Analysis of the Influence of Barriers on the Digitalization Readiness of MSMEs in Dadapayam Village

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Abstract

This study aims to analyze the influence of internal and external barriers on the digitalization readiness of MSMEs in Dadapayam Village. Internal barriers include financial limitations, lack of digital skills, unsupportive organizational culture, and lack of digital leadership. Meanwhile, external barriers encompass limited technology infrastructure, lack of access to technology, cybersecurity issues, and minimal government support. This research employs a qualitative approach using multiple linear regression methods, based on data from 79 MSME respondents collected through a questionnaire. The analysis results indicate that, partially, internal barriers do not have a significant effect on the digitalization readiness of MSMEs. However, external barriers have been shown to have a significant partial effect. Simultaneously, both internal and external barriers together have a significant influence on the digitalization readiness of MSMEs. These findings contribute to enriching the literature on the digitalization of rural MSMEs and serve as a basis for formulating policies for empowering MSMEs that remain responsive to traditional conditions.

***Keywords**: Digitalization Readiness, MSMEs, Internal Barriers, External Barriers, Rural Digitalization*

1. INTRODUCTION

Digitalization refers to the use of digital technology to innovate business models and provide new revenue streams and opportunities that create value within the industrial ecosystem (Parida et al., 2019). According to Iskandar (2022), digitalization represents a fundamental change in business practices that enables entrepreneurs, including micro, small, and medium enterprises (MSMEs), to enhance operational efficiency, expand markets, and strengthen competitiveness in the era of digitalization. Micro, small, and medium enterprises, commonly referred to as MSMEs, are small businesses owned and managed by individuals or a small group of people with a certain level of wealth and income (Bank Indonesia and LPPI, 2015). In the economic sector, MSMEs play a crucial role in national economic growth, spread across various sectors such as culinary, manufacturing, and services, and have significant potential to improve the economic welfare of society. MSMEs also contribute to 60.5% of the Gross Domestic Product (GDP) and absorb more than 97% of the workforce in Indonesia (Ministry of Cooperatives and SMEs, 2023).

MSMEs are a key factor for society as they can provide income to meet daily needs and actively contribute to economic growth. To support the development of MSMEs, the government has launched various programs to foster growth in this sector, especially in facing

the era of digitalization (Alansori & Erna, 2020). Programs such as MSME Level Up 2024 and the National Digital Literacy Movement aim to enhance digital literacy and encourage MSMEs to adopt technology, referred to as digitalization, in their business operations (Indonesia.go.id, 2024). Digitalization offers numerous benefits for MSMEs, including improved operational efficiency, better financial management, and the ability to compete in an increasingly digital market (Yashinta Putri, 2024). This aligns with the findings of Hamzah et al. (2023), which state that digitalization allows MSMEs to expand market access through e-commerce platforms and social media, enabling local products to reach a broader consumer base. Additionally, the use of digital technology enhances operational efficiency, such as in inventory management and marketing, which in turn can reduce operational costs and increase profit margins.

Although digitalization presents significant opportunities for MSMEs to grow, many MSME actors still face various obstacles that hinder optimal digital transformation. These obstacles can generally be categorized into two types: internal and external barriers. Some common internal barriers include financial limitations; furthermore, a lack of digital skills among entrepreneurs leads to a low capacity to optimally utilize technology, as well as an organizational culture that does not support digitalization changes, and leadership that lacks a digital orientation can impede the direction and success of digitalization (Omowole et al., 2023). On the other hand, external barriers arise from factors outside the direct control of MSMEs but significantly affect the success of digitalization. These barriers include inadequate technology infrastructure, which affects slow or unstable internet connections, remaining a major obstacle that hinders the digital operations of MSMEs. Additionally, a lack of information about technology and its providers complicates MSMEs' decision-making regarding digital adoption, along with cybersecurity threats that make MSME actors hesitant to shift operations to digital platforms (Restrepo-Morales et al., 2024). Government support, whether in the form of training, incentives, or conducive policies, is still uneven, especially in rural areas, exacerbating the digitalization gap between urban and rural regions (Omowole et al., 2023). The phenomenon of the digitalization gap between rural and urban areas is also found by Maimuna et al. (2024), which identifies factors hindering digitalization, including low digital literacy and a lack of regulatory support. This is consistent with the findings of Hardi et al. (2023), which state that limited digital infrastructure and a lack of skilled human resources are factors hindering the digitalization of MSMEs. This gap also exists in Semarang Regency.

Semarang Regency is one of the largest regencies, ranked 16th in Central Java, with an area of 1,019.27 km² (BPS, 2023). Its geographical position near the city of Salatiga highlights the digitalization gap, particularly in Dadapayam Village, which is located in the Suruh District of Semarang Regency and has limited access to both infrastructure and digital knowledge. Despite having minimal access, Dadapayam Village is one of the villages with a significant number of MSMEs in the culinary, service, and grocery sectors.

