

The Role of e-Commerce: A Systematic Literature Review

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Abstract—The implementation of digitalization in industrial sector surely gives impact to several sectors, particularly in business. The development of information technology and rapid economic globalization have initiated the role of e-commerce in economic trading activities over the globe. It takes numerous of researches to initiate online new business. Therefore, it is important to reveal the existence of gap among previous researches. Systematic literature review method is applied to analyse the role of e-commerce in trading activity as well to provide the improvement for future researches. As many as 28 e-commerce related literatures are analysed comprehensively and systematically based on protocol review. The result of research confirms the opportunity for future research on e-commerce system that enables the integration on business processes. The supporting variables of e-commerce include business branding, social and economic development, efficient system e-commerce platform, framework application.

Keywords—e-commerce, platform, business process, systematic literature review

1 Introduction

The evolving era leads to versatile activities. From the way of thinking to the methods in keeping up the activities that are supported by digitalization. The implementation of digitalization provides impacts on several sectors, especially in business sector. Both electronic information technology and economic globalization have been developed rapidly that put e-commerce's role to predominate the economic activities in many countries [1]. One of the activities of business process is web-based purchasing, by buying the goods are posted by the company, which sell and send the products through the internet [2].

To align the recent technology era that supported by the internet, several innovations are merged to form a method, called as online shopping. It utilizes a platform that specifically designed to support business process. Several things that should be considered in e-commerce, among others is the requirements of development by adopting the effective risk management technique in maintaining certain aspects, such as artificial

intelligence, financial information, trade secret among companies over information source that its misused regarding to online activities will lead to serious threat [3].

It requires many researches for initiating new online business as well as active data, technology-based integration, financial platform, and volume of products that could be retrieved [4]. Recently, there are numbers of researches in the form of proceeding and journals related to e-commerce implementation. The researches include factors, such as sample, population, sector and area that could be directed to the research gap. The focus towards existing gap could support future researches as well as to maintain the previous research. The research was taken using systematic literature review methods to see the gaps that occurred. This looks at the latest research based on perspective in the global scope. Looking at the perspective compared globally can create an opportunity for an update on business processes with the aim of knowing the achievement of business segmentation and factors that affect the global scope. Therefore, the improvement for problems will be carried out as well as sustainability of research.

2 Research method

Systematic literature review is the method designated for this research. It reviews 28 literatures that related to the implementation of e-commerce. This research is performed in detail and structured manner. It is initiated with problem identification originated from literature reviews, followed by the literatures filtering and analysis of the result. The topics are derived based on the initial topics determination that later will be treated as literature analysis. The alignment of topics and literatures is reviewed through analysis of problems, so the gap will be shown to convey the novelty of the research.

2.1 Plan the review

The systematic literature review method is initiated by planning the topic that will be discussed for the entire research. The topic-related literatures should be determined at the first place. Later, keywords are applied in the searching process for literatures by previously determining the suitable keywords to perform detail and specific writing in finding the subject, object and case study. Then, the scope of the research is generated in general context by using the keywords. The topics include the basis of e-commerce existence, the implication and the factors that could influence the importance of e-commerce towards recent technology development.

This research applies literatures that are published in one of the journal publisher websites, which is Proquest. The search of literatures in certain website is purposed to itemize the scope of research to ease the research writing. The keywords are e-commerce, platform, business process, and systematic literature review. The keyword selection is also adjusted to the topics of discussion that will be examined to provide limitation in searching the literatures.

2.2 Apply screening criteria

Next stage comprises planning and the collection of literatures, called as screening. It is designated to filter the literatures based on determined topics. In screening process, additional limitations are also set, such as year of publication. This research limits the literatures to the last 3 years. Type of literature is journal which applies English as the language selection. The limitations in screening process are assigned to focus the research on the existing problems, to ease the analysis of literature review.

2.3 Analyze the review

The last stage in Systematic Literature Review method is topics discussion towards problems that previously identified in the literature review. Related analysis is carried out that originated from the result of screening criteria. Each problem could be derived from existing gap in the current literatures. By employing the review protocol, there are three things that should be identified, which are bibliography, detail of case study, focus and content publication. Bibliography consists of name of the author, year of publication, title of publication, type of publication, name of publication and scope of publication. Detail of case study consists of object of case study, method, sample and population as well as analysis model. Focus and content publication stage comprises research motivation, the objective of research, finding description, the advantages of research, the disadvantages of the research, and opportunity for future research. Review protocol could be seen in Table 1, by using one of samples derived from literatures.

