

ADOPTION OF E-COMMERCE BY SMES: INTERNAL READINESS AND GOVERNMENT SUPPORT

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Abstract--- *SMEs, as the majority form of business in Indonesia, must be able to adopt e-commerce technology in order to serve their customers better. The government is also obliged to support the use of e-commerce for SMEs since this business unit is the primary driver of the local economy. Therefore, this paper aims to study the level of SME readiness to implement e-commerce, especially in financial, human resources, and supporting infrastructure aspects. This paper also investigates the level of satisfaction toward government support. The research is a quantitative study using a Likert-Scale questionnaire as an instrument for collecting data. The respondents were 215 SMEs in Bogor Regency who had obtained assistance from the government. The results show that SMEs have demonstrated adequate readiness in the information technology infrastructure aspects, as indicated by high scores on the ease of internet access. SMEs have not shown readiness in financial aspects indicated by a lack of capital and investment plan. The respondents also have not shown readiness in the aspect of human resources indicated by a low level of awareness of the benefits of e-commerce. Meanwhile, SMEs have shown a high level of satisfaction toward e-commerce support from the government, especially in terms of providing training. However, respondents have a low level of satisfaction in the funding program and the sustainability of government support.*

Keywords--- *E-commerce, SME, Financial, Human Resources, Government Support.*

I. INTRODUCTION

Small and Medium Enterprises (SMEs), play an essential role in the national economy. Ministry of Cooperatives and SMEs states that the number of SMEs in Indonesia is 6.21 million units or 99.5 percent of all types of businesses in Indonesia (Central Bureau of Statistics, 2017). From the aspect of employment, SMEs also contribute to the absorption of more than 114 million workers (Central Bureau of Statistics, 2016).

Looking at the vital role of SMEs in the national economy, the Government should provide support for improving the performance of SMEs. Especially that Indonesia enters the industrial revolution era 4.0, where business competition landscape is changing due to rapid advances in information technology. The progress of the internet has driven changes in the business environment where the traditional market definition becomes irrelevant.

Technological developments encourage changes in traditional marketing strategies to be internet-based, or often known as e-commerce. The use of e-commerce allows businesses to reach consumers outside of geographical boundaries. From the consumer side, e-commerce also makes it easier to find products that match the benefits they need in an affordable price.

Changes in the business landscape positively influence SMEs. SMEs tend to be associated with conventional ways of doing business. These conventional ways carry risks that may burden SMEs

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performance. The most obvious is SMEs market share will be taken by companies that have implemented e-commerce. Therefore, the adaptation of SMEs to e-commerce is a necessity in order to maintain and to improve business performance.

The ability to adopt a new technology must undoubtedly depart from the awareness of SMEs, in this case, business owners, to adopt e-commerce technology in their business. The process of technology adaptation must, of course, be followed by readiness both in financial aspects, human resources, and supporting infrastructures such as accommodating computers and the internet in business processes. Besides, the government is also obliged to provide various supports in order to accelerate e-commerce adoption by SMEs. Therefore, this paper aims to study the level of SME readiness to implement e-commerce, especially in financial, human resources, and supporting infrastructures aspects. This paper also investigates the level of satisfaction toward government support.

II. LITERATURE REVIEW

The Ministry of Industry has issued SME roadmaps in the era of industrial revolution 4.0. In this document, the Ministry of Industry states that the industrial revolution 4.0 is characterized by the rapid growth of information technology and has an impact on changes in business models, both in terms of how to run business processes, marketing to consumers, and utilization of assets. The five main technologies that support the development of industrial systems 4.0 are the internet of things, artificial intelligence, human-machine interfaces, robotic technology and sensors, and 3D printing technology. In the document, the Ministry of Industry states that the main issue faced by businesses, both small, medium and large, is the potential for disruptive impacts on the entire value chain from upstream to downstream (Sisi & Israel, 2016).

Related to the implementation of e-commerce which is one of the challenges in the industrial revolution 4.0, the research found that SMEs have a shortage in technology investment that stems from limited capital (Burhanuddin et al., 2009; Stankovska et.al, 2016). Although the capital is available, management tends not to spend on technology development (Ndiaye et al., 2018). Even though the innovations resulting from technological investments have a significant impact on the development of SMEs (Krishna et al., 2012; Adeyemi et.al, 2017). Even the use of information technology will make an SME outperform other SMEs in one market, but on the other hand, there are still a few who want to adopt e-commerce comprehensively (Gunawardana, 2018). Other research also stated that limitations in exploiting the possibility of technological development due to capital constraints hampered the relative superiority of SMEs and the possibility of developing the scale of their business (Ministry of Industry, 2018).