Based on the background above, it is important to conduct research aimed at examining the internal and external barriers to digitalization readiness, assuming that there is an influence from both internal and external barriers on the digitalization readiness of MSMEs in Dadapayam Village. The conceptual framework, also known as the conceptual model, is a conceptual model of how theory relates to various factors identified as important issues (Syahputri et al., 2023).

Image 1. Thinking Frame

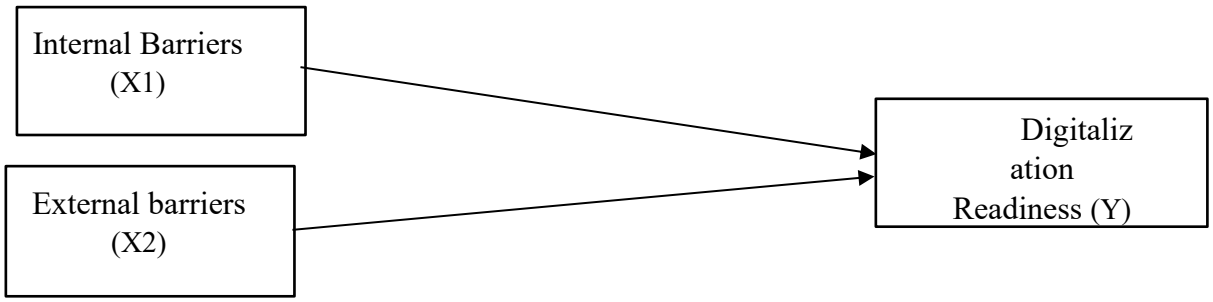


Image 1 explains that this research has 2 variables: variable X consists of 2 independent variables, namely internal barriers and external barriers, while variable Y is digitalization readiness, with the following hypotheses:

H1: Internal barriers have a significant effect on the digitalization readiness of MSMEs in Dadapayam Village.

H2: External barriers have a significant effect on the digitalization readiness of MSMEs in Dadapayam Village.

2. METHOD

This study uses a quantitative approach. The quantitative method involves the collection and analysis of numerical data to explain, predict, and control the phenomena being studied (Mayasari et al., 2022). The aim is to determine the effect of internal and external barriers on the digitalization readiness of MSMEs in Dadapayam Village. The respondents in this study are active actors located in the Dadapayam Village area. The geographical position near the city of Salatiga highlights the digitalization gap, especially in Dadapayam Village, which is one of the villages in the Suruh District of Semarang Regency that has limited access to both infrastructure and digital knowledge. Despite having minimal access, Dadapayam Village is one of the villages with a significant number of MSMEs in the culinary, service, and grocery sectors.

Data collection techniques were carried out using a questionnaire with a Likert scale. The Likert scale is used to measure perceptions, attitudes, or opinions of individuals or groups regarding an event or phenomenon (Bahrun et al., 2018). Data collection was conducted using Google Forms, and the questionnaire was distributed through messaging applications such as WhatsApp and also through direct meetings with respondents, using a positive Likert scale of 1-4, as explained in the following table:

Table 1. skala Likert

Name	Description
1	Strongly Disagree
2	Disagree
3	Agree
4	Strongly Agree

The population refers to the entire object/subject of the research (Asulla et al., 2023).

The population used in this study consists of all MSMEs in Dadapayam Village that are actively operating in various sectors such as culinary, manufacturing, and services, with a total population of 93 MSMEs. In determining the sample, purposive sampling technique was used. Purposive sampling is a non-random sampling method where the researcher ensures the selection of illustrations through criteria that align with the research objectives, thus allowing for appropriate responses to the research case (Mairinawati, 2019). The criteria used are the residents of Dadapayam Village who own MSMEs, with the sample taken using Slovin's formula with a margin of error tolerance of 5% as follows:

$$n = \frac{N}{1 + Ne^2}$$

Where:

n = number of samples needed

N = population size (93 MSMEs)

e = margin of error tolerance (0.05 or 5%)

Based on the formula above, the number of samples used is:

$$n = \frac{N}{1 + Ne^2}$$

$$n = \frac{93}{1 + 93\,(0.05)^2}$$

$$n = \frac{93}{1 + 0.2325}$$

$$n = \frac{93}{1.2325}$$

$$n = 75.45$$

Based on this calculation, the number of samples determined for this study is 75 respondents, rounding down to ensure that the sample size is not a fractional number.

The data analysis technique refers to the methods used for calculations to answer the problem formulation and test the hypotheses proposed in the research (Sugiyono, 2018). The data analysis techniques used in this study include validity testing, reliability testing, normality testing, multiple linear regression testing, and hypothesis testing using SPSS version 26.

