

# E-Commerce adoption among small and medium enterprises in Melaka

Y. Arshad<sup>1</sup>, S.N. Syed Ibrahim<sup>2</sup>, W.P. Chin<sup>3</sup>, S. Mohamad Sharif<sup>4</sup>, N. A. Aziz<sup>5</sup>

<sup>1, 3, 4, 5</sup> Faculty of Technology Management and Technopreneurship, Universiti Teknikal Malaysia Melaka, Hang Tuah Jaya, 76100 Durian Tunggal, Melaka, Malaysia

<sup>3</sup> Faculty of Accounting, Universiti Teknologi Mara Malaysia, Jasin Campus, Melaka, Malaysia

\*Corresponding e-mail: ayusri@utem.edu.my

**Keywords:** E-commerce; small and medium enterprises; Malaysia

**ABSTRACT** – Nowadays, the numbers of small and medium enterprises (SMEs) that use e-commerce systems are on the rise. Many have been influenced by the efficiency of internet and have adopted it into their businesses. Thus, the aim for this research is to study the factors that affect the adoption of e-commerce in SMEs in Melaka. A survey has been conducted among the SMEs at Melaka to identify the relationship between five dimensions (Perceived Ease of Use, Security, Relative Advantage, Perceived Compatibility, and Top Management Support). Results showed the significance of the dimensions proposed to the adoption of e-commerce in SMEs at Melaka. This research is useful for SMEs and other organizations to determine important factors when considering of adopting e-commerce into their business. Recommendation for future research is researcher can expand other factors that affect the adoption of e-commerce into their business.

## 1. INTRODUCTION

According to Pham et al. [9], e-commerce has been making significant contributions to reduction in costs of doing business, improved product or service quality, new customer and supplier penetration, and generation of new ways or channels for product distribution. All the benefits not only can be achieved in large company but also in SMEs. E-commerce is developing in the world and influencing all industries. This phenomenon has been expanding because of using the Internet worldwide according to Elahi et al. [4].

The main objectives of this paper are first, to study the key factors influencing the adoption of e-commerce among SMEs. Second, to define the rankings for these factors towards e-commerce adoption among SMEs and lastly to determine the most important factors on the determinants of e-commerce adoption among SMEs.

In this study, the researchers focus on the factors of e-commerce adoption among SMEs in Melaka. The research is mainly to identify the key factors of e-commerce adoption for SMEs. It is intended that the findings of the study contributes towards better implementation of e-commerce among SMEs not only in Malaysia but all over the world.

## 2. METHODOLOGY

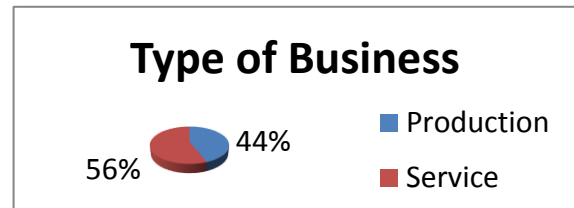
The five dimensions of the factors of e-commerce adoption among SMEs in Melaka have been selected to be identified of their contributions towards

adoption. In this study, the researchers choose quantitative research method as the methodological method through questionnaire to collect data from respondents as in previous study [2-3]. Targeted respondents are the SMEs at Melaka who adopt e-commerce. The questionnaire distributed in this study is used to measure the five dimensions stated in the theoretical framework. 200 questionnaires were collected of 219 distributed.

## 3. RESULTS AND DISCUSSION

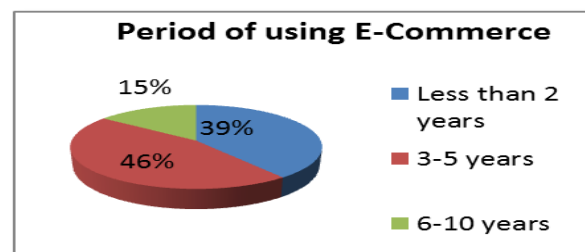
### 3.2.1 Demographic

First, the researchers present the findings on demographic analysis of respondents.



