new or existing software or other technical solutions in employed Technology Acceptance Model (TAM) (Okadapau & Emaase,

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2016). The model explained the perception of users or potential users on how to assess the solution and its general applicability. TAM concluded that the user's intention to adopt technology depends on his or her attitude toward technology use (Carlet 2015). Moreover, attitude is known as learned predisposition by an individual to respond towards an object in both a positive or negative way. In turn, attitude is also determined by eliminating the risk of vulnerability. In this research study, attitude towards e-business is based upon the technology trust in e-business context. TAM further described that users must be satisfied with the technology they are deploying, which may expect some external aspects that affect the acceptance that are beyond users' control. Besides, there are widespread evidences from Fillis, Johansson, and Wagner (2003), Okadapau and Emaase (2016), and Rosnafisah, Salbiah, and Mohd Sharifuddin (2010) that emphasise that the owner or managers' attitudes towards e-business are among the main factors to ensure that e-business is successfully adopted, especially for SMEs.

Privacy and Attitude towards Adoption

In this research, privacy is defined as freedom from unauthorised intrusion or disclosure of information about an individual (Zheleva & Getoor 2011). Additionally, protection of data from being retrieved by people illegally is referring to the privacy of the entire users. In such case, the main concerns from both, clients and owners, are highly required to shield themselves from being involved in such problems. In business, transactions usually require the exchange of large amounts of company data and personal data of customer. For instance, unauthorised access to sensitive information about business, customer names, operations, pricing, trading terms, financial status, and other competitive transactional information (Vakeel, Das, Udo & Bagchi 2016). This is also necessary for e-business transactions because the data involved in transactions may be shared or even sold to other businesses (Teece 2010). It is shown that privacy is often associated with the use if user's personal information. Thus, users may be hesitated to participate in e-business due to privacy concerns. As a result, it formed a barrier to the development of e-business. Therefore, in response to their user's privacy concerns, e-business company will have to propose a solution to present unauthorised data access hence their actions will influence the attitude towards the adoption which directly predicts e-business adoption in SMEs. On the basis of the preceding argument, it is proposed that:
H1: Privacy has positive impact on attitude towards adoption which directly predicts e-business adoption in SMEs.

Security and Attitude towards Adoption

In Malaysia, SMEs are lacking in information about security awareness which results in the haphazard management of their information and digital assets (Apau & Ahmad 2011). This could be explained as the owners or managers of SMEs fear the potential risks and threats posed by the Internet (Alam, Omar, & Nik Hisham 2011) have caused the lost of trust and confidence. For instances, the owner or manager might concern about the loss of their financial data, financial losses related to intrusion and it can result in the bad reputation. Hence, most of the businesses review data on security breaches are irreparable and there is no guarantee on the restoration of data lost or the company's reputation (Monsef & Gidado 2011). This issue becomes very important when considering Internet-based situations. Moreover, for technological businesses to achieve similar levels of acceptance as traditional businesses, its technological-related security issues among SMEs need to become a built-in part for e-business adoption. Therefore, companies with high tolerance in technological risk may advance their adoption of technology such as e-business platform. Based on the discussion above, the

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following hypothesis is formulated:
H2: Security has positive impact on attitude towards adoption which directly predicts e-business adoption in SMEs.

Attitude towards Adoption on E-business Adoption in SMEs

Attitude has a direct effect beyond a positive impact on intentions (Lai, 2017) because it is an individual's positive or negative judgment of performing the behaviour (Dubihlela & Kupangwa, 2016). Meanwhile, an individual's perception of the world is changed by their attitude. Davis (1989) has described the users' behavioural intention in technological practice is determined by the attitude of the users. According to Okadapau and Emaase (2016), attitudes are directly related to the user's intention to use a technical system. Following the literature, this research study assumes the owner or manager's attitude will be positively related to behavioural intention in e-business adoption in SMEs. From this, it is hypothesised that:
H3: Attitude towards adoption has positive impact on behavioural intention to adopt the e-business in SMEs.

RESEARCH METHODOLOGY

Samples and Procedure

This research is conducted among e-business company which being listed in the in Sarawak, which located in the West Malaysia and a Malaysian state on Borneo Island. In 2015, Sarawak contributed approximately ten percent to national economic growth that has been one of the highest Gross Domestic Product (GDP) contributor in Malaysia (Department of Statistics Malaysia 2016). This strongly proves that Sarawak has huge potential of its economic and financial standing as well as developments.

