

Research Paper

The Use of Digitalization and Impact on MSME Performance in Malang, Indonesia

Ajimas Sya'ban Lintang Jauhar

Universitas Negeri Malang

ORCIDAjimas Sya'ban Lintang Jauhar: <https://orcid.org/0009-0000-6525-7593>**Abstract.**

Small and medium enterprises have an essential role in the Indonesian economy, and a great opportunity could be created by the development of ICT for their growth and development. This research aims to study the advantages of digitization for SMEs. This study analyzes the context and situation of SMEs in Malang: operations, productivity, and digitalization. The digitalization mentioned is about financial assistance, management, enterprise resource planning (ERP), and the means of assistance available to them.

Keywords: digitalization, SME, operational, social media, communication

Corresponding Author: Ajimas Sya'ban Lintang Jauhar; email: syabanaji@gmail.com

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 Ajimas Sya'ban Lintang

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1. Introduction

The essential resources owned by companies today are tangible resources like assets and human resource capabilities, and information and technology development to advance their business (Gray, 2015). Traditionally, the most valuable resources in companies are assets. However, with the arrival of information technology and globalization, companies must use other types of resources to compete and face global competition (Plaza, 2020). Adopting digitalization is very important in increasing business performance. However, the most critical process is not only about how many applications, systems, or assistance services are used but how effective and maximum the impact is on the business (Loebbecke, 2015).

In early 2020, Indonesia and the rest of the world faced a large-scale health crisis. The problems occur in health and other sectors, such as the economy and business. As one of the most prominent actors in driving the economy, MSMEs also had problems during a global crisis (Mourougane, 2012). The crisis that emerged suddenly forced business people to continue to grow despite social restrictions (Guo, 2020; Marcysiak, 2021). The crisis was a significant blow to MSMEs as small companies with little room

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for maneuver were less able to weather the recession. Unlike large industries with sufficient managerial and capital systems (Dassisti, 2017). There are also many other problems, such as managerial and operational effectiveness, that small companies must immediately fix to be able to compete (Suci, 2017; Überbacher, 2020).

Along with easing the Covid-19 outbreak, the economy worldwide, especially in Indonesia, began to grow again. This economic crisis created an increase in aggregate demand, which was not accompanied by an increase in supply, due to social restrictions, which made many industries unable to produce as well as before (Gourinchas, 2020). Another impact caused by the crisis is also business instability, which requires actors to adjust their resources and capabilities (Guo, 2020). In this situation, it is essential to study this to help SMEs face crises and changes.

On the other side, one of the main challenges faced by MSMEs in facing the crisis is increasing competitiveness because operating in a global environment, competition between industries is increasing (Bianchini, 2020). The developments brought about by technological advances that affect the development of MSME performance are believed to have a significant impact on the economy. MSMEs, which are the distinctive characteristics of a region's economic, cultural, and political system, cannot be equated with large companies. The distinctive character of MSMEs is due to the diversity of types of MSMEs which can easily be distinguished from the structure, governance, and management system (Curraj, 2018). The findings of this study indicate that during the crisis due to the COVID-19 pandemic, large companies can use technological advances in their business activities, and MSMEs also have the same opportunities.

Nevertheless, the research conducted by Muditomo & Wahyudi (2021) said that many MSMEs still need higher digital literacy. Despite that, technology implementation is not measurable to the MSMEs performance. The low digital literacy is proven by how MSMEs mostly need more resources. They must take advantage of the opportunities given to them to achieve greater efficiency and optimize the use of their resources. On the other hand, the risk of awareness by MSMEs to grow and implement digitalization is starting to arise (Sommer, 2015). By these conditions, many research results in the past focused on how specific models affect how MSMEs survived by applying one of the technological models. It turned out to be a success but needed to be measurable. While on this research focuses more on how digitalization in general, especially information system, affect MSMEs in Malang. The method used in this research is SEM-PLS. To analyze the relationship between the ease and problems of digitalization to the SME's performance.