3. RESULTS AND DISCUSSION

Descriptive Statistical Analysis

The respondents in this study are actors from Micro, Small, and Medium Enterprises (MSMEs) who actively run their businesses in Dadapayam Village, Suruh District, Semarang Regency. A total of 79 MSMEs filled out the questionnaire. The characteristics of the MSMEs in this study were obtained from respondent data regarding the type of business, duration of operation, and whether they have used digital media or not. The data obtained regarding the profile of the respondents who have been the subject of this research is as follows:

1. Type of Business

The types of businesses from the respondents are divided into 9 groups, as shown in Table 2 below:

Table 2. Types of Business

Type	Frequency	Percentage
Service	11	13,9%
Fashion	2	2,5%
Craft	5	6,3%
Culinary	24	30,3%
Rental	1	1,2%
Groceries	22	27,8%
Seamstress	5	6,3%
Farmyard	1	1,2%
Others	8	10,1%
	79	100%

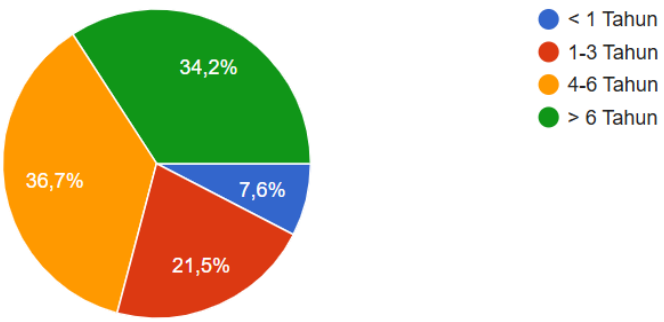
Source: Respondent Data (2025).

Based on the data recap, the types of businesses operated by the respondents in this study are quite diverse. The majority of respondents are engaged in the culinary field, with 24 individuals representing 30.3%, followed by the grocery business with 22 individuals at 27.8%. There are 11 individuals in the service sector, accounting for 13.9%, and 8 individuals in other categories, representing 10.1%. Other types of businesses that appeared, albeit in small numbers, include craft and seamstress, each with 5 individuals at 6.3%. Meanwhile, the fashion business is only represented by 2 individuals at 2.5%, and rental and farmyard businesses each have only 1 individual at 1.2%. These results indicate that the culinary and grocery sectors dominate the economic activities of MSMEs in Dadapayam Village.

2. Duration of Business Operation

The duration of business operation among respondents is divided into 4 groups, ranging from less than 1 year to more than 6 years, as shown in the figure below:

Image 2. Duration of Business Operation



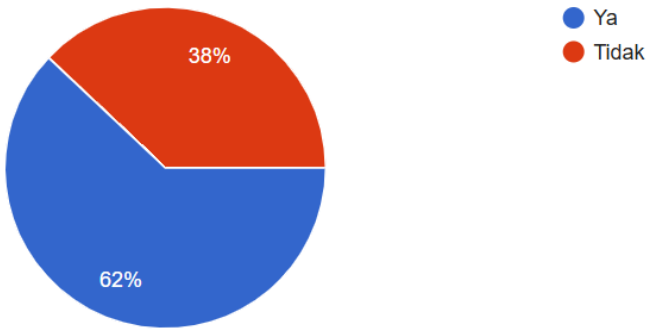
Source: Respondent Data (2025).

Based on the distribution data of the duration of business operation, the majority of respondents have been running their businesses for 4 to 6 years, accounting for 36.7% of the total respondents. This is followed by respondents with more than 6 years of business experience at 34.2%. Meanwhile, 21.5% of respondents stated they have been in business for 1 to 3 years. Those who have just started their business for less than 1 year account for 7.6% of the total respondents. These results indicate that the majority of MSME actors who participated in this study have considerable business experience, which is seen as a potential advantage in understanding and facing the digitalization process in their business operations.

3. Use of Digital Technology

The use of digital technology in the respondents' businesses is divided into 2 groups: those who have used technology in their business and those who have not, as shown in the figure below:

Image 3. Use of digital technology



Source: Respondent Data (2025).

Regarding the use of digital technology in business activities, the majority of respondents indicated that they have adopted digital technology, with a percentage of 63%. Meanwhile, 38% of respondents have not implemented digital technology in their business activities. This finding shows that more than half of the MSME actors in Dadapayam Village have begun to adapt to technological developments, although there are still some respondents who have not utilized digitalization in their business activities. This serves as an initial indication of the readiness of business actors for digitalization.

Validity Test

The validity test is a test used to assess the accuracy of a measurement tool in measuring what it is supposed to measure (Rosita et al., 2021). The decision-making process uses (r) count > (r) table (calculated based on the number of variables and the number of respondents). If (r) count > (r) table, then the instrument or item questions correlate significantly with the total score (valid). The validity test results in this study can be seen in the table below.