Furthermore, this research was specifically targeted to owners of SMEs or managers who are involved in the decision-making process of the company; the choice of SMEs are based on the fact that majority of the companies have used a certain form of e-business platform. Meanwhile, SMEs have access to the Internet and experienced the electronic platform to conduct business. This is due to the fact that practiced e-business users have a different perspective or attitude towards all aspects of the use of e-business than non-experienced users. The sample size was 163, which fulfilled Roscoe's (1975) rule of thumb (Sekaran & Bougie 2013). The researcher employed non-probability sampling technique – the purposive sampling method in order to select the samples. The purposive selected sample was under the category of owner or manager in the SMEs that have experienced e-business platform at least once for their business. In particular, this is a useful method to reach a target sample quickly where proportionally sampling is not the main concern in this study.

The quantitative survey method is used to collect the primary data in this study. This is because the quantitative approach is measuring the incidence of various views and opinions of the owners of SMEs or managers who involved with the decision making the process of the company as chosen sample to aggregate the results. Besides, the quantitative research approach involves a sizeable representative sample of the population and a formalized procedure for gathering data. Therefore, this approach is a cost-effective and efficient method to collect data from a large sample.

The data were gathered through a set of questionnaires which consisted of three sections: section A, the construct measurement of the adoption of e-business, attitude towards adoption and its determinants, with 21 items; section B, the demographic profile includes gender, age category, and the highest qualification of the respondents; and section C, the

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general information about the enterprise. Respondents were asked to complete the questionnaire if they are involved with the decision-making process and use certain forms of e-business platform. All returned questionnaire was confidentially-guaranteed. In order to develop multi-item of constructs, the researcher undertakes a prudent review of the literature. A 7-point Likert-scale was employed for multi-items of each dimension and it was more fine-grained scale, each rating assigns a corresponding weight as 1-Strongly Disagree, 2-Disagree, 3-Slightly Disagree, 4-Neutral, 5-Slightly Agree, 6-Agree and 7-Strongly Agree. This makes conversion on respondent opinion into numerical data to analyze.

RESEARCH FINDINGS

The data are analysed using SmartPLS 3. PLS is the statistical technique in data analysis, delivers comprehensive results to researchers, and appropriate for developing large complex models. Besides, it is evaluating a measurement model and structural model with the purpose of minimising error variance (Ifinedo, 2011). In terms of distribution assumptions, PLS path modeling is less restrictive and requires smaller sample size.

The researcher conducted descriptive statistics to obtain general information of the respondents. Of the total 163 respondents, females represented 85 (52 per cent) and males 78 (48 per cent). In terms of age, the majority of the respondents fell into the 25 to 29 years old category. The sample also consisted of 45 respondents (28 per cent) from the 30 to 39 years old group while the respondents in the age of 40 to 49 years old and below 25 years old shared the same figure, 20 per cent (n=32). Only six respondents were in the age category of 50 and above.

These respondents were experienced in e-business technology and involved with the decision-making process in their company. In terms of highest education qualification level, the highest percentage were diploma holders (33 per cent, n=54), followed by secondary qualification (SPM/STPM) (30 per cent, n=49), bachelor degree holders (29 per cent, n=48), primary qualification (UPSR) (six per cent, n=9), and postgraduate holder (two per cent, n=3). Educational attainment indicated that most of them were cultured and knowledgeable.

Besides capturing the general information of the enterprise, 66 per cent of enterprises (n=107) were associated with private limited company, 22 per cent (n=36) were registered as partnership, and 12 per cent (n=20) were registered as sole proprietorships. The industry in which the enterprise operates may be a factor in the adoption of e-business technology by companies in the industry. Thus, 88 per cent (n=143) of the enterprises were in service and other service industry and manufacturing industry made up 12 per cent (n=20) of enterprises.

Among the participated enterprises, business which have operated less than a year are accounted only a small proportion, (two per cent, n=3) of the total sampled enterprises while the majority were having been operated their business for more than five years (62 per cent, n=102). Comprehensively, enterprises that involving in business for one to three years and three to five years assemble as 15 per cent (n=24) and 21 per cent (n=34).

