The Implication of E-Commerce Application in SMEs

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Abstract – This research aims to explore the implication of e-commerce application among Small and Medium (SM) Malay entrepreneurs involved in the Malaysian food and beverage manufacturing industry based on three perspectives: technology, competition, and suppliers. A survey questionnaire was developed following the three variables. Furthermore, a pilot study was conducted to identify the necessary improvements to be made to the instrument. The respondents involved SM Malay entrepreneurs who are e-commerce application users, with a 68.4% response rate. The empirical data were statistically analysed via stepwise multiple regression. Resultantly, the variables of competition and supplier influenced the implication of e-commerce application among SM Malay entrepreneurs.
Keywords: "E-Commerce Application", "Small Medium Enterprise (SME)", "Technology", "Competition", "Suppliers"

1. Introduction

Internet-related advancements have led to the emergence of e-commerce in domestic and global Small and Medium Enterprise (SME) sectors, including those of Australia, Canada, and the United Kingdom (Hussin & Mohamad Noor,2005). The adoption of these methods needs to become an integral part of the culture, not just for SME entrepreneurs in Malaysia but also in other countries (Morgan, Colebourne, & Thomas, 2006). E-commerce application is similar to the conventional trading occurring between buyers and sellers (Laudon, Laudon & Brabston, 2007).

The ICT-based technologies are used in e-commerce applications via automatic or semi-automatic website transactions, including online payment transactions and information products and services (Levy, & Powell, 2005). In essence, ICT can improve the productivity, competitiveness, and penetration of perceived SM sector in local and global markets (Al-Qirim, 2007; Brady, Fellenz, & Brookes, 2008); MacGregor & Vrazalic, 2005) to increase daily transactions (Burt, 2010)
This study aimed to determine whether the three factors influencing the implication of e-commerce application in Malaysia based on three research problems: (i) the influence of technology on the implication of e-commerce application among SM entrepreneurs ; the

influence of competition on the implication of e-commerce application among SM entrepreneurs (Melville & Ramirez, 2008); and the influence of suppliers on the implication of e-commerce application among SM entrepreneurs (Abid, Rahim, & Scheepers, 2011); Knol & Stroeken, 2001). Three questions were developed to address the factors influencing the implication of e-commerce application among SM Malay entrepreneurs in Malaysia: 1) What are the technology factors influencing the implication of e-commerce application? 2) What are the competition factors influencing the implication of e-commerce application? 3) What are the supplier factors influencing the implication of e-commerce application?

2. Literature Review

Table 1 summarises past theoretical research based on the independent variables of technology, competition, and suppliers and the items measuring the implication of e-commerce application (dependent variable). The competition among various establishments has arisen as a result of globalisation.

Table 1: Summary Of The Previous Theoretical Study

Factor	Previous Theoretical Study	Researcher
Technology	- Cost-effective	- As in Ghorishi (2009).
	- Provide external information on the market	- As in Melville & Ramirez (2008
	- Improve internal communication/inter-working	- As in Burt (2010).
	- Online training for new employees	- As in Forsman (2008).
	- Share information with partners	- As in Benitez-Amado, Llorens-Montes & Perez-Arostegui (2010).
	- The speed of information retrieval is key to gaining a competitive advantage and saving time	- As in Kotelnikov (2007).
	- Acceptance of consistent and continuous information	- As in Locke, (2004).
	- Low business cost	- As in Molla & Licker (2005).
	- High income	
	- Reduce the use of labour	
Competition	- Able to compete with other SM companies	- As in Al-Qirim (2007).