Table 1. Review protocol

Bibliography		
Author(s)	Name of the Researcher	Gagan Jain
Year	Year the research published	2019
Title	Title of the publication	Marketing Strategies for e-Commerce Business
Type of Publication	Kind of the publication	Journal
Name of Publication	Name of the research	AAYAM: AKGIM Journal of Management, 9(2), 30–33.
Scope of Publication	Scope of the research	International
Details of Case Study		
Object of Case Study	Object of the publication	Strategy of e-commerce selling with basic marketing tools and selling
Method	Method(s) used for publication	Observing the online digital technique by websites
Sample and Population	Sample and population used for publication	E-Commerce: Amazon
Model Analysis	Model used for analysis	Analysis identification

(Continued)

Table 1. Review protocol (*Continued*)

Bibliography		
Author(s)	Name of the Researcher	Gagan Jain
<i>Focus and Content Publication</i>		
Motivation	Reason(s) to make research	Marketing strategy for e-commerce selling that serves deeper study regarding to basic marketing tool and selling that could provide benefits with real advantage and eventually provide customers with delivery experiences
Goals	Descriptive of the research	Providing the complete explanation on various techniques of digitalization for products' visibility by considering the algorithm system as well as customer's behaviour. Review the initial strategy due to popular brand or title.
Advantages	Advantages to this research	Focusing on the brand that appropriate for customers, then it could improve its proper digital visibility for real time selling and customers' experiences.
Disadvantages	Disadvantages to this research	It requires more data for product and technology comparison.
Opportunity	Future research	The alternative strategy implementations for different countries and industries.

3 Result and discussion

Last stage in systematic literature review is to perform an update on topics of the problem. The topic is e-commerce, that is defined as the platform, which is accommodated for trading transaction. There are 28 international journals to be identified by employing review protocol. Hence, the results are accumulated in Table 1.

3.1 Bibliography analysis

The analysis result for bibliography of 28 literatures is presented in the form of graph. Figure 1 represents numbers of literatures that are published for the last 3 years, in 2019 with 22 literatures, in 2020 with 5 literatures and in 2018 with 1 literature.

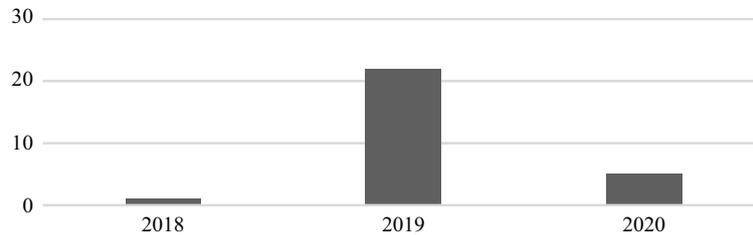


Fig. 1. Year of publication

The scope of literature is international journal. The number of journals that ranged from 2018 and 2019 reveals the significant result. More researches were carried out in 2019 instead of 2018. It indicates rapid development in e-commerce during those years that attracts the researchers in performing studies in such field. The technical approach used in this method includes literature reviews that are related to the topics of business economy. Retrieve from multiple journal sources based on the topics. The type of publication for literatures is journal, 1 literature is derived from the Journal of Business Economics and Management for, 1 literature from Journal of Information and Telecommunication, 1 literature from Journal of Internet Banking and Commerce, 1 literature from Journal of Pharmacy and Bioallied Sciences, 1 literature from Journal of Shipping and Trade, 2 literatures from Journal of Theoretical and Applied Electronic Commerce, 1 literature from Knowledge Horizons – Economics, 2 literatures from Library Philosophy and Practice: Lincoln, 1 literature from Management Review: An International Journal, 1 literature from Marketing Strategies for e-Commerce, 1 literature from NIM Marketing Intelligence Review, 1 literature from Plos One, 1 literature from SUMEDHA Journal of Management, 1 literature from Technology Innovation Management Review, 1 literature from Telkomnika, 1 literature from The China Quarterly, 2 literatures are originated from The International Journal of Organizational Innovation, 1 literature from Academy of Entrepreneurship Journal, 1 literature from Academy of Strategic Management Journal, 1 literature from Applied Science, 3 literatures from China Economist, 1 literature from Electronic Markets, and 1 literature is derived from IJMRR. Entire literatures are internationally acknowledged.

3.2 Detail of case study analysis

Numbers of internet users attract the company owners to try online business. Consequently, more conventional companies run their business online. The utilization of internet in performing the business has initiated new form of transaction between buyer and seller, well known as e-commerce [5]. Figure 2a describes the background or motivation of 28 reviewed literatures. Based on the analysis result, the highest of the amount literature mentions for motivation of the research is the technology development in e-commerce is 10. Sophisticated technology owned by users could become a key to create different shopping experiences that are practiced by customers and provides benefits to retailer, such as the improvement of traffic, conversion and basket or efficient operational cost [6]. In addition, the other motivations for performing the research are

e-commerce performance with 6, e-commerce effectivity is 5, e-commerce activity is 5 and others motivation measured is 2.

