

The impact of electronic business on micro, small and medium enterprises in Mongolia

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Abstract: This study examines how the external factors that led micro, small and medium enterprises (MSMEs) in Mongolia to adopt electronic business can influence the benefits that MSMEs can obtain by taking these technologies.

Methods: This study adopts a quantitative approach using a survey method to collect data. This approach helps to receive information from many MSMEs in the retail sector in Mongolia.

Results: In this study, as mentioned in the earlier section, 94 responses were analyzed. According to the result, MSMEs that were driven to adopt electronic business due to customer demand are less likely to experience reduced operating costs.

Conclusions: In this study, the results also show that MSMEs could achieve most of the benefits expected from the adoption of electronic business if they are targeted as a tool to improve the competitiveness of the company.

In summary, this study has supplied empirical evidence to understand how external factors, that is, customers and competitors, can influence the type of benefits that MSMEs could obtain by adopting electronic business in the business.

Keyword: electronic business, micro, small and medium enterprises, Mongolia.

I. INTRODUCTION

The advent of electronic business has reshaped the business world. More than a decade has passed since governments advocate the adoption and use of electronic business among micro, small, and medium business (MSMEs). Electronic business has been widely promoted as a technology that allows MSMEs to compete with their larger counterparts. The previous study shows that customer demand and competitive pressure in the business sector are two of the essential factors for the adoption of electronic business by MSMEs [1-3]. In terms of benefits, considerable attention was devoted to existing literature to find the interests or values of electronic business in MSMEs, such as reducing operational costs, improving customer retention, and improving external links [4].

1.1 External factors and adoption of electronic business of MSMEs

To evaluate the background and meanings of the adoption and use of electronic business in the context of MSMEs develops and theorizes an integrated theoretical model [5]. They showed that the critical background for achieving and maintaining the value of electronic business are, among others, market orientation and business partnerships.

The attention of the market that shows the degree of dominance of some large firms in the industry is the intensity of competition [6]. Companies with many competitors can be affected by competitive rivalry and offer comparable products and services [7]. To survive and to be competitive and innovative, MSMEs adopt and use electronic business [8]. To strengthen its competitive position and achieve superior firm performance, MSMEs can be influenced by competitive pressure [8]. According to [9], suggests that competitive pressure is a determining factor in IS strategies in organizations.

1.2 Benefits of electronic business by MSMEs

The previous study documented the many benefits that MSMEs can obtain with the adoption of electronic business. These benefits can be tangible or intangible [10]. Among the real benefits extended is the reduction of costs in the production and operation of the business [11-15]. These studies claim that electronic business is a more natural and economical way of doing business because customer orders can be accepted, confirmed, processed, and paid in an online environment. In addition, by reducing the amount of mundane article

work and enforcing adequate integrity mechanisms, organizations can improve their internal efficiency [16], reduce the number of errors in data processing [17] and improve the distribution channel [15].

In China, it suggests that online business has affected sales more which efficiency. The reported that greater internal efficiency and better customer service were the most common benefits of the adoption and use of electronic business by MSMEs in Thailand.

It is compatible with the notion that the advantages of adopting electronic business do not always come only in measurable benefits. Often, the main incentives to use electronic business are in the intangible benefits [18].

1.3 Electronic Business and MSMEs in Mongolia

As in other countries, MSMEs are a vital part of the country's economic development in Mongolia. According to the 2016-2017 Annual Report of MSMEs, MSMEs represent 98.9% of the total establishments in the country. Regarding the use of the Internet, the Report showed that approximately 40% had used the Internet service but only for personal purposes and not for commercial operations. In this study, MSME revealed that only 6.7% of respondents were involved in online transactions or had adopted electronic business in the business. This figure is unexpectedly low when considering the various incentives and subsidies provided by the government to promote the adoption of electronic business by MSMEs.

The implies that domestic merchants, particularly MSMEs, can take advantage of this growing market by supplying quality products and services through online channels. The survey revealed which social networks are the most prominent online activities between Mongolia, 35.6% of total online activities [19].

1.4 Framework

In this study, the authors focus exclusively on external factors to understand the extent of their influence on the experience of real benefits after adopting electronic business with more significant details.