	- Competitive pressures in the open market - More competitors are using e-commerce - As a basis for the change to compete against other SM - Able to compete with large companies - To sustain the companies' position and competitiveness - Develop a creative mind	- As in Boeck, Bendavid & Lefebvre (2009). - As in Cubillo-Pinilla (2008). - As in Levy & Powell (2005). - As in Melville & Ramirez (2008). - As in Boeck, Bendavid & Lefebvre (2009). - As in Morikawa (2004).
Suppliers	- Seek new suppliers - Transition from the purchase of conventional to more modern methods - Forge supplirs relationship with entrepreneurs - Accelerate the transaction process - Change the overall industrial structure (business rules) to be more innovative - Provide facilities for managing work with potential suppliers - More suppliers use/pressure from suppliers	- As in Al-Qirim (2007). - As in Boeck, Bendavid & Lefebvre (2009). - As in Cubillo-Pinilla (2008). - As in Hussin & Mohamad Noor (2005). - As in Abid, Rahim & Scheepers (2011).
Implication E-commerce	- Increase in customers - New market - Sales growth	- As in Forsman (2008). - As in Brady, Fellenz & Brookes (2008).

	- Minimal operating costs - Healthy competition level - Product diversity - Time-saving - - Easy to deal with suppliers	- As in Levy & Powell (2005). - As in Morgan, Colebourne, & Thomas (2006). - As in Kartiwi, & MacGregor (2007). - As in Abid, Rahim & Scheepers (2011).

Figure 1 illustrates three factors of technology, competition, and suppliers (independent variables) and the implication of e-commerce application (dependent variable). This conceptual framework is based on a combination of technology (Ifinedo, 2011), competition and supplier (Ghobakhloo, Arias-Aranda & Benitez-Amado, 2011), factors for the items measuring the implication of e-commerce application.

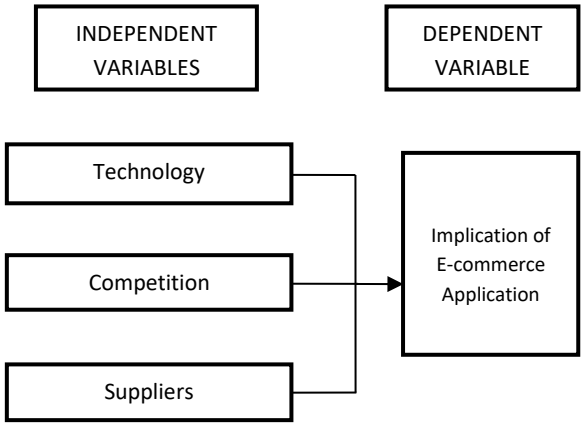

Figure 1: Conceptual Framework: Implication Of E-Commerce Application

3. Methodology of Study

3.1 Data Collection

Permission was obtained in advance from the SME Corp to access and use the list of registered SM Malay entrepreneurs from the SME Corp website. A total of 130 SM Malay entrepreneurs involved in the Malaysian food and beverage production sector was chosen via random sampling. The current sample selection was justified using the sample size schedule published in Krejcie and Morgan (1970). Specifically, 190 SM Malay entrepreneurs (owners) who used the e-commerce application constituted the population size for this study. The random process offered all respondents an equal opportunity for selection. Overall, 130 of the 190 questionnaires distributed to SM Malay entrepreneurs were returned with a 68.4% response rate. This sample size exceeded that of Krejcie and Morgan (1970).

3.2 Instrumentation

A set of survey questionnaires with 39 items was distributed in this study to elicit authentic information. The questionnaire items were evaluated using a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree) and translated from English (original version) into Malay. The translated questionnaire served to increase SM Malay entrepreneurs' level of comprehension and assist them in properly addressing the questionnaire. The survey instrument was reviewed by experts (thesis supervisor and co-lecturers) to mitigate potential errors during the translation process. A pilot test was subsequently conducted with 30 SM Malay entrepreneurs in Selangor.

3.3 Validity and Reliability

The questionnaire validity and reliability of the three independent variables of technology (0.862), competition (0.883), and supplier (0.861) and one dependent variable, the implication of e-commerce application (0.845), were tested via Cronbach's alpha. Table II

compares the current Cronbach's alpha values against those of past works. Overall, the adapted questionnaire disclosed satisfactory internal validity and reliability consistency.

4. Findings and Discussion

The derived outcomes justified the respondents' distribution on the items of interest.