Assessment of the Measurement Model

The confirmatory factor analysis (CFA) through PLS was used to test the measurement model, which including the convergent validity and discriminant validity. Convergent validity was obtained by Composite Reliability (CR) and Average Variance Extracted (AVE). CR is used to measure the degree to which items are free from random error and can provide consistent results. The value of composite reliability can vary between 0 and 1, with a value cut off point of 0.70 recommended by Hair, Ringle, and Sarstedt (2013). AVE is consists of the variance of its indicators captured by the construct relative to the overall amount of variance, including the

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amount of variance attributable to measurement error. An AVE value needs to be at least 0.5 in order to indicate sufficient convergent validity. However, when the square root of AVE exceeds the correlation, there is discriminant validity.

As presented in Table 2 it is indicated that all CR fulfilled the recommended value (0.7) and Cronbach's alpha values exceeded the ideal value (0.7) as recommended by (Ramayah, Cheah, Chuah, Ting & Memon 2018). The results listed in Table 2 show that the AVE of each model construct exceeded the acceptable level of 0.50 and the item loadings range for each construct was 0.713 to 0.890, which exceeded the acceptable value of 0.50 as suggested by Hair, Ringle & Sarstedt (2013). In conclusion, the model construction of this study achieves good convergent validity (Bagozzi & Yi 1988) with the indication that all indicators have a higher load on the hypothesis factor (see Table 1). Additionally, to establish discriminant validity, the square root of the AVE for a given construct is compared with the correlations between that construct and all other constructs (Voorhees, Brady, Calantone, & Ramirez 2016) (see Table 4).

Table 1: Loading and Cross Loading

	E-Business Adoption in SMEs	Attitude towards Adoption	Privacy	Security
Adop_4	**0.870**	0.536	0.424	0.527
Adop_5	**0.900**	0.549	0.396	0.518
Adop_6	**0.852**	0.595	0.436	0.475
Att_1	0.521	**0.776**	0.530	0.619
Att_2	0.537	**0.881**	0.501	0.579
Att_3	0.519	**0.827**	0.441	0.497
Att_4	0.469	**0.791**	0.527	0.600
Att_5	0.581	**0.825**	0.578	0.566
Priv_1	0.374	0.486	**0.794**	0.516
Priv_2	0.408	0.549	**0.829**	0.544
Priv_3	0.210	0.319	**0.720**	0.380
Priv_4	0.360	0.552	**0.802**	0.522
Priv_5	0.489	0.528	**0.802**	0.667
Sec_1	0.483	0.553	0.628	**0.804**
Sec_2	0.550	0.588	0.561	**0.815**
Sec_3	0.425	0.487	0.523	**0.816**
Sec_4	0.485	0.622	0.527	**0.850**
Sec_5	0.407	0.583	0.518	**0.786**

Note: **Bold values are loadings for items that are above the recommended value 0.5.**

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Table 2: Results of Measurement Model

	Measurement Items	Cronbach's Alpha	Factor Loadings	CR [a]	AVE [b]
e-Business Adoption in SMEs	Adop_4	0.846	0.870	0.907	0.764
	Adop_5		0.900		
	Adop_6		0.852		
Attitude towards Adoption	Att_1	0.878	0.776	0.911	0.674
	Att_2		0.881		
	Att_3		0.827		
	Att_4		0.791		
	Att_5		0.825		
Privacy	Priv_1	0.851	0.794	0.892	0.625
	Priv_2		0.829		
	Priv_3		0.720		
	Priv_4		0.802		
	Priv_5		0.802		
Security	Sec_1	0.873	0.804	0.908	0.663
	Sec_2		0.815		
	Sec_3		0.816		
	Sec_4		0.850		
	Sec_5		0.786		

Notes **: [a] Composite Reliability (CR) = (square of the summation of the factor loadings) / {(square of the summation of the factor loadings) + (square of the summation of the error variances)}**

[b] Average Variance Extracted (AVE) = (summation of the square of the factor loadings)/ {(summation of the square of the factor loadings) + (summation of the error variance)}

