The Utilization of E-Commerce in The SMEs Development to Support Smart Village in Turi District, Sleman Regency

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Abstract. Smart Village in Turi District is a village development concept which supported by the utilization of technology, such as utilization of e-commerce by SMEs owners in Turi District. We found that SMEs owners in study area need to improve the utilization of technology such as e-commerce in order to promote Smart Village concept. This research using quantitative analysis to compare utilization rate of e-commerce in each villages in study area. We also analyse the impact of e-commerce to the income of SMEs owners using ordinal regression and the marketing reach of SMEs using GIS for spatial analysis, with this method we provide the new results of the similar research. In addition, we identify the roles of stakeholders on utilization of e-commerce by qualitative descriptive analysis based on in-depth interview. This research shows that the utilization rate of e-commerce in four villages is various. It has effect on increasing income that experienced by SMEs owners tends to vary from one to another. The utilization of e-commerce affect on marketing reach which showed by the marketing area difference through spatial analysis using GIS. Based on our identification, several stakeholders supported the utilization of e-commerce on SMEs with their respective roles.

Keywords: SMEs, E-commerce, Smart Village

1. Introduction

The development of information and communication technology is currently very fast. An increasingly advanced culture will lead to the development of technology [1]. The usage of ICT in daily life is classified into ICT as a tool, resource, and system [2]. ICT also plays a role as an enabler and driver in socio-cultural transformation in various aspects of people's lives [3]. Smart cities concept has been accelerated by the government through “100 Indonesian Smart Cities Program” including in Sleman Regency [4]. The usage of ICT should be enhanced, one of which is in governance and development, such as the establishment of the smart city concept in Sleman Regency which is followed by the smart village concept in several villages. Smart Village is important because it supports the technology that plays a role in the regional competitiveness of Sleman Regency.

Smart Village is a village developing concept by adopting smart city’s components and indicators [5]. Several dimensions are appropriate for smart villages namely smart governance, smart community, smart economy, smart environment, while the other ones such as smart mobility, smart transportation, and smart people are not suitable to be applied as smart village targets [6]. Smart Village is formed by the existence of human capital and social capital to complement the already existing physical capital [7]. Smart Village introduces information and communication technology (ICT) to the community to increase productivity and economy, open opportunities for the distribution of information to rural communities, and support the development of rural areas [8].

Turi is one of the districts in Sleman Regency where most of the villages have implemented the
digital system in the practice of governance and development to support Smart Villages. The implementation of Smart Villages in several villages in Turi District is supported by the use of e-commerce by SMEs owners, but the utilization of e-commerce by SMEs owners are very less. The utilization of e-commerce by SMEs owners in Indonesia is currently high, it can increase the competition between SMEs owners in Indonesia. SMEs owners in Turi District need to improve the utilization of technology such as e-commerce in order to promote Smart Village concept so they can have high competitiveness. The lack implementation of e-commerce can reduce the competitiveness of SMEs owners in Turi District. E-commerce is the use of the internet and a computer with a web browser to buy and sell products [9]. The notion of e-commerce is the buying, selling, and marketing of goods and services through electronic systems, such as radio, television, computer networks, and the internet [10]. The Smart Village program, which is supported by the digitalization of the village economy, such as the use of e-commerce itself, is a means for villages to compete in the wider realm of the economy and support the implementation of the program. Village involvement in the world of e-commerce should be taken into action, considering that the progress of digitalization is unavoidable [11]. Digital technology is an opportunity for SMEs owners to penetrate the international market. In its development, technology will be cheaper which can open up opportunities for SMEs to use e-commerce in their operations evenly [12].

This research was conducted with the aim of; 1) identifying the use of e-commerce by SMEs owners in Turi District, 2) analyzing the effect of e-commerce utilization on SMEs, and 3) identifying the role of stakeholders in the use of e-commerce to support smart villages. The benefits of this study is: 1) we can identify the utilization gap between SMEs owners in utilization of e-commerce in every villages, so it can be an overview to government on decision making. 2) this research can give an information to SMEs owners in Turi District about the benefits of e-commerce utilization.

2. Methods

This research was conducted in Turi District, Sleman Regency using both qualitative descriptive and quantitative methods. The sample selection was carried out by purposive sampling method on SMEs owners in Turi District. The selected sample criteria are SMEs owners who use e-commerce, there are 35 samples of owners in this research. This research used questionnaire form to collect data from SMEs owners. Based on the data from 35 samples, we analyse the impact of e-commerce to the income of SMEs owners using ordinal regression with SPSS and the marketing reach of SMEs using GIS for spatial analysis. The ordinal regression using SPSS showed that the data and model are fit so the analysis can be done, the result of this ordinal regression is used to identify the impact of e-commerce utilization on increasing income. Quantitative analysis in this research is used to compare the utilization rate of e-commerce in each villages in Turi District. We also using Indepth interview to collect information from stakeholders such as Former of SMEs Forum in Turi District, Dinas Koperasi dan UMKM Kabupaten Sleman (Sleman’s Department of Cooperation and SMEs), and government in Turi District. The stakeholders are selected by purposive sampling. Indepth interview was used to collect information about the role of stakeholders in supporting the usage of e-commerce to establish smart villages. The result of indepth interview is processed with transcript for data reduction. The information of indepth interview is used to identify the roles of stakeholders on utilization of e-commerce.