2. Literature Review

2.1. Micro, Small, and Medium Enterprises

The view of the importance of economic growth makes MSMEs widely believed to be engines of economic growth in emerging markets. MSMEs in developing countries employ a large proportion of the population and significantly contribute to economic growth (IFC, 2020). With the immense potential of MSMEs, the government helps solve the problems that MSMEs face. Most of the MSME empowerment programs implemented focused on financing and training for MSMEs (TNP2K, 2021). However, there is a fact that MSME actors tend to have aspirations to develop only if they are in a state that is considered adequate (Tewari, 2013). This is good for operational efficiency but makes it difficult for businesses to innovate. Many companies still operate in a state of uncertainty and delay decisions regarding spending on digitization. Hence it is necessary to emphasize the importance and benefits of digitization in the long term (Doyle, 2019).

The development of the world economy must be distinct from the role of MSMEs; as many as 90 percent of business actors are MSMEs who absorb large numbers of workers. In addition, MSMEs contribute 40 percent of developing countries gross domestic product (GDP) (IFC, 2020). MSMEs as economic drivers also play a role in advancing Sustainable Development Goals (SDGs). High labor absorption spurs innovation and creativity so that it can create decent jobs. (TNP2K, 2021). In the economy in Indonesia, MSMEs have an essential role in local economic progress, community empowerment, and the creation of new markets, several incentives for economic growth are carried out effectively by MSMEs due to the advantages of interacting directly with sectors operating in the region, such as livestock, fisheries, agriculture and forestry (Sofyan, 2017). An extensive network is a substantial capital that MSMEs must own in facing increasingly open market competition. In this case, information is needed for marketing strategies, network expansion, and production to increase competitiveness SME's Digitalization (Sarfiah, 2019).

Some of the benefits created by digitalization are creating new value in the business world, communication between customers and companies or products, and the main foundation supporting various business activities (Dellacoras, 2003). Digitalization can be interpreted as a fundamental change in operations, functions, or even business models. Digitalization is a form of effort to create new offers for customers (Schallmo, 2018). Digital transformation affects various activities, including management, human

resources, logistics, production, and communication. Therefore, different types of technology are available for each digitization specialization (Kilimis, 2019).

On the one hand, many SMEs need to be fully aware of the impact of digitization. Unawareness of digitalization's impact has led to a misunderstanding. Especially on the complexity and price of digitization, so its potential and economic benefits cannot be well estimated (Sommer 2015). Effendi (2020), in his analysis of the behavioral intention of business actors to adopt technology in their businesses affected by the COVID-19 crisis. It is found that SMEs have a higher awareness of social media adoption to increase their product marketing numbers and build good relationships with customers. The role of technology, organization, environment and social media awareness significantly influences the intention to adopt social media. The application of this technology supports the theory of diffusion of innovation Rogers (2003), and TOE (Technology Organization Environment) has been commonly used in recent years in the field of information technology, such as the adoption of websites, mobile technology, and the adoption of the Internet in small and medium commerce (Chiu, 2017).

3. Data and Methodology

The data obtained were collected using a questionnaire, designed to investigate the influence of problem factors and ease of digitization on the performance of SMEs. The hypothesis was tested using a structural equation model (SEM) approach, because it is suitable for analyzing the social relationship between operations within the company and the subjective assessment of the company's overall performance. In its application, each digital product has its own role in facilitating business activities (Kilimis, 2019). This research was made with the aim of knowing how the role of digital technology and what technology is used in MSMEs in Malang.

The questionnaire is distributed around the city and district of Malang for a period of two months from April to May 2022. The object of the research is micro, small and medium enterprises that use digital technology in their business activities. Data analysis was carried out to be able to provide relevant data in accordance with the research objectives. The analysis in this article is based on data collected from survey data described as follows:

Based on the research objectives and questions, this study tested two main hypotheses, there are:

TABLE 1: SEM-PLS Adopted Variable.