High indirect costs also cause lack of investments on information technology. Thus, companies often overlook the importance of this investment. (Love et al.,2005). However, along with competition, the cost of implementing information technology has become increasingly affordable (Dibrell et al.,2008; Chiliya et al., 2011). This is an excellent opportunity for SMEs to increase the investment portion of technology, primarily to support e-commerce.

Another aspect that inhibits e-commerce adoption in SME business processes is the quality factor of human resources. A study states that the development of technology and the quality of human resources is a second priority after the formulation of business strategies and increased capital. The less priority certainly makes the quality of human resources unable to support the implementation of e-commerce (Gorriz et al., 2010). Other research states that to adopt technology in business, then the employees must be able to use technology in their daily activities, but this cannot be separated from other aspects, such as strict provision from the top management (Wanda, 2002).

A study states that e-commerce implementation will change the company's business processes as a whole, where human resources management will also be significantly affected (Sriram and Arumugam, 2016). There is even an explanation that states that changes in company organization due to e-commerce practices are highly dependent on changes at the individual level of everyone involved in it (Gorriz and Castel, 2010). This implies that every employee in an organization must have readiness in carrying out e-commerce-based business practices.

The existence of technology infrastructure will support an effective e-commerce implementation. A study states that the existence of technology is a significant obstacle for SMEs to develop businesses and to expand markets (Burhanuddin et al., 2009). Other study suggests that the existence and the habits of using technology, especially the internet, are the main prerequisites for implementing e-commerce effectively (Feizollahi et al., 2014). The existence of a technology infrastructure will also shape how e-commerce businesses in a company are run (Eduard and Victor, 2012). Therefore, readiness in finance, human resources, and infrastructure contributes to the readiness of SMEs to adopt e-commerce.

Governments in many countries have realized that SMEs must immediately implement e-commerce in order to maintain their business. Government support for SMEs is carried out by allocating e-commerce procurement budgets and incorporating recipients of support into macro-economic and industrial frameworks (Poorang et al., 2013). This is in line with the position of e-commerce which forms the economic network not only at the level of individuals and organizations but also reaches the state level (Al-Somali et al., 2011; Gunawardana, 2018).

However, even though the Government has provided support, the performance of SMEs still lags behind that of large companies (Chiliya et al., 2011). One reason is the quality of human resources owned by SMEs that have not been able or slow to adopt information technology (Baller et.al, 2016). Therefore, the quality and sustainability of e-commerce support for SMEs must receive special attention from the government. The assistance provided must be comprehensive, not only working on technological aspects but also covering on aspects of human resources that will run e-commerce-based businesses.

III. METHODOLOGY

This research was conducted in Bogor Regency by means of survey and interview. Data retrieval was carried out in July-August 2018 with a purposive sampling method. Respondents consisted of 215 SMEs owner/manager who were located in the Bogor Regency and had received assistance in implementing e-commerce from the government.

The questionnaire consists of two parts, where the first part is a question related to the respondent identities and his/her business conditions. Questions related to business include the type of business, monthly turnover, business age, and length of periods obtaining assistance from the government; while the second part of the questionnaire asks about the level of readiness and level of satisfaction related to government support for e-commerce implementation. This study aims to explore the level of readiness of SMEs in implementing e-commerce. Therefore, data processing is limited to the descriptive delivery of statistics followed by qualitative interviews related to the research findings.

IV. RESULTS

1) Validity and Reliability Test

There are eleven questions covering aspects of financial readiness, human resources, infrastructure, and government support. Table 1 summarizes the Pearson correlation value of each item. The Cronbach's alpha value for the items is 0.605. The value of R on the 50 samples and the significance of 0.05 is 0.2353. The value of both Cronbach's alpha and Pearson correlation are higher than the value of R. Therefore, items are valid and reliable.

2) Respondent Identities and SME Business Conditions

Questions related to the identity of SMEs owners/managers include name, address, date of interview, gender, age, marital status, and level of education. While questions related to the condition of SMEs include the type of business, monthly turnover, business age, and period of obtaining support from the government. Table 2 summarizes the respondent's personal identity; while table 3 summarizes the respondent's business condition.