3. Results

The results of this research are based on the processing and analysis data obtained from field survey.
The results of this research are divided into 3 parts. First, the utilization rate of e-commerce by SMEs owners in Turi District. Second result is the effect of using e-commerce on increasing income and marketing reach. Third result is the role of stakeholders in the utilization of e-commerce in Turi District to support Smart Villages in Turi District.

3.1 The utilization rate of e-commerce by SMEs owners in Turi District

The usage of e-commerce by SMEs owners in Turi District has been carried out and continues. The utilization level of e-commerce by SMEs owners in Turi District varies in each village. There are many types of e-commerce that used by SMEs owners in Turi District. Most SMEs owners start to utilize e-commerce in 2017-2020. Before 2017, SMEs owners utilize the conventional marketing to sell their products. During the COVID-19 pandemic, people in the productive age learned to use ICT [13]. Smart economy and smart branding, the strengthening of SMEs and marketing by utilizing ICT are greatly increasing during the pandemic in Indonesia [14]. The pandemic COVID-19 also affect on the increasing of e-commerce utilization by SMEs owners in Turi District.

![The Usage of e-commerce by SME owners](image)

**Figure 1.** The usage of e-commerce by SMEs owners

Based on Figure 1, Donokerto Village and Bangunkerto Village have SMEs owners with the most usage of e-commerce with 12 (34%) SMEs owners each, while the number of SMEs owners utilizing e-commerce in Girikerto Village are 4 people (12%) and in Wonokerto Village as many as 7 people (20%). A large number of SMEs owners in the villages of Donokerto and Bangunkerto as well as the COVID-19 pandemic are the causes of the high use of e-commerce drastically which have already been increasing every year. The utilization of e-commerce by SMEs owners in Wonokerto Village is not too high compared to Bangunkerto and Donokerto Villages but in Wonokerto Village more than 50% of the owners already utilizing e-commerce. The low utilization of e-commerce in Girikerto Village is caused by the average SMEs owners who are old and lack knowledge about e-commerce. Bangunkerto Village has many SMEs owners who have used e-commerce in marketing products. The existence of socialization about the importance of digital marketing has a massive effect on SMEs owners to utilize e-commerce. The utilization of e-commerce by SMEs owners in Donokerto Village also increased because of the workshop. The SMEs owners in Donokerto and Bangunkerto started the utilization of e-commerce on 2017. The information about e-commerce and the effect of e-commerce for SMEs owners is very important in supporting the utilization of e-commerce.
SMEs owners in Turi District utilize various types of e-commerce such as Facebook marketplace, Instagram, Tokopedia, Shopee, OLX, WhatsApp business, and websites or marketplaces that have been provided by the government. The types of SMEs which most widely used are Tokopedia at 29%, Facebook commerce at 28%, Shopee at 17%, Instagram at 17%, Grab and Gojek at 6%, and OLX at 3%. The convenience offered by the e-commerce platform is the reason for SMEs owners to choose that platform. The more well-known an e-commerce platform is, the more it is going to be used. Tokopedia and Facebook Marketplace are the most widely used by SMEs owners, Tokopedia is one of the biggest marketplace in Indonesia, there are many informations about Tokopedia, it makes the utilization of Tokopedia is very high. The utilization of facebook marketplace is high because of the SMEs owners have facebook accounts before, it makes the utilization of facebook marketplace is easier to use.

3.2 The Effect of Using E-commerce on Increasing Income and Marketing Reach

Regression test is used to analyze the effect of e-commerce on increasing income, there are two variables in this test, the increasing income as dependent variable and utilization rate of e-commerce as independent variable. The result is utilization of e-commerce in Turi District has an influence on increasing income of SMEs owners. Based on table 1 below, the results of the regression test on 35 samples of SMEs owners below show that the sig. of the use of e-commerce is worth 0.03 (<0.05), which means that the use of e-commerce has effects on increasing the income of the owners. The increase of income experienced by SMEs owners tends to vary from one to another. There are SMEs owners who experience a drastic increase, but there are also the owners who experience a not-too-huge increase in income. Massive intensity of promotion in e-commerce by SMEs owners cause the huge increase experienced by SMEs owners. Some SMEs owners realize that without using e-commerce, the SMEs owners will lose a lot of customers and income. There is a similar result between this research and previous research, the utilization of e-commerce has impact to increasing income of SMEs owners.