Label	Measurement	Question	Typology
X1	Difficulty in using digitization	The difficulty in implementing digitization in business (Abel-Koch, 2019)	Likert
		Maintaining the use of digitization in business (Abel-Koch, 2019)	Likert
		Problems with keeping up with digitalization (Abel-Koch, 2019)	Likert
X2	Ease of using digitization	The ease of digitalization products to learn (Saputri, 2021)	Likert
		Flexibility of digitalization products (Saputri, 2021)	Likert
		Digital products for daily use (Überbacher, 2020)	Likert
Y1	Business performance	The impact of digitization on business productivity (Saputri, 2021)	Likert
		The impact of digitalization on business effectiveness (Saputri, 2021)	Likert
		The importance of using digitization in business (Saputri, 2021)	Likert
		The convenience provided by digitization overall (Saputri, 2021)	Likert

1. **H1:** The difficulty of digitization has a significant impact on the performance of SMEs in Malang.
2. **H2:** The ease of digitization has a significant impact on the performance of SMEs in Malang.

Research variables are measured by factor analysis which will be processed through SEM analysis. Data analysis was conducted to determine the value of the relationship between the problem (X1) and the ease (X2) of digitalization to the performance of MSMEs (Y1). The data used is collected through surveys, some of which are distributed directly in the form of leaflets and partly by Google forms which are distributed online. The data obtained were processed using Excel and Smart PLS applications.

4. Result and Discussion

Questionnaires were distributed through google forms which were distributed to MSME actors who use digitalization products in marketing, operations, communication and transaction. The total number of respondents who participated in the questionnaire was 104 respondents. The time used for data collection is from April to May 2022, with a total area of 3,641 km². The distribution of the data results is divided into cities and 26 districts from 33 districts of Malang.

TABLE 2: Data Distribution.

Based on Location in Malang		
Location	Total	Percentage
District	68	65%
City	36	35%
Based on Business Type		
Business Type	Total	Percentage
Food and Beverages (F&B)	66	63,46%
Trade (Sell/Buy)	21	20,19%
Manufacture (Production)	10	9,62%
Service	7	6,73%
Total	104	100%

From table 2 it can be seen that most businesses that use digitalization in this study are businesses in the Food and Beverages (F&B), with a contribution value of 63.46%. In terms of the value of the F&B business that dominates, it can be due to the type of business which is mostly the same and the product is in the form of primary needs. In addition, the market is wider than manufacturing and service businesses, so F&B businesses can easily adapt to direct or digital competition.

4.1. SEM-PLS

4.1.1. Validity and reliability

Table 4.2.1.1 shows the results related to the mean, standard deviation, and outer model analysis for the research variables. In looking at the validity and reliability of an analysis result, it can be seen through the value of factor loading, average variance extracted (AVE), Cronbach's alpha, and Composite Reliability. The results of the outer model or loading factor are used to measure the value of the validity and reliability of each indicator. In the SEM analysis technique, the required factor loading for each item must be 0.6 or above. At this stage, it is important to sort out and delete some items that are deemed unsuitable. However, the results of the analysis in the table show a fairly high and appropriate value for all items.

Cronbach's alpha is a test carried out to find internal reliability (Bryman, 2011) with a recommended value of 0.70 or more (Hair et al., 2011). Meanwhile, convergent validity can be achieved with the average variance extracted (AVE) value of 0.50 or more (Hair et al., 2011). All items in Table 3 have sufficient convergent validity: $AVE > 0.50$ In

TABLE 3: Outer loading, construct reliability, and validity.

Construct	Items	Factor Loading	Mean	Std.dev	t-statistic	A	Cr	Ave
Difficulty in using digitization	X1.1	0.893	0.888	0.035	25.297	0.879	0.925	0.804
	X1.2	0.912	0.913	0.029	31.801			
	X1.3	0.886	0.880	0.036	24.505			
Ease of using digitization	X2.1	0.767	0.763	0.058	13.144	0.787	0.874	0.699
	X2.2	0.882	0.877	0.034	26.085			
	X2.3	0.855	0.853	0.043	20.048			
Business performance	Y1.1	0.890	0.887	0.035	25.134	0.863	0.907	0.711
	Y1.2	0.902	0.900	0.025	36.119			
	Y1.3	0.796	0.790	0.058	13.631			
	Y1.4	0.778	0.774	0.052	14.983			

Note. *A: Cronbach's Alpha, *Cr: Composite Reliability, *Ave: Average Variance Extracted

composite reliability (CR) which describes the reliability of each indicator, a good value is obtained because it is above the recommended value of 0.70 or more (Hair et al., 2011).