Table 3: Summary results of the Model Constructs

Model Construct	Measurement Item	Standardised estimate	t-value
Attitude towards Adoption	Adop_4	0.870	29.110
	Adop_5	0.900	39.767
	Adop_6	0.852	38.050
E-Business Adoption in SMEs	Att_1	0.776	22.824
	Att_2	0.881	32.786
	Att_3	0.827	20.639
	Att_4	0.791	22.573
	Att_5	0.825	25.974
Entrepreneur Characteristics	Priv_1	0.794	19.876
	Priv_2	0.829	26.369
	Priv_3	0.720	11.185
	Priv_4	0.802	24.486
	Priv_5	0.802	21.573
Resource-Based Factors	Sec_1	0.804	23.320
	Sec_2	0.815	20.944
	Sec_3	0.816	27.613
	Sec_4	0.850	36.606
	Sec_5	0.786	23.921

Note: **Diagonals represent the square root of the average variance extracted while the other entries represent correlations.**

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Table 4: Discriminant Validity of Constructs

Constructs	E-Business Adoption in SMEs	Attitude towards Adoption	Privacy	Security
E-Business Adoption in SMEs	**0.874**			
Attitude towards Adoption	**0.642**	**0.821**		
Privacy	**0.480**	**0.631**	**0.790**	
Security	**0.579**	**0.699**	**0.677**	**0.814**

Assessment of Structural Model

Table 5 and Figure 1 displayed the summary of results of answering the developed hypotheses testing in this research study. The researcher calculated path coefficient (β) and t-statistics (t-value) for each of the proposed hypotheses by testing the bootstrapping. The findings showed that the privacy was positively related to attitude towards e-business adoption. (β = 0.292, t-value = 3.635); thus supporting H1. The results also gave a standardised Beta, 0.291 from privacy to attitude towards adoption with t-value = 3.635, standardised Beta, 0.506 from security to attitude towards adoption with t-value = 7.145 and standardised Beta, 0.645 from attitude towards adoption to e-business adoption in SMEs with t-value = 9.903. Thus, the findings implied that H1, H2, and H3 were supported**.**

Figure 1: Results of the Path Analysis

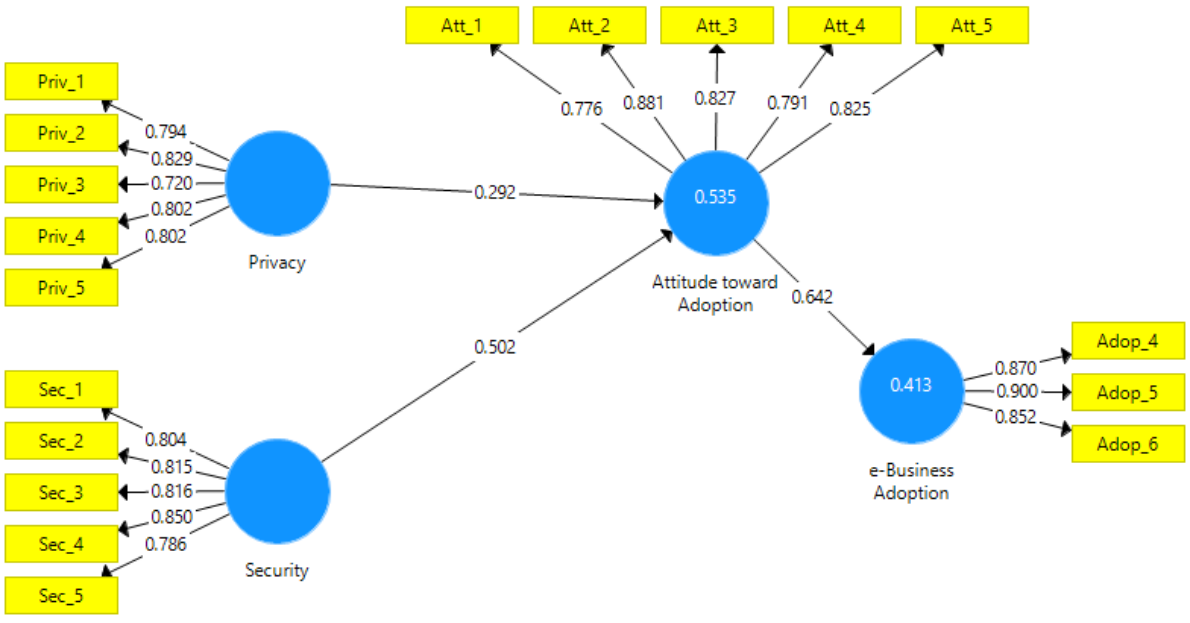

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Table 5: Path Coefficient and Hypothesis Testing

