ELECTRONIC COMMERCE ADOPTION IN MALAYSIA: AN EMPIRICAL STUDY OF SMALL AND MEDIUM-SIZED ENTERPRISES (SMES)

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Abstract- Since the advent of the Internet, electronic commerce (e-commerce) has grown substantially across the globe. The Small and Medium-Sized Enterprises (SMEs) should take advantage of the internet and refocus their business strategies to improve their competitiveness. The aim of this paper is to identify the usage of e-commerce in SMEs based on industries and employee number. Based on the data collected from 108 SMEs located in Klang valley, Malaysia it is found that usage of e-commerce is high in the service industryhaving less number of employees in the industry. The results also show that over recent years more SMEs are involved in usinge-commerce in their business operations and marketing campaigns.

Keyword- E-commerce, Small and Medium-Sized Enterprises, Industries, Adoption, Malaysia, Marketing

I. INTRODUCTION

Electronic commerce has become one of the most important toolsto gain competitive advantage over the organizations [1]. It is being used to develop new markets, interact with customers, communicate with trading partners, and primarily to increase sales [2, 3]. Regardless of their size, e-commerce offer organization enormous opportunities and benefits to improve their business performance. Small to medium-sized enterprises (SMEs) are increasingly realising the potential benefits of e-commerce technologies [1, 4]. SMEs may use e-commerce technologies to communicate with customers and suppliers, collect market research data, promote good and services, provide detailed information about products and services, as well as offer after sakes support and assistance [4-6].

The primary objectives this paper is to study the use of e-commerce in selected SMEs industries in Malaysia. This study was done on SMEs industries focusing on their business operations before using e-commerce and business operations after using e-commerce. The element of interest in this research is SMEs initiative in utilizing e-commerce in their business operations. This paper is organised as follows. A summary of a literature review on e-commerce, SMEs in Malaysia and e-commerce adoption in the SMEs industries in Malaysia. This is followed with a discussion of the research method, research findingsand results; and finally, research conclusion and suggestions for further research.

II. LITERATURE REVIEW

A.E-commerce

E-commerce is defined as the process of buying, selling, transferring, or exchanging products, services, and/or information via computer networks, including internet [7][8]. According to Gregory, Karavdic, & Zou[9] e-commerce is perceived as an environment for presenting, trading, disturbing, servicing customers, collaborating with business partners, and conducting transaction using electronic technologies.

The Internet makes markets more contestable and reduces the barrier to enter the market for SMEs. E-commerce for SMEs can improve the quality of marketing, sales and (customer) support and procurement process by delivering more complete, accurate and timely information to the point of sale, decision and support. This has also made it possible for the smaller firms to improve communication and information flow with their customers, introducing new products to the market and identifying potential partner/suppliers.

B.SMEs in Malaysia

SMEs have long been considered to represent the backbone of any economy by providing most of the employment and growth. Similarly, according to the SMEcorp website[10], SMEs in Malaysia account for 99% of total business establishments and contribute 31% of the nation's Gross Domestic Product (GDP). SMEs shares total employment of and exports of the country are 56% and 19% respectively. SMEs are expected to be a major driver in terms of the nation going forward to achieve their status of a developed nation and high-income country. The focus of the Tenth Economic Model and Tenth Malaysia Plan is to unleash the untapped potential of SMEs and to transform these entities to be more competitive and resilient in the changing business environment.

Malaysia's Ministry of Internal Trade and Industry defines SME as a company with an annual sales turnover of not more than RM25 million and not more than 250 full-time employees [11]. The

Malaysian Government is committed to, and concern for, the development of SMEs has been clearly evident since the early 1970s. The New Economic Policy introduced in 1971 aimed to improve people's welfare and restructure ethnic economic imbalances. The government's commitment to the development of SMEs can also be seen in the second Industrial Master Plan (IMP2), which is followed by the Tired Industrial Master plan (IMP3) 2006-2020, to coincide with country vision of 2020 (MITI, 2005). The Malaysian government has implemented various policies and strategies under these plans. The IMPs were formulated to enhance the growth of the manufacturing sector across the entire value chain and cluster-based industrial developments. Hence, this plan provides an integrated approach to the development of industrial areas and opportunities for growth of SMEs (MITL, 2005).