Figure 2b illustrates the result of methods that are employed in this literature review for the research. The empirical study is determined as mostly used method in reviewed literatures, is 11. Later, theoretical analysis method is 9, statistics calculation is 6 and others method is 2.

Figure 3 describes the area of research case study. Websites are considered as the biggest area for case study based on e-commerce. It is due to the existence of high relation between website utilization in the implementation of e-commerce. Other areas that contribute for the case study t the literature review. China is 8, Website is 7, Indonesia is 4, Kazakhstan is 1, India is 1, Nigeria is 1, Bangladesh is 1, UAE is 2 and Unknown area is 3.

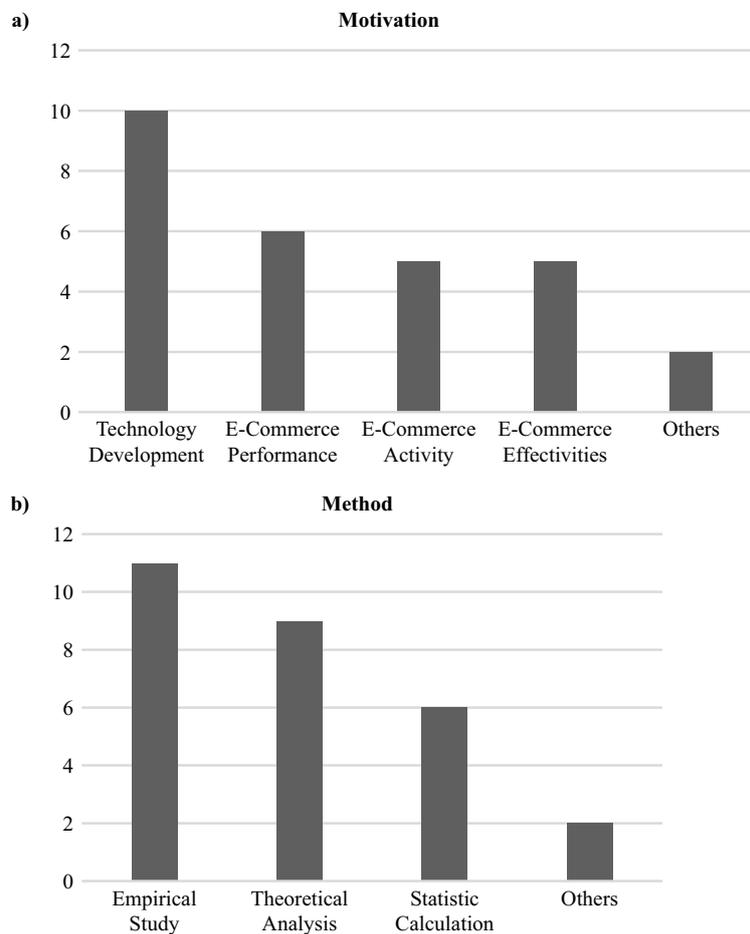


Fig. 2. (a) Motivation; (b) Method

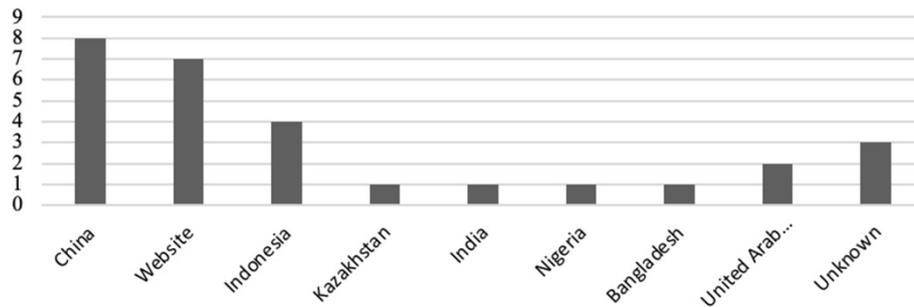


Fig. 3. Study case area

3.3 Focus and content analysis

The development of e-commerce is characterized as dynamics, fast growing and competitive [7]. Rapid development of e-commerce business allows people to establish new business, since it takes less cost to initiate the business [8]. The importance of e-commerce could be acknowledged, since recently it becomes powerful selling tools and marketing for the company to obtain visibility, to reach the targeted customers instantly in its purpose to fulfil business objective [4]. The division of Customer Relationship Management (CRM) could easily record the data of customers' behaviour. It enables the company to prepare individual items, related items or merges them as an offer based on existing preferences as shown by purchased or visited items [9].