Table 1 Pearson Correlation Value for Each Items

Dimension	Item Num	Pearson Correlation
Financial readiness	Item1	0.336
	Item2	0.42
	Item3	0.485
Human resources readiness	Item4	0.265
	Item5	0.352
	Item6	0.268
Infrastructure readiness	Item7	0.389
	Item8	0.278
Government support	Item9	0.293
	Item10	0.372
	Item11	0.427

Table 2 Responden Identity

	Num	Percentage
Sex		
Male	142	66.05
Female	73	33.95
Age		
17-25	54	25.12
26-34	16	7.44
35-43	91	42.33
44-52	34	15.81
53-61	12	5.58
>61	8	3.72

Education

Did not graduate from elementary school	9	4.19
Elementary school graduate	0	0
Junior high school graduate	5	2.33
Senior high school graduate	91	42.33
Diploma degree	38	17.67
Bachelor degree	68	31.63
Master /doctoral degree	4	1.86

3) The Level of Readiness of SMEs

The questionnaire given to the respondents aims to determine the level of SMEs readiness on three aspects, namely: (1) Financial, (2) Human resources, and (3) Supporting infrastructure. The questionnaire uses a Likert scale with four choices of answers, namely: (1) Strongly disagree, (2) Disagree, (3) Agree, (4) Strongly agree. After going the validity and reliability test, the question covering SME's financial readiness consists of three statements which are:

1. Plan investment in e-commerce.
2. Allocating capital to invest in e-commerce.
3. The long-term plan for developing e-commerce in business.

The statement to find out human resources readiness consists of:

1. Employees understand the benefits of e-commerce.
2. Employees support e-commerce usage.
3. Employees have received e-commerce training.

While the statement to find out supporting infrastructure readiness consists of:

1. There are already computers at the business place to support e-commerce.
2. It is easy to access the internet network to support e-commerce.

Aside from the readiness aspect of SMEs in running e-commerce, this research also reveals the level of satisfaction of respondents towards e-commerce support that has been provided by government. The statements aim to answer these questions are:

1. The government provides sufficient funding for e-commerce development.
2. The government provides sufficient training in the context of using e-commerce.
3. The government provides continued support from the government in the context of using e-commerce.

Table 4 summarizes the responses of all aspects.

The total score of each aspect obtained by multiplying the number of responses and rating score of each response (strongly disagree: 1; disagree: 2; agree: 3; strongly agree :4). The total score for financial readiness is 1445, while interval score for strongly disagree is 645-1128.75; disagree 1128.75-1612.5; agree 1612.5-2096.25, and strongly agree 2096.25-2580. Thus, the total score is within the disagree interval. Therefore, the result indicates that respondent's financial readiness level is still below the expected level.

Total score on human resources readiness aspect is 1700, where the interval score for strongly disagree is 645-1428.75; disagree 1428.75-1912.5; agree 1912,5-2396.25; and strongly agree 2396.25-2880. Thus, the total score is within disagree interval or respondents do not have sufficient readiness in order to implement e-Commerce.

Total score on infrastructure readiness is 1386, while intervals for strongly disagree is 430-752.5; disagree is 752.5-1075; agree is 1075-1397.5, and strongly agree is 1397.5-1720. Thus, the total score is within agree interval. It can be concluded that the respondent's readiness level on infrastructure aspect to implement e-commerce is within adequate level.

Total score for government support aspect is 1645, while intervals for strongly disagree is 645-1113.75; disagree 1113.75-1582.5, agree 1582.5-2051.25, and strongly agree 2051.25-2520. Thus, the respondent's answer is within the agree interval, or it can be concluded that the respondents are satisfied with the e-commerce support provided by the government.

	Value	Percentage
Type of products		
Food and beverage	41	19.07
Craft	26	12.09
Culinary	46	21.40
Clothes	71	33.02
Electronic	31	14.42
Others	0	0.00
Revenue		
Less than IDR 5 million	91	42.33
IDR 5 million-IDR 10 million	54	25.12
IDR 10 million-IDR 20 million	39	18.14
More than IDR 20 million	31	14.42
Business age		
Less than 1 year	68	31.63
1-5 years	109	50.70
5-10 years	28	13.02
more than 10 years	10	4.65
Period of getting assistance from the government		
Less than 1 year	103	47.91
1-2 year	88	40.93
2-3 year	20	9.30
more than 3 years	4	1.86

Table 3. Respondent's Business Condition

Table 4 Responses for Financial, Human resources, Infrastructure, and Government Support

