

E-commerce Model Adoption by Small-Medium Enterprises for Business Development



Maryani, Meyliana, Achmad Nizar Hidayanto, Harjanto Prabowo

Abstract: *Electronic commerce (e-commerce) related to the internet for buying, selling, transporting, or exchanging info, products, or services. There are many advantages of e-commerce, including operational Benefits like the one global reach, cost reduction, promoting Issue Prevention, optimizing the supply chain, and always opening up business. That nation has SMES, and SMES is the largest foreign exchange earners in the country to be able to compete, with SMES being able to expand their transaction business via the Internet. The aim is to determine critical factors in the adoption of e-commerce for SMEs. That first analysis presented a comprehensive review of the literature onto the context for e-commerce research These methodology is divided into several parts: determination of research sources, identification of keyword structures for process search, implementation of criteria for inclusion and exclusion, extraction of data, and review of findings to address scientific questions. From the result of the literature research, there are several main factors for SMEs to adopt e-commerce such as Technological Factor that consists of : interception, Relative Advantage, Compability, IT infrastructure, Security. The Organizational factor consists of : Involvement & consistency, Top Management support, Financial Resources, Human Resources. External Factor consists of: competition aong organizations, and government support. And the individual factors are behavior to counsumer, excellent service, education, & computer Skill.*

Keywords: e-commerce, Adoption, SMES

I. INTRODUCTION

Electronic commerce (e-commerce) related to the internet for buying, selling, transporting, or exchanging info, products, or services. There are many advantages of e-commerce, including operational Benefits like the one global reach, cost reduction, promoting Issue Prevention, optimizing the supply chain, and always opening up business [1]. Enterprise (SMES) leads to autonomous profitable enterprise, operated by individuals or an

organization which is not a branch and controls, also directly or indirectly controls or possesses a part of a large company [2].

Production of SMEs is an incredibly important pillar of efforts to achieve regional integration. In most ASEAN countries, Micro, Small & Medium Enterprises reflect between 97-99 per cent of the business population. Micro-enterprises continue to dominate the SME market, generally It accounts for 85-99 per cent of enterprises (where data are available) solving problems. There is indeed a small proportion of medium-sized enterprises throughout the region as a whole, which may imply a "missing center" in the economic structure of the region [3]. SMEs provide for almost 66.3 percent (based on the percentage) of 15 and 42.2 percent of gross value added employment.16 While these figures should be treated with caution;

17 they suggest that SMEs' productivity and growth may lag behind larger enterprises [3]. E-commerce has many benefits towards SMES, which are expanding corporate in markets, increasing sales, improving communication, improving corporate image, accelerating process, and increasing employees productivity [4].

The metastudy is used to address the research questions about e-commerce adoption in small and medium-sized enterprises.

This paper addresses the following questions: "what Critical success factors for e-commerce adoption by Small Medium Enterprises?"

While this research aims at finding an important determinant criticals success factors for e-commerce adoption by SMEs

This research is expected to be able to make conclusions in determining what criticals succsess factors in adopting e-commerce by SMEs that help increase the business.

II. LITERATURE STUDY

A. About Ecommerce and the World Wide Web (WWW)

The adoption of technology utilization of internet as the medium of communication, either to communicate with consumers or as a transaction media can be found in e-commerce. Many opportunities for entrepreneurs provided by using ecommerce and WWW to develop the business and expand its network and promotions globally [5].

B. World Class

Alongside of the global economies, it has provided maximum business opportunities for SMEs to expand their business widely.

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Including international scale, the global [1] economy encourages SMEs not only thrive the country but also enter the international scale. These could be functioning obviously with the internet and websites.

E-commerce for SMEs

Statistic shows how acceptance of e-commerce is still far behind from big companies, especially by developing countries. Moreover, companies such SMEs are expected to thrive in the new economic age—the information period. The adoption enterprises will also set out non-adopting ventures to adopt [6]. The adoption of innovation by using e-commerce marketing applications have various stages before the member of SMEs deciding to accept or reject the innovation [7].