There are many accepted definition of SMEs and the classification vary from industry to industry and from country to country [12]. Table 1 illustrates a summary of SMEs definition based on Malaysian and European Union standards.

Table 1: SMEs Definition

Country	Enterprise category	Employee Number	Sources
Malaysia	Micro	1-5 employees	[13]
	Small	Between 5 and 50 employees	
	Medium	51 - 150 or > 250employees	
European Commission	Micro	1-10 employees	[14]
	Small	10 - 50 employees	
	Medium	Fewer than 250 employees	

The definition and type of SMEs are taken from the website SMEinfo business directory[15]. The site divides SME companies in Malaysia into six main industries sectors: namely manufacturing (incl. agro based), Manufacturing-related Services, Mining and Quarrying, Services (including ICT), Construction and Primary Agriculture. Table 2 provides the definition of these SME based on the industry sector.

Table 2: SMEs industries [16]

Category	Micro	Small	Medium
Manufacturing (including agro-based and MRS)	A micro enterprise in manufacturing (including agro-based) and MRS is an enterprise with full time employees of less than 5 or with annual sales turnover of less than RM250,000	A small enterprise in manufacturing (including agro-based) and MRS is an enterprise with full-time employees between 5 and 50 or with annual sales turnover of between RM250,000 and less than RM10 million	A medium enterprise in manufacturing (including agro-based) and MRS is an enterprise with full-time employees between 51 and 150 or with annual sales turnover of between RM10 million and less than RM25million
Services, primary agriculture and information and communication technology (ICT)	A micro enterprise in manufacturing (including agro-based) and MRS is an enterprise with full time employees of less than 5 or with annual sales turnover of less than RM200,000	A small enterprise in manufacturing (including agro-based) and MRS is an enterprise with full time employees of less than 5 and 19 or with annual sales turnover of between RM200, 00 less than RM 1 million	A medium enterprise in manufacturing (including agro-based) and MRS is an enterprise with full time employees of between 20 and 50 or with annual sales turnover of between RM1 million and RM5 million

C.E-commerce in SMEs

SMEs are interested in e-commerce due to its potential to help them improve their business processes, reduce costs and achieve a closer relationship with their clients. Beyond this, the adoption of e-commerce in SMEs has become a necessity in a context dominated by the globalization of markets [17]. E-commerce not only helps large businesses to increase their visibility and profit, but also helpSMEs to achieve all of these benefits. During this economic period, SMEs are contributing to economic growth, social structure, employment, as well as regional and local development;

consequently, they have become an important sector of the economy [18]. As defined by Neergaard[19], there are four major reasons behind SMEs' acceptance of e-commerce; (1) It increases output, (2) It improves services to customers, (3) It simplifies the work process and (4) It keeps a record.

E-commerce orientation, experience and perception of e-commerce success differ from one SME to another. For example, a particular SME may feel it has achieved a great deal by employing e-mail for its marketing efforts while another may think there is the need for a fully integrated supply-chain management [20].

III. RESEARCH METHOD

An online survey was conducted to find the usage of e-commerce in SMEs based on industries and employee number and how Malaysian SMEs industries conducted business prior to e-commerce.The time-line for this study span from January to April 2014. The analyses of data are completed in June 2014. The data were collected from the management personnel, CEOs and the people having the capacity in IT/IS decision in the company. Approximately 1,449, emails are sent to different SMEs in Malaysia. The link for the online questionnaire is sent to these organisations before being further distributed among their members. The reminder e-mail is sent after one month and a follow up were done every two weeks to respondents, so as to remind them in to complete the survey. One hundred and eight responses were received from the total e-mails sent to the SMEs. The response rate isless than five percentand is considered to be satisfactory as accessing and inviting CEOs and managers to take part in survey is usually difficult [18].