4.1 Population and Research Sample

The current data were derived from 130 SM Malay entrepreneurs using e-commerce in daily transactions in the food and beverage industry. Fifty (26.3%) of the questionnaires were answered on the questionnaire, while 10 (5.3%) of them were left unanswered or incomplete (see Table III). Notably, the SM Malay entrepreneurs were asked to provide their consent before participating in the study. The study population of 190 respondents and sample size of 130 respondents exceeded those of Krejcie and Morgan (1970), which proposed a sample size of 127 respondents Krejcie and Morgan (1970).

4.2 Pearson Correlation

Table 2 below summarises the Pearson correlation findings. This result served as additional information, and was not used in the current work.

Table 2: Summary of Findings

	Correlation (R)	**P**	**Result**
1	0.942	.000	Strong correlation
2	0.950	.000	Strong correlation
3	0.967	.000	Strong correlation

D. Multiple Regression Analysis (Stepwise)

Table 3 presents the multiple regression analysis (stepwise) based on competition and supplier factors. These independent variables significantly predicted the use of e-commerce application.

Table 3: Summary of The Final Stage Findings

Variable	**R^2**	**B**	**Se B**	**Beta**	**Result**
Technology	0.715	2.645	.403	.404*	Did not support the study
Competition	0.718	2.611	.399	.399**	Supported the study

Supplier	0.719	3.511	.400	.536**	Supported the study

Note : * Significant at $p < 0.001$, ** Significant at $p < 0.05$

Other variables, such as technology, did not statistically significantly affect the implication of e-commerce application by SM Malay entrepreneurs in the food and beverage sector. This variable was eliminated for not meeting the multiple regression analysis (stepwise) prerequisites. As such, the relationship between the variables involved in the implication of e-commerce proved inconclusive.

Based on the model implication of e-commerce shown in Figure 2, competition significantly predicted the use of this application. Intense competition promotes SM Malay entrepreneurs' creative thinking and their use of ICT technology compared to those who are less resourceful. Hence, SM Malay entrepreneurs' level of creativity potentially influences the implication of e-commerce.

Figure 2 also highlighted that suppliers significantly predicted the implication of e-commerce application. The SM Malay entrepreneurs can enhance transactional relationships with suppliers through e-commerce application and offer online facilities to the suppliers, who would more likely use it against entrepreneurs who fail to raise the transaction level. As such, the elements of the transaction between SM Malay entrepreneurs and suppliers potentially affect the implication of e-commerce. This finding coincided with those of Ghobakhloo, Arias-Aranda and Benitez-Amado (2011). and Li, Lai, & Wang (2010).

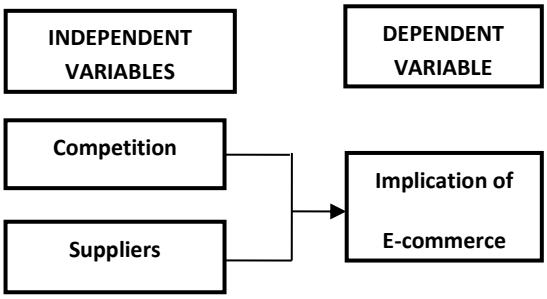

Fig. 2 Independent Variables That Impact the Implication of E-Commerce Application

A predictor proves significant when the beta coefficient value exceeds the standard beta values of other forecasters. Although only competition and suppliers were selected as better predictors, this does not undermine the significance of technology as a predictor. Two factors were eliminated from the multiple regression model (stepwise) for not having made a significant contribution at the confidence level $p < 0.05$.

5. Discussions

5.1 Implication

The implication of e-commerce was confirmed by the theoretical instruments applied to SM Malay entrepreneurs who use e-commerce in daily transactions. The study contributed to the discovery of two factors (competition and suppliers) that can significantly predict the implication of e-commerce application. The SM entrepreneurs' increased use of e-commerce positively influenced the level of competition. These results corroborated those of Morikawa, (2004). In line with Ghobakhloo, M., Arias-Aranda and Benitez-Amado (2011) and Li, Lai, and Wang (2010) their frequent use of this application positively affected supplier-related aspects.