Based on the earlier literature, a framework is proposed to assess the external factors and benefits of the adoption of electronic business in Mongolia MSMEs. Below are the hypotheses formulated in this study:

H1: MSMEs with a higher perceived benefit for the client is more likely to experience cost reduction benefits

H2: MSMEs with a higher perceived benefit for the customer are more likely to suffer from customer retention

H3: MSMEs with a higher perceived benefit to the customer are more likely to experience a better advantage of external links

H4: MSMEs with greater perceived competitive value are more likely to suffer cost reduction benefits

H5: MSMEs with greater perceived competitive value are more likely to suffer from customer retention benefits

H6: MSMEs with greater perceived competitive value are more likely to experience a better benefit from external links

II. METHODS

In this study, adopts a quantitative approach using a survey method to collect data. This approach helps to obtain information from many MSMEs in the retail sector in Mongolia. The instrument was developed by adapting earlier questionnaires related to the study [20].

This study used the list of 500 addresses of retail MSMEs that were obtained from Mongolia MSME, that is the organization linked to the government in charge of the development of small and medium businesses. The criteria used are based on the definition of Mongolia MSMEs in 2016, in which the non-manufacturing sector, MSMEs are business organizations by a maximum of 30 employees or a volume of sales it does not exceed 3 million RM.

As mentioned earlier in this study, one of the goals of this research is to propose a framework that uses a solid statistical technique, such as Partial Least Part (PLP). In the study, due to the nature of this technique that would allow the exploration and prediction of the included variable.

III. RESULTS

As mentioned in the previous section, 94 answers were analyzed in this study. Table-1 shows the design of Internet retailers.

Table-1 Profile of the MSMEs

	Frequency	Percent
Age of company:		
5 years or less	43	45.7
6-10 years	35	37.3
11-15 years	10	10.6

More than 15 years	6	6.4
Category:		
Wholesaler	8	8.5
Retailer	79	84.1
Service	5	5.3
Others	2	2.1
Full time staff:		
Less than 5	21	22.3
5-29	63	67
30-75	5	5.3
75 or more	5	5.3
Electronic Business Level of Adoption:		
Pure online business	15	15.9
Online and offline	79	84.1

Table-1 shows that more which half of the responding MSMEs 67% comprise 5 to 29 employees, those are considered small businesses, and approximately 22.3% have less than 5 employees that belong to the category of micro-business, following Mongolia's definitions of MSMEs. It is interesting to note that almost all MSMEs in the sample 84.1% carry out their activities using both channels, online and offline. It shows that most of these MSMEs are using the online channel to support their business, while the brick and mortar store is still considered essential to complement their commercial operation.

3.1 PLP route modeling results

To test the proposed framework developed in this study, the PLP was used for both the measurement model and the structural model for data analysis.

Table-2 shows the matrix of outer weights for the formative constructs, /PCB & PCV/. According to Table-2, only "Clients can register and set up personalized accounts" /PCB2/ and "Clients are better served online" /PCB3/ were the best to be used as the manifest variables to describe the benefits. Perceived for the client (<0.05).

Table-2 Matrix of external weights for / PCB and PCV /

	Sample	Deviation	Statistic	P Values
PCB1 ->PCB	0.168	0.132	1.090	0.220
PCB2 ->PCB	0.472	0.114	3.843	0.000
PCB3 ->PCB	0.479	0.119	3.724	0.000
PCB4 ->PCB	-0.017	0.145	0.043	0.859
PCB5 ->PCB	0.157	0.135	1.162	0.192
PCV1 ->PCV	0.286	0.103	2.458	0.009
PCV2 ->PCV	0.108	0.125	0.755	0.315
PCV3 ->PCV	0.505	0.164	2.956	0.001
PCV4 ->PCV	0.395	0.123	3.054	0.001

Besides, there were only three elements in the construction of perceived competitive value that was significant to be included in the analysis.

Therefore, only 16 elements were processed in the model and then prepared by the PLP evaluation. To test the importance of the route coefficient of the proposed framework, the authors used the bootstrap algorithm. Figure-1 shows the result of the PLP evaluation of the proposed framework.

The evaluation of the proposed framework includes the estimation of the trajectory and the coefficients of R^2 in this study.

It is interesting to note that all the routes are confirming expectations of the model, that is significant at the 0.05 level, except the route between the perceived benefits of the client as the driving factor and the benefits of cost reduction. To obtain the world validity of the model; Measure for modeling the PLP trajectory. The calculated value is 0.748 that exceeds the cutoff point of 0.32. It shows that the model works well.

IV. CONCLUSIONS

Several results appeared from this study. First, empirical results show that when MSMEs adopt electronic business to provide better online customer service, it allows these companies to keep customers and at the same time improve their links with business partners and suppliers; However, supplying better customer service may not necessarily lead to cost reduction. This is because, in this research, the benefit of cost reduction was not only associated with the transaction cost. Instead, it covers all aspects of business expenses, such as management, marketing, production, etc.