III. METHODOLOGY OF RESEARCH

That first analysis presented a comprehensive review of the literature onto the context for e-learning research. These methodology is divided into several parts: determination of research sources, identification of keyword structures for process search, implementation of criteria for inclusion and exclusion, extraction of data, and review of findings to address scientific questions.

A. Searching Process

The first phase is to identify the source of the literature in order to identify a suitable article / journal. The selected articles for literature review of literature are as adopts:

Science Direct (www.sciencedirect.com), Taylor Francis (taylorandfrancisgroup.com/journals/), EEEXplore Digital Library (<http://ieeexplore.ieee.org>), Springer(link.springer.com), ACM Digital Library (dl.acm.org), Emerald Insight (www.emeraldinsight.com), Wiley Online Library (onlinelibrary.wiley.com), Proquest (<http://www.proquest.com/>)

Those success factors in e-commerce adoption by Small-Medium Enterprises are technology, organization, environment, individual, subjective norm, and national goals [8]. The keyword pattern used to locate the research paper that was relevant to answering the research question is generated using to sort the data, boolean operator allows us to define the priority of searching the data based on the used symbols. This paper does use symbols that are used. This paper employs symbols and Boolean operators, analogous to OR and AND. The Keyword variations are as follows: Adoption or acceptance and (Electronic and commerce) or e-commerce and (Small medium enterprises or SMEs)

Exclusion Criterion as shown in table 1 are necessary to remove paper that is not appropriate for the criterion,

- Published year before 2014
- Duplicating papers and omitted from the same analysis in SLR
- Papers not in full text
- Gray literature and papers

Table-1. Inclusion Criteria SMEs

Phase	Task
Phase 1 : Studies Found	Match papers about ecommerce adoption
Phase 2: Candidate Studies	Collect papers about small medium enterprises

Phase 3: Selected Studies	Read papers that can answer the research question
Phase 4: Evaluation	The findings of the reading of the paper are harmonized with the ecommerce adoption

From the studies column found that study candidates considering the article that obtained 183 field of research and extensive research among large scale companies, medium-scale companies, and the small-scale. Next is to collect 83 articles related to SMEs. And the final step is to review literature based on article's review object focus – SMEs, as well as to answer research question – success Factors to SMEs' adoption of e-commerce.

The data extraction process began in November 2019 and looked at 183 papers with keyword searches from the above list to the literature sources. After reading the abstracts, there are 83 papers which become candidates and 34 papers were selected for review with the information as shown in Table 2 after thorough reading and on the basis of exclusion criteria

IV. RESULT AND DISCUSSION

Table-2: Data Extraction In Inclusion Criteria

Source	Found	Candidate	Selected
ScienceDirect	110	50	19
Taylor & Francis	11	6	2
IEEE	10	8	4
Springer	10	4	2
ACM	8	6	2
Emerald	9	4	0
Wiley Online Library	20	5	1
proquest	5	4	4
Total	183	83	34

From the 34 selected articles based on author, journal and study location, the data shows that the largest research mostly conducted in Indonesia (table 1). This is due to lack resource skills in managing IT and lack of knowledge in managing the organization [9]. And the other determining factors in adopting e-commerce are the benefits to the business owners, technological readiness, owners' innovations, as well as IT capability and experience of the owner [6].

Table-3.. Author(s), year, journal and study location of the 34 papers on adoption ecommerce assessed by SMEs in this study.

Author/year	Journal Name	Study Location
Abhimanyu et al. (2016) [10]	Procedia Engineering	
Abou et al. (2015) [11]	Tourism Management	
Ahuja et al. (2016) [12]	Procedia Computer Science	India
Anna Yu et al. (2019) [13]	Institute of Scientific Communications Conference : ISC	
Carvalho et al. (2018) [14]	Augmented Reality Law, Privacy, and Ethics	Portugal
Clara et al. (2016) [15]	Procedia Computer Science	
Dahbi and Benmoussa (2019) [16]	Procedia Computer Science	Maroco
Dalvi et al. (2018)	Economics & Sociology	Iran