Table 1. E-commerce utilization regression test results

| Parameter Estimates | Estimate | Std. Error | Wald | d f | Sig. | 95% Confidence Interval |
|---------------------|----------|------------|------|-----|------|------------------------|
| Threshold           |          |            |      |     |      |                        |
| [Increased revenue = 1,00] | -1.196  | .472       | 6.425| 1   | .011 | -2.121 | -.271                |
| [Increased revenue = 2,00] | .219   | .407       | .291 | 1   | .590 | .578     | 1.016                |
| [Increased revenue = 3,00] | 1.979  | .617       | 10.295| 1  | .001 | .770     | 3.187                |
| [Increased revenue = 4,00] | 2.429  | .738       | 10.829| 1  | .001 | .982     | 3.876                |
| Location            |          |            |      |     |      |                        |
| [Utilization = 2,00] | -2.761  | .917       | 9.067| 1   | .003 | -4.558 | -.964                |
| [Utilization = 4,00] | 04a     | .          | .    | 0   | .    | .         | .                   |
The use of e-commerce by SMEs owners in Turi District also has an impact on the marketing reach for their products. GIS analysis is used to show the different areas of marketing before and after e-commerce utilization by SMEs owners. Based on Figure 2, it is shown that the marketing of SMEs products of Turi District is only around the island of Java and the reach is not too wide. The reason is that conventional marketing without utilization of e-commerce makes the customers of SMEs products are only people who live around owners. Meanwhile, based on Figure 3, it can be seen that there is an increase in marketing reach due to the marketing of SMEs products in Turi District which has reached outside Java Island and even to Papua, the reason is using e-commerce to promote SMEs product can attract customers from other islands. In the some cases, there are more buyers from outside Sleman Regency than buyers from within Sleman Regency. It shows that the reach of SMEs product marketing is getting wider. Some SMEs owners also said that without e-commerce, there are no buyers from

Figure 2. Marketing reach map before e-commerce utilization

Figure 3. Marketing reach map after e-commerce utilization
outside Sleman Regency have information about their product. This result shows that the utilization of e-commerce by SMEs owners will help them to get a lot of customers from many regions in Indonesia.

### 3.3 The Role of Stakeholders in The Utilization of E-commerce to Support Smart Villages in Turi District

The role of stakeholders in supporting the usage of e-commerce to establish smart villages is various. The entire government in Turi District held training and guidance for SMEs owners in utilizing e-commerce so that the smart village concept can be being established. The training aims to develop the capability of SMEs owners to operate e-commerce, so they can reach more customers. Turi SMEs Forum plays a role as a platform for the owners to discuss with each other and helps SMEs owners to promote their product on e-commerce. In Donokerto Village, the government using zoom meeting and webex to conduct workshop for SMEs owners. The government of Wonokerto Village provide a marketplace for SMEs owners to promote their product, this marketplace is simple and all of SMEs owners in Wonokerto village can use it. In Bangunkerto Village, the government make G2R Programs to support the utilization of e-commerce. The government of Girikerto Village and SMEs owners make a routine forum about SMEs development and the utilization of technology. The Sleman’s Department of Cooperation and SMEs have a role in providing training for SMEs owners about e-commerce and providing a marketplace “Sleman Mart” to support owners in utilizing e-commerce. All of SMEs owners can promote their product on “Sleman Mart” but there are some qualifications for the products. The Sleman’s Department of Cooperation and SMEs also advocates SMEs owners about e-commerce from training and workshop. During the pandemic, the workshop about e-commerce is conducted through webinar and on air radio. The role of every stakeholder is very important in supporting the usage of e-commerce to establish smart villages in Turi district.

There is a problem experienced by SMEs owners such as bad internet network in some locations. SMEs owners have a problem to access internet, this condition affects to the utilization of e-commerce. Some stakeholders such as government and SMEs Forum have a program to provide free access internet in public areas. The utilization of e-commerce is one of smart village program in Sleman Regency, all stakeholders cooperate to solve the existing problems through several programs so that the smart village concept can be implemented in Turi District. The response from SMEs owners to the role of stakeholders is very important. Some SMEs owners experienced the effect of government programs to support the utilization of e-commerce. There are some suggestions from SMEs owners about the role of stakeholders such as the stakeholders should conduct a routine workshop about e-commerce and marketplace, marketing training, and unlimited quota in workshop.

### 4. Conclusions

Based on the results of data processing and analysis, the conclusions of this study are: 1) The utilization level of e-commerce by SMEs owners in Turi District varies in each village, Donokerto Village and Bangunkerto Village have SMEs owners with the most usage of e-commerce. Wonokerto Village and Girikerto have small utilization of e-commerce because small numbers of SMEs owners and lack of information about e-commerce. SMEs owners in Turi District utilize various types of e-commerce such as Facebook marketplace, Instagram, Tokopedia, Shopee, OLX, WhatsApp business, and websites or marketplaces that have been provided by the government. 2) The utilization of e-commerce by SMEs owners has effect on increasing the economic income of the owners, the increasing of income that experienced by SMEs owners tends to vary from one to another. The utilization of e-commerce also has effect on wider marketing reach of SMEs products showed by the marketing area.
difference through spatial analysis using GIS. Before the utilization of e-commerce, marketing area of SMEs products of Turi District is only around the island of Java. After the utilization of e-commerce, the marketing of SMEs products in Turi District has reached outside Java Island and even to Papua. 3) The role of stakeholders in supporting the use of e-commerce for establishing smart villages in Turi District is through training, guidance, providing marketplaces, and education for SMEs owners. The sustainable programs are very important to support the utilization of e-commerce and smart village concept in Turi District.

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