IV. RESULTS AND DISCUSSION

The findings of the study are presented in terms of type of organization, number of employees, years using e-commerce and of experience of business process prior to using e-commerce.

A.Type of organization:
A total of 108 SMEs have contributed to this study, and are divided into the six main industries to which they belong. As can be seen from Table 3, most of the companies are linked to industries which provide services including ICT (42.6%) to their customersfollowed by SMEs which are linked to Manufacturing services(15.7%), Construction (6.5%) and Primary Agriculture (1.9%), and finally Mining and Quarrying (0.9%). This is anticipatedas the survey is conducted in Klang Valley, which is located incentral location of Malaysia. Indeed, most of the companies in this area are linked with providing services rather than taking part in agriculture-related activities. The latter activities are more of concern for villages away from Klang Valley.

B.Number of Employees:
Table 3 shows the distribution of SMEs based on the number of employees they employ in their businesses. Referring to Table 1, international standards for numbers of employee for SMEs are between 1-250 people.Based on the findings of this study, most of the SMEs participating in the survey have less than 5 employees, and are of micro businesses with an e-commerce presence. Only few SMEs participating in this survey have more than 150 employees as shown in Table 3. This is true as small companies are increasingly moving toward adoption of an e-commerce site to increase their customer base.

C.Years spent on E-commerce Activity:

According to the survey it shows that only 4.6% of the companies hadan e-commerce site for more than 10 years.From the survey also, mostSMEs (37%) have been running their e-commerce sites for 1-5 years. This percentage shows that the usage of e-commerce has become more prominent over the past 5 years.This implies that these SMEs have been actively using and conducting business using e-commerce site from 1 year and some has experience up to 5 years. This is quite encouraging as over the past years, more companies (25.9%) are beginning to make use of e-commerce sites for their business, as shown in Table 3.

D.Business operations prior to using e-commerce:
Based on the data collected in the survey done, most of the business owners of these SMEs responded that before the use of e-commerce site to conduct their business, they made use of any website to market their business and product. This is true for most small businesses as they use social media sites or blogs to advertise their business before moving to having an e-commerce site. The percentageshown in Table 3 emphasize that most of the businesses make use of some sort of advertisement to make their business visible, whether offline or online advertisement. Only 26.0% respond that they did not make use of any form of advertising before e-commerce. This is due to the fact that they have just started their business and are beginning their e-commerce venture rather than advertising through other means.

Table 3: Demographic characteristics

Demographic characteristic	Percentage	Frequency
Manufacturing (incl. Agro Based)	13.9	15
Manufacturing Related Services	15.7	17

Mining and Quarrying	.9	1
Services (including ICT)	42.6	46
Construction	6.5	7
Primary Agriculture	1.9	2
Others	15.7	20
Number of Employees		
Less than 5	37.0	40
5-19	31.5	34
20 - 50	22.2	24
50 - 150	7.4	8
150 - 250	1.9	2
Years spent on E-commerce Activity		
Less than 1 year	25.9	28
1-5	49.1	53
5-10	20.4	22
More than 10 years	4.6	5
Before e-commerce how business was conducted		
Website for marketing only	28.5	35
On-line advertisement/marketing only	22.0	27
Off-line advertisement (e.g. newspaper, TV etc.) only	23.6	29
No website and marketing efforts done	26.0	32

CONCLUSION

SMEs are interested in e-commerce due to its potential to help them improve their business processes, reduce costs and achieve a closer relationship with their clients[21]. Malaysia has been recognized as high potential for e-commerce implementation in Southeast Asia, and it is expected that in the next five years, it will serve as a role model for developing countries in terms of ICT implementation and establishment[6]. The result of this study shows that e-commerce adoption is high in service including ICT industry sector. Most small businesses compare with medium ones are making more use of e-commerce in their business as it allows them to market their business regionally and internationally. Most of the SMEs have been using e-commerce for less than 5 yearsshowing a positive trend in accepting and utilizing the use of e-commerce among SMEs.