Dariusz (2015) [17]	Procedia Economics and Finance	Polandi
Elizabeth et al. (2016) [18]	Journal of Computer Information Systems	Chile
Falk et al. (2015) [19]	International Journal of Production Economics	
Feni..(10) et al. (2019)	International Conference on Computer & Communication Systems (ICCCS)	Indones ia
Ghani et al. (2017)	Procedia Computer Science	Malaysi a
Hamad et al. (2018) [20]	Briefings in entrepreneurial Finance	
Hasani et al. (2016) [21]	Telematics and Informatics International Conference on Software Engineering and Information Management	Indones ia
Iswari et al. (2019) [9]	International Conference on Cyber and IT Service Management (CITSM)	Indones ia
Kareen et al. (2018) [8]	Procedia Economics and Finance	Malaysi a
Kit Yeng Sin et all (2016) [22]	International Journal of Information Management	
Mamonov and Fich (2017) [23]	European Journal of Information Systems	UK
Mendo et al. (2017) [24]	Telecommunications Policy International Conference on Advanced Computer Science & Information Systems (ICACSIS)	Spainol Indones ia
Muñoz et al. (2018) [25]	Campbell Systematic Reviews;	
Muslim et al. (2016) [26]	Procedia - Social and Behavioral Sciences	Indones ia
Piza et al. (2016) [27]	Eurasian Business Review	Indones ia
Rahayu and Day.. (2015) [28]	International Journal of Arts & Sciences	India
Rahayu and Day (2017) [4]	Proceedings of the Seventh International Conference on Information & Communication Technologies and Development	Nigeria
Raj et al. (2017) [29]	Journal of Business Research	Malaysi a
Ritse and Heeks.. (2015) [30]	Transportation Research Procedia	Austalia
Sherah et al. (2015)	International Conference on Cyber and IT Service Management (CITSM)	Indones ia
Stokoe et al. (2019) [31]	Journal of Cleaner Production	Italy & Jerman
Triandini et al... (2014) [32]	Government Information Quarterly	
Trianni et al. (2019) [5]	Economics & Sociology	UK
Warkentin et al. (2018) [33]	Computers & Security	
Xuhua et al. (2019) [34]		
Zareef and Gurvirender (2017) [35]		

The result of Geographic Distribution in 34 papers, the largest study location in Indonesia is 20.59 %, Malaysia (8.82%), UK (5.88%), and India (5.88%). These four countries are widely successful in the field of e-commerce research for small-medium enterprises. Identify some significant influence of environmental pressure with various ecommerce technologies, organization and national readiness. These have different influences in various ecommerce technologies [10]

Table-4. Methods of analysis used in 34 articles on ecommerce adoption analyzed in this report

Details of methods	Nos
Case study	2
Field surveys & Samples	1
Interviews	2
Literature analysis	7
Observations	7
Questionnaires	8
Surveys	7

Based on the result of several researches, the highest method of research is from questionnaire established from 8 out of 34 papers with Objective research. Researchers from Indonesia, Malaysia, UK, and Iran altogether in Travel sector [11], [12], Ritel [10], Seller [13], [14], [15].

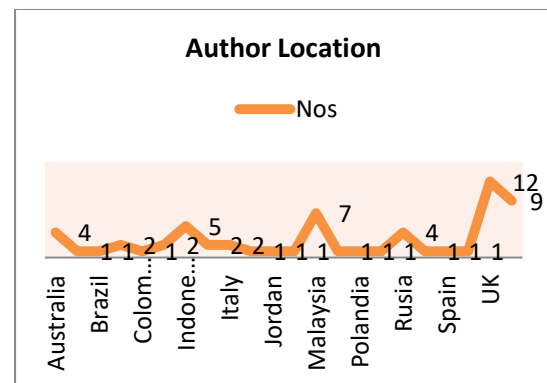


Fig. 2. Geographic Location University by Authors.

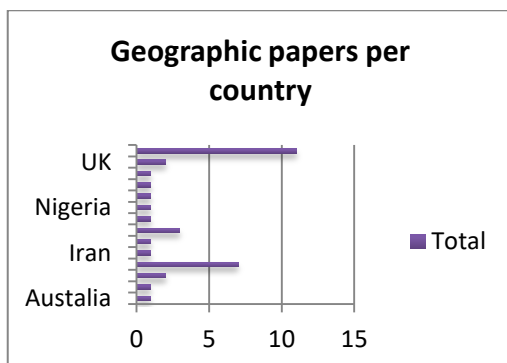


Fig. 1. Geographic distribution of the 34 papers one commerce adoption evaluated in this report, using shading representing the number of research papers per country.