**Figure 2** Types of Business

Figure 2 above shows the frequency and percentage of respondent demographic of type of business. Among 200 respondents, the total numbers of respondents that are running production sector business is 88 respondents (44%). The total numbers of respondents that are running service sector business is 112 respondents (56%).



**Figure 3** Period of using e-commerce

Figure 3 above shows the frequency and percentage of respondent demographic of period of using E-commerce. Among the 200 respondents, 79 respondents or 39.5% respondents is using e-commerce for a period of less than 2 years. 91 respondents (45.5%) respondents are using e-commerce for 3-5 years. The

remaining of 30 respondents or 15% of respondents is using e-commerce for 6-10 years.

**3.2.2 Testing of Hypotheses**

**H1: Perceived ease of use will positively affect the e-commerce adoption among SMEs.**

**Table 1: Coefficients of Perceived Ease of Use**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
	(Constant)	.357	.124		
1 Perceived Ease of Use	.881	.031	.894	28.086	.000

R<sup>2</sup>: .799

a. Dependent Variable: Ecommerce Adoption among SMEs

Based on the coefficient table 1 above, it shows that there is a positive relationship between the perceived ease of use and e-commerce adoption factors among SMEs. The regression coefficient for the perceived ease of use is explained as when there is every unit increase in perceived ease of use, it will lead to the e-commerce adoption factors increase by 0.881 units with p=.000. Hypothesis 1 is accepted.

**H2: Security will positively affect the e-commerce adoption among SMEs.**

**Table 2: Coefficients of Security**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
	(Constant)	.733	.188		
1 Security	.808	.049	.760	16.444	.000

R<sup>2</sup>: .577

a. Dependent Variable: Ecommerce Adoption among SMEs

In table 2, the P-Value shows the relationship is significant at 0.000 which indicates that the Security has significant relationship with e-commerce adoption. Hence, Hypothesis 2 is accepted.

**H3: Relative advantage will positively affect the e-commerce adoption among SMEs.**

**Table 3: Coefficients of Relative Advantage**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
	1 (Constant)	.225	.136		

Relative Advantage	.915	.035	.883	26.523	.000
--------------------	------	------	------	--------	------

R<sup>2</sup>: .780

a. Dependent Variable: Ecommerce Adoption among SMEs

The score of R square is 0.780, showing 78% contribution of relative advantage towards adoption of e-commerce. It is stated in table 3 that the Beta is .883 while p-value is 0.000, showing significance between the relationship. Thus, Hypothesis 3 is accepted.

**H4: Perceived compatibility will positively affect the e-commerce adoption among SMEs.**

**Table 4: Coefficients of Perceived Compatibility**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
	(Constant)	.531	.122		
1 Perceived Compatibility	.851	.031	.887	27.084	.000

R<sup>2</sup>: .787

a. Dependent Variable: Ecommerce Adoption among SMEs

Table 4 shows that Perceived Compatibility scored (Beta=.887) and (p=.000). The p-value is less than 0.001, which shows the significance of the independent variable towards the dependent variable. Hence, the hypothesis is accepted.

**H5: Top management support will positively affect the e-commerce adoption among SMEs.**

**Table 5: Coefficients of Top Management Support**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
	(Constant)	.147	.148		
1 Top Management Support	.916	.037	.871	24.927	.000

R<sup>2</sup>: .758

a. Dependent Variable: Ecommerce Adoption among SMEs

In table 5, the P-Value shows the relationship is significant at 0.000 which indicates that the Top Management Support has significant relationship with the adoption if e-commerce in SMEs. Hence, Hypothesis 5 is accepted.