4.1.2. Discriminant Validity

Discriminant validity is carried out in order to find unique and interesting phenomena in the size of the measurement model (Henseler, Ringle, & Sarstedt, 2015). In the classical Fornell Larcker criteria, it is stated that for the assessment of discriminant validity it is necessary that the square root of the AVE is greater than the correlation of the construct with all other constructs in the structural model.

TABLE 4: Discriminant Validity.

	Problem	Ease	SMEs Performance
Problem	0.897		
Ease	0.581	0.836	
SMEs Performance	0.382	0.667	0.843

Table 4 shows that the measurement model meets the Fornell–Larcker criteria, which indicates that the square root of the AVE exceeds the mean correlation between the latent constructs. In this study, the value of the AVE square root or Fornell-Lacker

Criterion is greater than the correlation value with other constructs and has a value > 0.7, so Discriminant Validity is declared good or all variables are declared valid.

4.1.3. Structural Model Result

Evaluation of the structural model or Inner Model aims to answer the prediction of the relationship between the variables formed by seeing how much variance is to be explained and knowing how significant the p-value is.

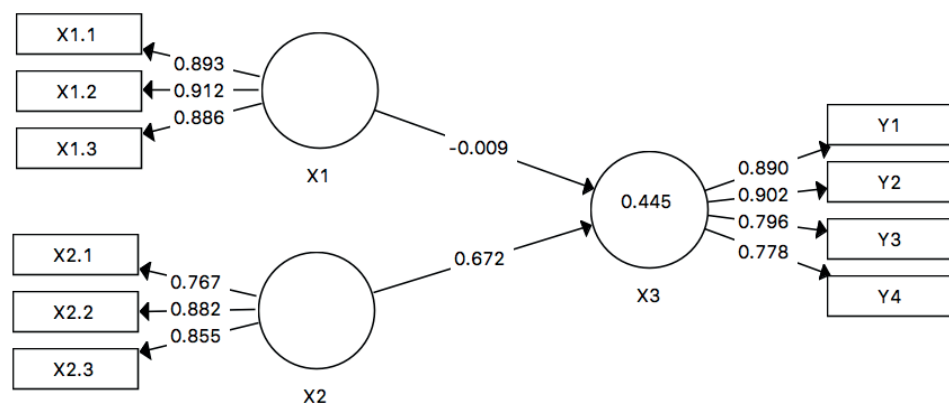


Figure 1: Structural Model.

4.1.4. R Square

The purpose of the R-square calculation is to see the magnitude of the value that affects the dependent variable. In this study, the independent variables that influence are the perception of difficulty and ease of use of digitization in MSME businesses. Table 5 shows that the R-square value is 0.445, which can be concluded that the effect of difficulty and ease of using digitization on MSME business performance has an effect of 45.50%.

TABLE 5: R square.

	R Square	R Square Adjusted
SME Performance	0.445	0.434

4.1.5. Normed Fit Index (NFI)

Based on the analysis of the fit model in table 6, the value of the Normed Fit Index (NFI) is close to 0.1 which means that the model can be said to be much better. Then

Standardized Root Mean Square Residual (SRMR) is used as the value of the match between the observed relationships, according to Hu and Bentler (1999), SRMR values < 0.1 are considered suitable.

TABLE 6: Normed Fit Index (NFI).