The concern about researches in UK for higher SMEs makes researchers who do e-commerce in SMEs build some adoption systems.

The cause of system adoption are influenced by internal environmental factors, especially from the control technology [11].

Table-5: Classification of Criticals

Factors	Critical	References
Technology Factors	Intercept	[13], [4], [7], [14],
	Relative Advantage	[15], [16], [17], [18],
	Compatibility	[19], [20], [21], [22],
	IT Infrastructure	[23], [24], [25], [26],
	Security	[27]
Organizational Factors	Involvement & Consistency	[12], [28], [10], [29], [30], [31]
	Top Management Support	
	Financial Resources	
	Human Resources	



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External Factors	Competition	[8], [32], [5], [33], [34]
	Government Support	
Individual Factors	Behaviour to Costumer	[35] [36], [37], [38] [17], [35], [36], [37]
	Excellent Service	
	Education	
	Computer Skill	

From table 5: This is the interpretation about main factors during building systems of e-commerce's adaption for SMESs. Thus, there are technology factors from many resources such as: interception, Relative Advantage, Capability, Infrastructure, Security. However, Organizational factor, such as: Involvement & consistency, Top Management support, Financial Resources, Human Resources. External Factor from: competition between organization, & government support. Withal individual factor are from: behavior to consumers, excellent service, education, & computer Skill.

V. PROPOSE MODEL ADOPTION ECOMMERCE FOR SME

In adopting e-commerce, factors that should be determined are not only technology, organizational, individuals and external, but also politics and national stability that bring impacts to business and economic developments which can be considered as key factors. The researchers design a model to adopt e-commerce adoption to be implemented in the organization for determining the success of the business.

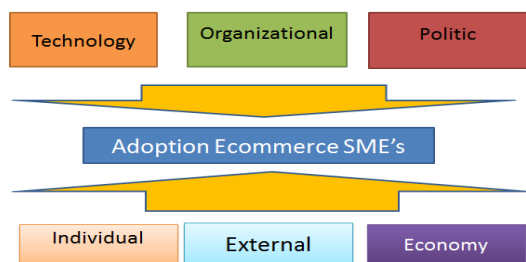


Fig. 3. Model Adoption Ecommerce SMEs

The other factor that has already mentioned in table 5. There are several things which are important in adopting e-commerce for SMEs. Another economic factors that are seen from the level of economic development country. As well as political factors that occur in countries as an influence of economic development.

VI. CONCLUSION

Based on the results of research that has been done on SMEs about main-operation factor SMEs due to adopting e-commerce systems, conclusions are as follows:

Depend on SMEs in adopting e-commerce as known as a technology readiness. This means the first and most dominant factor in the driving of SMEs in adopting e commerce. The most encouraging subfactor company's technical strength and quality of labor. The quality of its workforce is an important subfactor through technological readiness. Because the quality of manpower is directly having relation to the operation of the company that used e-commerce. The internal company is the third factor that encourages micro

and small business through e-commerce. With the internal factor of the company, the most encouraging subfactor are the main factors of the company. External company is the second factor that encourages business. On the external factors of company, subfactors are external pressures of encouraging. External pressure is in the form of consumer demands. Consumer demand is convenient and practical in conducting transaction such as, by using e-commerce. Some majority company adopts e-commerce as an enterprise of small size. They are must persist their efforts so that the company can adopts e-commerce. Technology readiness factor are the most important factor in adopting e-commerce. The company can't adopt e-commerce when the company is not ready about technology systems. This work has two key hypotheses and practical implications.

As a hypothesis, the result could be a guide for e-commerce research in the academy For SMEs, these results can be used to identify some factors through the success adoption of e-commerce that has to be practiced in business. SMEs must compete by increasing knowledge in IT Field, especially the additional of skills in its sources. Finally, In adoption e-commerce, factors that should be recognized are not only technology, organizational, individuals and external factors, but also policies and national stability that have an impact on business and economic growth that can be integrated as key factors.

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