**Table 6 Correlation of Independent Variables and Dependent Variable**

Variable	AD	EOU	SE	RA	PC	TMS
AD	1.00					
EOU	.894*	1.00				
SE	.760*	.824*	1.00			
RA	.883*	.915*	.786*	1.00		
PC	.887*	.921*	.759*	.912*	1.00	
TMS	.871*	.911*	.787*	.885*	.902*	1.00

Notes: AD, EOU, SE, RA, PC and TMS denote Adoption of e-commerce, Perceived Ease of Use, Security, Relative Advantage, Perceived Compatibility, and Top Management Support. \*Significance at 0.01 (2-tailed)

From Table 6, all of these variables are having high relationship in which all the correlation coefficient is range between  $\pm 0.71 - \pm 0.90$ . Perceived Ease of Use scored the strongest association with adoption of e-commerce in SMEs at  $r = 0.894$ , followed by Perceived Compatibility, Relative Advantage, Top Management Support and Security. Perceived Ease of Use also proved to be the most important factors on the determinants of e-commerce adoption among SMEs through the R square value where it contributes 79.9% to the adoption factor.

#### 4. CONCLUSIONS

The purpose of this study is to investigate the factors that affecting the e-commerce adoption among the SMEs in Melaka. The study is carried out to fulfill the research objective of this research, the researcher is able to fulfill all the objectives by applying through the correlation, reliability and regression test on the relationship of e-commerce adoption factors among SMEs with the independent variables which are perceived ease of use, security, relative advantage, perceived compatibility, and top management support.

#### 5. ACKNOWLEDGEMENT

The researchers would like to express our gratitude to Universiti Teknikal Malaysia Melaka (UTeM) for sponsoring this study under the research short term research grant (PJP).

#### 6. REFERENCES

- [1] Alam, S. S.; Khatibi, A.; Ismail, S. S. A.; Ismail, H. (2007), "Factors affecting e-commerce adoption in the electronic manufacturing companies in Malaysia," *International Journal of Commerce and Management*, 17(1/2), 125–139. [Accessed 1 November 2014].
- [2] Arshad, Y., Azrin, M. and A. Malik, S.N.A (2015a). The Influence of Information System Success Factors Towards User Satisfaction in Universiti Teknikal Malaysia Melaka. *ARNP Journal of Engineering and Applied Sciences*. Vol. 10. Issue 23,
- [3] Arshad, Y., Chook, X.C. and A. Malik, S.N.A (2015b), "Successful Implementation of Quotewin Software Tendering System: A Case

Study of A Multinational Company," *ARNP Journal of Engineering and Applied Sciences*, Vol. 10. Issue 23,

- [4] Elahi, Shaban; Fathi, S ;Azizi, Shahriar; Ebrahimi, Maryam; Shahriyar, Shahrukh; Heidari, Bahman; Salehi, Ali ;and Khosravi, A (2008), "Model designed to measure the readiness of companies to deploy e-commerce," *First Printing* ,Tehran: Institute for Trade Studies and Research
- [5] Epstein, M. (2004), "Implementing e-commerce strategies. Westport, Conn.: Praeger.
- [6] Grandon, E., & Pearson, J. (2004), "E-Commerce Adoption: Perceptions of Managers/Owners of Small and Medium Sized Firms in Chile," *Communications Of The Association For Information Systems*, 13.
- [7] Lip-Sam, T., & Hock-Eam, L. (2011), "Estimating the Determinants of B2B E-Commerce Adoption among Small & Medium Enterprises," *International Journal Of Business And Society*, 12(1).
- [8] Molla, A., & Licker, P.S. (2005), "E-Commerce Adoption in Developing Countries: A Model and Instrument," *Information & Management*, 42, 877-899. [Accessed 11 November 2014]
- [9] Pham, L., Pham, L., & Nguyen, D. (2011), "Determinants of e-commerce adoption in Vietnamese small and medium sized enterprises," *International Journal Of Entrepreneurship*, 15, 45.
- [10] Rogers, E.M. (1995) *Diffusion of Innovations*, 4th edn., New York: Free Press
- [11] Saffu, K., J.H. Walker, M. Mazurek, (2012). "Perceived Strategic Value and e-Commerce Adoption among SMEs in Slovakia," *Journal of Internet Commerce*, 11(1): 1-23
- [12] Turban, E. (2004), *Electronic commerce 2004*, Upper Saddle River, N.J.: Pearson/Prentice Hall.
- [13] Zwass, V. (2003) "Electronic Commerce and Organizational Innovation: Aspects and Opportunities," *Journal International Journal Of Electronic Commerce*, 7(3).