Following this, future work involving larger sample size of SMEs taking part in the field work will give better insight to the use of e-commerce in business operations and marketing trend. The future work could also be expanded to other region in the Southeast Asian. Although the sample size used in this research is reasonable, a larger sample size would help to gain a better perspective on SMEs and use of e-commerce in this region. The further research needs to investigate number of employee, SMEs industries and e-commerce adoption and before e-commerce in SMEs by larger samples from different countries and regions.

REFERENCES

[1]. Esichaikul, V. and S. Chavananon. Electronic Commerce and Electronic Business Implementation Success Factors. 2001.

[2]. Bloch, M., Y. Pigneur, and A. Segev, On the road of electronic commerce--a business value framework, gaining competitive advantage and some research issues. Lausanne: Institut D'Informatique et Organization, Ecole des Hautes Etudes Commerciales, Université de Lausanne, 1996.

[3]. Anders, G., Why and where Internet commerce is succeeding. The Wall Street Journal Special Report: The Internet, 1998.

[4]. Al-Qirim, N.A.Y., Electronic commerce in small to medium-sized enterprises : frameworks, issues, and implications2004, Hersey, PA: Idea Group Pub. xv, 370 p.

[5]. Doherty, N.F. and F.E. Ellis-Chadwick, The relationship between retailers' targeting and e-commerce strategies: an empirical analysis. Internet Research, 2003. 13(3): p. 170-182.

[6]. Kurnia, S., et al. Adoption of Electronic commerce technologies by SMEs in Malaysia. in System Sciences, 2009. HICSS'09. 42nd Hawaii International Conference on. 2009. IEEE.

[7]. Turban, E.K., et al., D.(2008). Electronic Commerce A Managerial Perspective, 2008, Pearson International Edition.

[8]. Turban, E., D.R. King, and J. Lang, Introduction to electronic commerce. 3rd ed2011, Upper Saddle River, N.J. ; London: Pearson Education. 539 p.

[9]. Gregory, G., M. Karavdic, and S. Zou, The effects of e-commerce drivers on export marketing strategy. Journal of International Marketing, 2007. 15(02): p. 30-57.

[10]. SME Annual Report 2010/11, SME Annual Report 2010/11 - Tranformation to the New Economic Model, N.S.d. council, Editor 2010.

[11]. Hashim, J., Information communication technology (ICT) adoption among SME owners in Malaysia. International Journal of Business and Information, 2007. 2(2): p. 221-240.

[12]. O'Regan, N. and A. Ghobadian, Testing the homogeneity of SMEs: The impact of size on managerial and organisational processes. European Business Review, 2004. 16(1): p. 64-77.

[13]. Fathian, M., P. Akhavan, and M. Hoorali, E-readiness assessment of non-profit ICT SMEs in a developing country: The case of Iran. Technovation, 2008. 28(9): p. 578-590.

[14]. NSDC Definitions for Small and Medium Enterprises in Malaysia. 2005.

[15]. Malaysia, S.C. SMEinfo. 2015; Available from: www.smeinfo.com.my.

[16]. Alam, S.S., Ahsan, F., ICT adoption in Malaysian SMEs from services sectors: Preliminary findings. Journal of Internet Banking and Commerce, 2007. 12(3).

[17]. Huy, L.V. and P. Filiatrault, The adoption of e-commerce in SMEs in Vietnam: a study of users and prospectors. 2006.

[18]. Scupola, A., Adoption of Internet-based electronic commerce in Southern Italian SMEs. , 1st Nordic Workshop on Electronic Commerce, 2001.

[19]. Neergaard, P. Microcomputers in small and medium-size companies: benefits achieved and problems encountered. 1992.

[20]. Pham, L. and D. Nguyen, Determinants of e-commerce adoption in veitnamese SMEs. International Journal of Entrepreneurship, 2011. 15: p. 45.

[21]. Ghobakhloo, M., D. Arias-Aranda, and J. Benitez-Amado, Adoption of e-commerce applications in SMEs. Industrial Management & Data Systems, 2011. 111(8): p. 1238-1269.

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