Although the implication of e-commerce application can change by place, this study failed to prove technology as a good predictor for the implication of e-commerce application among SM Malay entrepreneurs in the Malaysian food and beverage industry. The current work provided empirical evidence on the implication of e-commerce application among SM Malay entrepreneurs in the food and beverage manufacturing industry, which can serve as a framework of reference.

5.2 Recommendation

Future works could examine the implication of e-commerce through interviews and observations. Both structured and unstructured interview data collection techniques could facilitate researchers to gauge the implication of this application across Malaysia. Furthermore, observation techniques could be applied in case studies to gauge SM entrepreneurs' behaviour when conducting e-commerce transactions. Regardless, interviews and observation would be both time consuming and costly.

Both men and women were selected as the study respondents. Hence, future research could examine only one gender type to elicit more intriguing outcomes. The SM entrepreneurs selected as study respondents were skilled in ICT. Potential scholars could focus on counterparts who lack such skills. As the current work was confined to the SM sector, further research should broaden the study scope to include large-scale entrepreneurs and multinational companies.

Given the relatively small population and sample size in this study, future works could consider increasing the number of respondents. More questionnaire items can be added to justify the research questions. Current theory researchers can also make adjustments to past frameworks as the basis for a new theory to strengthen their study findings. Domestic researchers can collaborate with their global counterparts to obtain more favourable results. Future researchers can also examine the development of electronic business in daily transactions.

6. Conclusion

Previous findings revealed the influence of three independent variables (technology, competition, and suppliers) on the implication of e-commerce application among SM Malay entrepreneurs. These variables were adapted to develop the research framework and the questionnaire items. The instrument reliability proved to be satisfactory. The study data were collected, coded, and statistically analysed via SPSS. Competition and suppliers significantly predicted the implication of e-commerce application among SM Malay entrepreneurs, while technology did not.

As anticipated, the social science studies performed in different geographical locations would provide different results. This research area examines human behaviour from various angles. The research results could influence the implication of e-commerce application following the assumptions and methodology of the conceptual framework. Summarily, the current work could facilitate new or existing SM entrepreneurs and those with or without access to e-commerce during business transactions. Given the complexities in becoming a successful SM entrepreneur in the Malaysian food and beverage production industry, SM entrepreneurs must implement appropriate ICT-oriented strategies for more efficient transactions.

References

Abid, A. A., Rahim, M. M., & Scheepers, H. (2011). Experienced benefits and barriers of e-business technology adoption by SME suppliers. *Communications of the IBIMA*, 1-11.

Al-Qirim, N. (2007). The adoption of e-commerce communications and applications technologies in small businesses in New Zealand. *Electronic Commerce Research and Applications*, 6(4), 462-473.

Benitez-Amado, J., Llorens-Montes, F. J., & Perez-Arostegui, M. N. (2010). Information technology-enabled intrapreneurship culture and firm performance. *Industrial Management & Data Systems*, 110(4), 550-566.

Boeck, H., Bendavid, Y., & Lefebvre, E. (2009). Evolving B2B e-commerce adaptation for SME suppliers. *Journal of Business & Industrial Marketing*, 24(8), 561-574.

Brady, M., Fellenz, M. R., & Brookes, R. (2008). Researching the role of information and communications technology (ICT) in contemporary marketing practices. *Journal of Business & Industrial Marketing*, 23(2), 108-114.

Burt, S. (2010). Retailing in Europe: 20 years on. *International Review of Retail, Distribution & Consumer Research*, 20(1), 9-27.

Cubillo-Pinilla, J. M. (2008). Small business performance in MNC suppliers' networks. *Journal of Small Business and Enterprise Development*, 15(3), 571-583.

Daniel, E., & Wilson, H. (2002). Adoption intentions and benefits realized: A study of e-commerce in UK SMEs. *Journal of Small Business and Enterprise Development*, 9(4), 331-348.