	SRMR	d_ULS	d_G	Chi-Square	NFI
Saturated Model	0.079	0.341	0.169	104.328	0.829
Estimated Model	0.079	0.341	0.169	104.328	0.829

4.1.6. Hypothesis Testing

Table 7 shows the hypotheses and the results of the research analysis. The results of path analysis revealed that difficulty in digitalization had a negative relationship with MSME business performance, with an insignificant path coefficient ($\beta=-0.009$, $t=0.126$, $p>0.005$). Thus H1 is not supported by the model. Other results found in the SEM-PLS analysis show a significant path relationship on the effect of ease of digitization on MSME business performance ($\beta=0.672$, $t=8.881$, $p<0.005$), thus H2 is supported by the model.

TABLE 7: Path Coefficient.

	Structural Path	β	t	P Values	Hasil
H1.	Problem -> SME Performance	-0.009	0.126	0.900	Rejected
H2.	Ease -> SME Performance	0.672	8.881	0.000	Accepted

4.2. Discussion

The result of path analysis shows that the difficulties of SMEs in implementing, using and developing using digital applications have no significant effect on business performance. This result also similar with research conducted by Joensuu-Salo et al., (2018). It is said the digitalization doesn't significantly affect the SMEs performance because of the tools or the features of digitalization model is difficult to be implement on SMEs. It is also supported by a study conducted by the European Investment Bank (2021) on the digitization of MSMEs in Italy, it was found that the difficulties faced by small businesses in making changes to their business were hindered by size, experience, resources and finances. With this background, most MSME businesses do not all have the ability to increase innovation and new technology. So that MSME business activities that previously ran even though traditionally and did not require digital service assistance

can still run even though there is a possibility of a loss in conditions of increasingly fierce market competition.

The second result of the path analysis is the relationship between the ease of digitalization has a significant effect on business performance. The ease of use and function of digitalization has a positive effect on business operations that can help increase effectiveness, market share and service quality. This supports research conducted by Ali (2018) and Bouwman (2019), regarding the higher the number of innovations and digitization carried out, the better in influencing improvements in business performance.

By knowing the factors that can affect business performance, this can be used as a basis for developing business strategies. With the proven significance of using digitalization in improving business performance, it is hoped that business owners will be more aware of the potential for digitalization to help the effectiveness of their business activities. As for the survey results in the form of problems that are often faced by MSMEs in the use of digitalization, it can be seen that the biggest problem for most MSMEs is how to develop strategies in the digital market. After the problem is known, business actors can consider the strategy, environment and how the development of digital applications in Malang. Due to the differences that each region has, environmental differences greatly affect MSME businesses because the market is small. The development of technology itself which has fierce competition, provides many choices regarding services. So it is very possible if there are local digital services and specific to a certain area's needs.

5. Conclusion

The important objective of this research is to identify the relationship between the use of digitization on the business performance of MSMEs in Malang. From a demographic point of view, most MSMEs are businesses engaged in the F&B sector, this shows that the type of business that dominates the most digitalization adoption in Malang is the food and beverage industry. Furthermore, the SEM-PLS analysis was used to test the research hypotheses and analyze the path of the problem factors and the ease of digitalization on the performance of MSMEs. The results of the analysis found that all the problems encountered in using digitization had no significant effect because $P > 0.05$, meaning that the factors from the model did not affect the business performance of MSMEs. Then the variable of ease of digitization was found to significantly affect the performance of MSMEs because $P < 0.005$, meaning that the factors of the model significantly affect the business performance of MSMEs. In addition to the results of the research in the form of

analysis, another result of this research is to take a role in building knowledge for MSME actors and digital service providers. First, this research tries to find information about digital technology and how the experience of business actors in using it to advance their business. Second, the SEM analysis was chosen because it was deemed appropriate to the data model sought, that is a social perspective. However, like other studies, this study has limitations such as the differences in the nature and characteristics of MSMEs from each region and country. This interprets MSMEs in this study more inclined towards MSMEs in Malang and difficult to compare with other studies outside the region. Another constraint in this research is the unevenness in terms of size, capability, and resources to location access in digitalization support. Third, this research does not have a specification for the business field under study. So that the model tested does not reflect the specifics of one industry and cannot be used as a representative in the comparison of business types.

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