In summary, this study has supplied empirical evidence to understand how external factors, that is, customers and competitors, can influence the type of benefits that MSMEs could obtain by adopting electronic business in the business. The authors believe that these first results will stimulate others to take part in new research that will help MSMEs, the seedbed of our economy, to excel in the electronic world.

REFERENCES

- [1] Acılar, A., & Karamaşa, Ç. (2010). Factors Affecting the Adoption of E-Business by Small Businesses: A Case Study. doi: <https://doi.org/10.2139/ssrn.1700643>.
- [2] Kartiwi, M. (2010). *Electronic Business Adoption in Small Medium Enterprises: Indonesian Urban and Rural Perspectives*. LAP Lambert Academic Publishing.
- [3] Mazzarol, T. (2015). SMEs engagement with e-business, e-business, and e-marketing. *Small Enterprise Research*, 22(1), 79–90. <https://doi.org/10.1080/13215906.2015.1018400>.
- [4] Kartiwi, M. (2010). *Electronic Business Adoption in Small Medium Enterprises: Indonesian Urban and Rural Perspectives*. LAP Lambert Academic Publishing.
- [5] Bi, R, Davison, RM, Smyrnios, KX (2014). E-Business Use and Value for Fast Growth Small-to-medium Enterprises in Turbulent Environment. Paper presented at the PACIS 2014 Proceedings.
- [6] Tornatzky, L, & Fleischer, M (1990). The process of technology innovation, Lexington, MA. In Lexington Books. Trott, P. (2001). The Role of Market Research in the Development of Discontinuous New Products. *European Journal of Innovation Management*, 4, 117–125.
- [7] Robinson, EA (2012). Exploring the Barriers to Online-Business Profitability for Small Business. Northcentral University. Sin, KY, Osman, A, Salahuddin, SN, Abdullah, S, Lim, YJ, Sim, CL. (2016). Relative advantage and competitive pressure towards implementation of E-business : Overview of small and medium enterprises (SMEs). *Procedia Economics and Finance*, 35, 434–443.
- [8] Grandon, EE, & Pearson, JM. (2004). Electronic business adoption: an empirical study of small and medium US businesses. *Information & Management In Press*, Corrected Proof.
- [9] Lin, H-F. (2006). Interorganizational and organizational determinants of planning effectiveness for Internet-based inter-organizational systems. *Information Management*, 43(4), 423–433.
- [10] Quayle, M. (2002). E-business : The challenge for UK SMEs in the twenty-first century. *International Journal of Operations & Production Management*, 22(9/10), 1148.
- [11] Mustafa, S, & Beaumont, N. (2004). The effect of electronic business on small Australian enterprises. *Technovation*, 24(2), 85–95.
- [12] Poon, S, & Jevons, C. (1997). Internet-enabled international marketing: a small business network perspective. *Journal of Marketing Management*, 13(1), 29–41.
- [13] Quayle, M, & Christiansen, JK (2004). Business issues in the 21st century: An empirical study of e-business adoption in the UK and Denmark SMEs. In *Electronic business in small to medium-sized enterprises: Frameworks, issues, and implications*, (pp. 53–68). IGI Global.
- [14] Ratnasingam, P. (2002). Perceived versus realized benefits in e-business adoption. *Malaysian Journal of Library and Information Science*, 7(2), 57–68.
- [15] Xu, M, Rohatgi, R, Duan, Y (2008). E-business adoption in SMEs: Some Preliminary Findings from Electronic Components Industry. In *Electronic government: Concepts, Methodologies, Tools, and Applications*, 879–897.
- [16] Kartiwi, M. (2010). *Electronic Business Adoption in Small Medium Enterprises: Indonesian Urban and Rural Perspectives*. LAP Lambert Academic Publishing.
- [17] Koenig, W, & Wigand, RT. (2004). Globalization and E-business : Diffusion and impacts of the internet and E-business in Germany. *I-WAYS, Digest of Electronic Business Policy and Regulation*, 27(3, 4), 197–227.
- [18] MacGregor, RC. (2004). The role of strategic alliances in the ongoing use of electronic business technology in regional small business. *Journal of Electronic Business in Organizations*, 2(1), 1–14.
- [19] The Statistics Portal Internet penetration rate in Mongolia from 2005 to 2016, Retrieved from <https://www.statista.com/statistics/767547/internet-penetration-rate-mongolia/>

- [20] Zhu, K, Kraemer, KL, Dedrick, J. (2004). Information technology payoff in e-business environments: An international perspective on value creation of e-business in the financial services industry. *Journal of Management Information Systems*, 21(1), 17–54.