Forsman, H. (2008). Business development success in SMEs: A case study approach. *Journal of Small Business and Enterprise Development*, 15(3), 606-622.

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

Ghorishi, M. (2009). E-commerce adoption model in Iranian SMEs (Master's thesis). Lulea University of Technology.

Grandon, E. E., & Pearson, J. M. (2004). Electronic commerce adoption: An empirical study of small and medium US business. *Information and Management*, 42(1), 197-216.

Hao, X. M., & Chow, S. K. (2004). Factors affecting internet development: An Asian survey. *First Monday*, 9(2), 1-21.

Haug, A., Pedersen, S. G., & Arlbjorn, J. S. (2011). IT readiness in small and medium-sized enterprises. *Industrial Management & Data Systems*, 111(4), 490-508.

Hussin, H., & Mohamad Noor, R. (2005). Innovating business through e-commerce: Exploring the willingness of Malaysian SMEs. In *Proceedings of the Second International Conference on Innovations in IT (IIT'05)* (pp. 1-10).

Ifinedo, P. (2011). Internet/e-business technologies acceptance in Canada's SMEs: An exploratory investigation. *Internet Research*, 21(3), 255-281.

Kartiwi, M., & MacGregor, R. C. (2007). Electronic commerce adoption barriers in small to medium-sized enterprises (SMEs) in developed and developing countries: A cross-country comparison. *Journal of Electronic Commerce in Organizations*, 5(3), 35-17.

Knol, W. H., & Stroeken, J. H. (2001). The diffusion and adoption of information technology in small and medium-sized enterprises through IT scenarios. *Technology Analysis & Strategic Management*, 13(2), 137-149.

Kotelnikov, V. (2007). Small and medium enterprises and ICT. United Nations Development Program-Asia Pacific Development Information Program and Asian and Pacific Training Center for Information and Communication Technology for Development, Bangkok.

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, 30, 607-610.

Laudon, K. C., Laudon, J. P., & Brabston, M. E. (2007). *Management information system: Managing the digital firm* (3rd Canadian ed.). Pearson Prentice Hall.

Lawson, R., Alcock, C., Cooper, J., & Burgess, L. (2003). Factors affecting adoption of electronic commerce technologies by SMEs: An Australian study. *Journal of Small Business and Enterprise Development*, 10(3), 265-276.

Lee, J. (2004). Discriminant analysis of technology adoption behavior: A case of internet technologies in small businesses. *Journal of Computer Information Systems*, 44(4), 57-66.

Levy, M., & Powell, P. (2005). *Strategies for growth in SMEs: The role of information and information systems*. Elsevier Butterworth-Heinemann.

Li, D., Lai, F., & Wang, J. E. (2010). E-business assimilation in China's international trade firms: The technology-organization-environment framework. *Journal of Global Information Management*, 18(1), 39-65.

Locke, S. (2004). ICT adoption and SME growth in New Zealand. *The Journal of American Academy of Business*, 4(1/2), 93-102.

Love, P. E. D., & Irani, Z. (2004). An exploratory study of information technology evaluation and benefits, costs, and risks of IT in Australian SMEs. *Information & Management*, 42(1), 227-242.

MacGregor, R. C., & Vrazalic, L. (2005). A basic model of electronic commerce adoption barriers: A study of regional small businesses in Sweden and Australia. *Journal of Small Business and Enterprise Development*, 12(4), 510-527.

Melville, N., & Ramirez, R. (2008). Information technology innovation diffusion: An information requirements paradigm. *Information Systems Journal*, 18(3), 247-273.

Molla, A., & Licker, P. S. (2005). Perceived E-Readiness Factors In E-Commerce Adoption: An Empirical Investigation In A Developing Country. *International Journal of Electronic Commerce*, 10(1), 83-110.

Morikawa, M. (2004). Information technology and the performance of Japanese SMEs. *Small Business Economics*, 23(3), 171-177.

Morgan, A., Colebourne, D., & Thomas, B. (2006). The development of ICT advisors for SME businesses: An innovative approach. *Technovation*, 26(8), 980-987.