	Question num	Strongly Disagree		Disagree		Agree		Strongly Agree	
		Num	%	Num	%	Num	%	Num	%
Financial	4	6	2.79	129	60	52	24.19	28	13.02
	5	32	14.88	136	63.26	39	18.14	8	3.72
	6	20	9.3	150	69.77	40	18.6	5	2.33
Human Resources	7	19	8.84	133	61.86	57	26.51	6	2.79
	8	9	4.19	61	28.37	100	46.51	45	20.93
	9	16	7.44	51	23.72	101	46.98	47	21.86
Infrastructure	10	5	2.33	56	26.05	81	37.67	73	33.95
	11	1	0.47	26	12.09	71	33.02	117	54.42
Government support	12	34	15.81	87	40.47	59	27.44	35	16.28
	13	15	6.98	51	23.72	92	42.79	57	26.51
	14	47	9.3	94	43.72	32	14.88	42	19.53

V. DISCUSSION

On financial aspects, the most disagree responses was on statements related to long-term plans in e-commerce development (69.77 percent), followed by statements related to capital allocation for e-commerce development (63.26 percent). Sixty percent of respondents also answered that they did not have plans to invest in e-commerce. Seeing the dominance of respondents who do not have plans to invest in e-commerce development, it can be concluded that SMEs managers do not understand or at least do not feel the urgency of using e-commerce. SMEs are still accustomed to doing conventional methods (face-to-face transactions). On the other hand, it is possible for SMEs not to feel the urgency of using e-commerce because the income they get from conventional transaction methods still meets the revenue targets they expect.

On human resources aspects, the most disagree responses was on the question “employees understood the benefits of e-commerce in SME business processes “(61.86 percent said they did not agree). On the other hand, respondents who stated that their employees supported the use of e-commerce and had received e-commerce training were at a moderate-high level of response (46.51 and 46.98 percent). These results indicate the fact that SMEs should increase their understanding of the benefits of e-commerce. For example, the use of e-commerce can increase the sales and profits, which in turn can increase employee income. The positive fact is that most SME actors or employees have already received e-commerce training. However, government should carry ongoing communication on the benefits of e-

commerce in order to increase understanding of its benefits. The most significant response to the supporting infrastructure aspect is the ease for accessing internet with a strongly agree response of 54.42 percent. This indicates that the internet penetration rate is quite high and is quite supportive for SMEs to implement e-commerce. The majority of respondents also gave agree or strongly agree availability of e-commerce supporting facilities, such as computers or laptops. Respondent gave the most agree response on the statement "government provides sufficient training in the context of using e-commerce" (42,79 percent). This shows that e-commerce training program provided by the government is sufficient.

However, disagree answer is quite dominant in the statement "the government provides sufficient funding support for e-commerce development," and "there is ongoing support from the government in e-commerce implementation" (40.47 percent and 43,72 percent). This shows that the provision of financial support and continuity of government support are still inadequate.

VI. CONCLUSION

The results of this study indicate that the readiness of SMEs in Bogor Regency to implement e-commerce is not sufficient in the financial and human resources aspects. On financial readiness, SMEs still do not have a comprehensive investment plan and have not allocated capital for e-commerce development. SMEs are still accustomed to doing business conventionally and the income earned is still considered adequate. On human resources aspects, the level of awareness of e-commerce benefits is still inadequate, hampering the motivation to use this technology.

SMEs have demonstrated readiness in aspects of e-commerce supporting infrastructure. This is indicated by the availability of hardware (computers or laptops), and SMEs as a whole have felt the positive impact of government's support, especially in terms of providing training. However, SMEs feel that government support in terms of funding and sustainability are still inadequate.

VII. POLICY IMPLICATIONS

Based on the results of this study, the government policies related to e-commerce should focus on:

1. Provision of productive capital assistance accompanied by investment planning assistance in the context of e-commerce development.
2. Strengthening communication to SMEs towards the benefits of e-commerce to improve business performance. Therefore, level of awareness and motivation to use e-commerce increase.
3. Support programs for the implementation of e-commerce should be carried out in a sustainable manner and have clear targets for each stage. Ideally, SMEs who have shown success in the first stage can be continued as the subject of assistance for the next stage.

VIII. RESEARCH LIMITATIONS

The results and implications of this study must be considered in light of the intrinsic limitations of survey research. The nature and relatively small size of the sample limit the capacity to generalize research findings. This study also only takes samples in Bogor region so that it is likely that different results will be found in other regions. Further research can be done nationally or take samples in other big cities to expand the generalizations of the study.

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