Hypothesis	Relationship	Coefficient	t-value	Decision
H1	Privacy -> Attitude towards Adoption	0.292	3.564**	Supported
H2	Security -> Attitude towards Adoption	0.502	7.007**	Supported
H3	Attitude towards Adoption -> E-Business Adoption in SMEs	0.642	10.400**	Supported

Note: * P<0.01, p<0.05

DISCUSSION

The concept of e-business adoption was briefly discussed. A survey of 163 SMEs showed their attitude about adopting e-business platform in their business. The survey results show that SMEs are very interested in e-business adoption which enables them to stay competitive and improve accessibility and flexibility. SMEs see these benefits as key drivers of adopting e-business platform. However, the rapid growth of enterprise used on the Internet raises questions about privacy and security. As a result, the impact of privacy and security has a positive impact towards adoption attitude which directly predicts e-business adoption in SMEs. The results show security and privacy are important determinants towards the attitude to adopt e-business platform in these SMEs. This was explained as the owner or manager of SMEs fear the risks and threats posed by the Internet which caused SMEs to lose trust and confidence. For instance, SMEs need to protect all forms of electronic communications including payment platforms to increase customers' confidence and the volume of business handled through the Internet. Their concern is well reasoned to influence that attitude towards adoption which directly predicts e-business adoption in SMEs. The Sarawak government should play an important role for improvement that must be made to encourage the spread of technology adoption in the area.

LIMITATIONS

This study suffer from some limitations. First, it lacks diversity in terms of the sample used. The survey concentrated on SMEs in Sarawak only and does not represent the whole of Malaysia. Second, the sample size of this study achieves the acceptable level of 163 and fulfills Roscoe's role (1975) (Sekaran & Bougie, 2013). However, future research should maximise samples to generate higher generalisation of the findings. Third, the quality of data used in this study may be doubted because of the way the questionnaire was answered by respondents. In this study, respondents were free to think of any e-business platform before filling out the questionnaire. In this regard, a future researcher has to classify clearly what e-business platform to use in order to avoid selecting inaccurate variables.

IMPLICATONS

The findings in this study are expected to add to the body of knowledge on e-business adoption behaviour. It provides helpful guidelines for SMEs in Malaysia, specifically Sarawak. Presently, there is limited literature that focuses on the e-business adoption and its intention amongst SMEs in Sarawak. Due to this, it is important for the government to understand attitudes and behaviours in order to encourage more SMEs to involve technology in their business modules. Current research intends to generalise awareness of the e-business platform among SMEs. Consequently, the adoption intention of e-business platform will be improved

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and, furthermore, perceptions towards computer use will be positive. The findings also reveal to Sarawak's entrepreneurs to help improve their entrepreneurial projects. With effective use of new technologies, Sarawak's entrepreneurs are able to start their businesses in a short period of time. Indeed, the volume of e-business has increased because of the ability to conduct business more quickly and across the country.

CONCLUSION

The analytical results indicated that privacy and security were significantly linked and contributed to attitude towards adoption which directly predicts e-business adoption in SMEs. The results of the study were added to the body of literature in developing the antecedents of e-business adoption in Malaysia. This work also contributed to a better understanding of the determinants of e-business adoption and intention among SMEs that led to technology in the country. Generally speaking, it is to help the government to understand what influences SMEs' attitude, as well as ways to encourage them to become involved with the Internet. The generalised findings will also help SMEs to implement consistent technology tools to boost the economy.

ACKNOWLEDGEMENT

Nobody has been more important to me in the pursuit of this project than the members of my family. I would like to thank my parents, whose love and guidance are with me in whatever I pursue. They are the ultimate role models. Further, I would like to express my deepest and unparalleled gratitude to my supervisor, Associate Professor Dr Winnie Wong Poh Ming for her enthusiasm, direction, invaluable guidance and priceless time throughout this study. Dr. committed herself, patient in answering my questions, constructive comments, constantly guided me and never stresses me in the study.

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