Once the investment in e-commerce business is increased, the necessities to adopt effective risk management technique are also developed, to protect the related aspects as well as artificial intelligence, financial information and trade secret among elements of other companies' information resource [3]. Other factors, such as level of education, urbanization, and social media users are identified significantly related to the potency of e-commerce [5]. Figure 4 presents the graph of basic supporting variables for e-commerce.

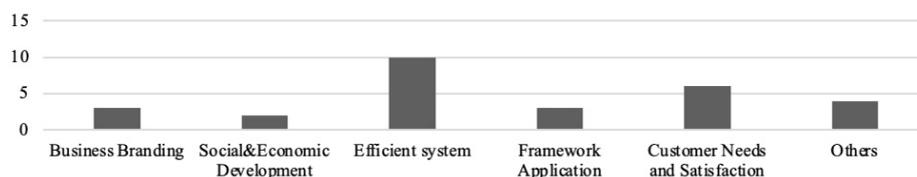


Fig. 4. Support variables for e-commerce

Based on Figure 4, it could be resumed several supporting variables that are used as basic ground in e-commerce. They are designed to establish the effective and efficient internet-based business process. Future opportunity for business process will be well-designed if all supporting variables could be included, to improve existing system.

Variables in business branding is defined as content that oriented to business of creation performed by amateur or professional with the intention to system replacement, which is different with traditional content as well as content definition employed by users in social trading [10]. The existence of proper content could promote the business brand itself. It can be said that business branding is formed to establish the brand recognition towards people.

Based on the analysis of variables in social and economic development are considered in initiating business process, not only relies on technology transformation but also the effect on social and economy. The role of human resource and benefits of future business process could lead to effectivity. The growth of e-commerce business has significant effect towards service demand, product’s delivery, in which per capita income participates in increasing the demand.

Other analysis from the variables of efficient system in e-commerce platform significantly enhances the company’s probability and volume of export; e-commerce platform enables the company to export various of products to many countries by reducing the cost of market threshold, information and export, while increasing the trading efficiency [11]. By considering to the e-commerce system effectivity, then a system could be built to ease the workers and customers in real online buying, such as price comparison, product’s rating, and preferences factor, which is the best offer and information. Availability has high correlation with online customers behaviour [2].

The application of software used in business processes. Variable of framework application is designated to identify the system and security process of established e-commerce, by providing a framework in the form of simulation model for agent-based e-commerce, in which the agent interacts with seller through broker, analysing seller’s behaviour and tendencies, creating many market rules that represent each difference level of competition and purchase options [12][29][30]. Supporting variables also determined by necessities and customer’s preferences. E-commerce with proper system could increase customers’ satisfaction level. Since it could ease the customers while performing business process.

3.4 Research gap

After accomplishing systematic literature review towards 28 literatures, research gap is then formulated. Table 2 represents the research gaps that are designated for future research opportunities.

Table 2. Research gap

Opportunity	References
Research Development	[6],[10],[13],[14],[15],[16],[18],[19]
Being tested with larger sample	[4],[20],[21]
Being tested in different countries	[4],[17]
The relationship between customers and sellers	[22],[23]
Qualitative assessment	[24],[21]
Being tested with different case study	[25],[19]
The test on customer’s perspective	[26]

Research opportunity is organized based on numbers of supporting literatures. There are six literatures which support research development, both for research model and technology aspect. The test which is carried out with larger sample is supported with 3 literatures. The test that employs different countries as the object, to identify the comparison result among countries is supported by 2 literatures. The measurement for relationship between customers and sellers through e-commerce is facilitated with 2 literatures. Qualitative assessment is supported with 2 literatures. The assessment on case study with the same method is accommodated with 1 literature. The test on customer's perspective towards e-commerce service is supported by 1 literature. Furthermore, it could be said that e-commerce research includes not only economic and technical aspects but also the aspect of social and its consequences [27][31].

4 Conclusion

E-commerce is an activity and application that could be accomplished through the utilization of its infrastructure that supported by five factors categorization, presumed as foundation of trading, such as people, public policy, marketing and promotion, supporting services and partnership business [28]. Based on the authors analysis result involving systematic literature review, it is concluded that e-commerce could be engaged to achieve effectivity and efficiency in business process. The existence of integrated system is designed to merge inter-elements, such as customers, producers and distributors. The integration leads to single system utilization that could reduce the risk of failure in business process, as well as designated to expand business network. One thing should be considered is the quality of the websites, to simplify the communication of existing business process.

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