Table 3. Validity test

Variabel	Question	r Count	r Table	Description
X1 (Internal Barriers)	1	0,655	0.2213	Valid
	2	0,623	0.2213	Valid
	3	0,652	0.2213	Valid

	4	0,731	0.2213	Valid
	5	0,679	0.2213	Valid
	6	0,753	0.2213	Valid
	7	0,717	0.2213	Valid
	8	0,428	0.2213	Valid
	9	0,641	0.2213	Valid
	10	0,694	0.2213	Valid
X2 (External Barriers)	1	0,733	0.2213	Valid
	2	0,654	0.2213	Valid
	3	0,627	0.2213	Valid
	4	0,775	0.2213	Valid
	5	0,689	0.2213	Valid
	6	0,585	0.2213	Valid
	7	0,748	0.2213	Valid
	8	0,570	0.2213	Valid
Y (Digitalization Readiness)	1	0,646	0.2213	Valid
	2	0,684	0.2213	Valid
	3	0,589	0.2213	Valid
	4	0,791	0.2213	Valid
	5	0,619	0.2213	Valid
	6	0,670	0.2213	Valid
	7	0,687	0.2213	Valid
	8	0,752	0.2213	Valid
	9	0,588	0.2213	Valid
	10	0,366	0.2213	Valid

Source: Data Processing (2025).

The validity test results with a total of 79 respondents show an r table of 0.2213. Based on the table above, it can be concluded that the internal barriers variable has an r count greater than the r table, indicating that the questions on the internal barriers variable are valid. The

results for the external barriers questions also show that the r count is greater than the r table, confirming their validity. For the digitalization readiness variable, the results indicate that the r count is greater than the r table, thus the questions regarding digitalization readiness are valid.

Reliability Test

The reliability test aims to measure the internal consistency of the research instrument, specifically how consistently the measurement tool yields results under similar conditions. The reliability test in this study was conducted using Cronbach's Alpha technique. According to Ghozali (2021), a Cronbach's Alpha value exceeding 0.7 indicates that the instrument has a good level of reliability. The closer the value is to 1, the higher the reliability of the instrument. This indicates that each item in the construct supports each other and does not stand alone. The reliability test results in this study can be seen in the table below.

Table 4. Reliability test

Variable	Cronbach's Alpha Value	Description
Internal Barriers	0,851	Reliabel
External Barriers	0,827	Reliabel
Digitalization Readiness	0,841	Reliabel

Source: Data Processing (2025).

Based on the table above, the Cronbach's Alpha values for the internal barriers, external barriers, and digitalization readiness variables are all greater than 0.7, indicating that all indicators of these variables are reliable and can be trusted.

Normality Test

The normality test is a procedure conducted to determine whether the data in a variable has a distribution pattern that approximates a normal distribution. The purpose of this test is to ensure that the data used meets the basic assumptions of regression. According to Sujarweni (2015), the conclusion to determine whether a data set follows a normal distribution is assessed by its significance. If the significance is greater than 0.05, then the variable is normally distributed; conversely, if the significance is less than 0.05, then the variable is not normally distributed. The normality test in this study can be seen in the table below.

Table 5. Normality test

Tests of Normality			
	Kolmogorov-Smirnova		
	Statistic	df	Sig.
Unstandardized Residual	0.066	79	0.200

Source: Data Processing (2025).

Based on the results of the normality test using the Kolmogorov-Smirnov method, a significance value of 0.200 was obtained. Since this significance value is greater than 0.05, it can be concluded that the residuals from the regression model are normally distributed.

Multiple Linear Regression Test

Multiple linear regression analysis examines the linear relationship between two or more independent variables (X) and a dependent variable (Y). According to Imam Gozali (2018), regression analysis is used to measure the strength of the relationship between two or more variables and to indicate the direction of the relationship between the dependent and independent variables. The mathematical model for the relationship between these three variables is expressed in the multiple regression equation as follows:

$$\mathbf{Y = a + b1\ X1 + b2\ X2}$$

The results of the multiple linear regression coefficient calculations using SPSS based on the research data are as follows:

Table 6. Multiplier test

Model		Unstandardized Coefficients		Standardized Coefficients	t	sig.
		B	Std. Error	Beta		
1	(Constant)	10.907	3.132		3.483	.001
	X1 (Internal Barriers)	.066	.097	.074	.677	.500
	X2 (External Barriers)	.768	.142	.594	5.416	.000

Source: Data Processing (2025).

The regression coefficients obtained from the table above can be written in the following equation:

$$Y = 10.907 + 0.066\ X1 + 0.768\ X2$$

The multiple linear regression equation can be explained as follows:

a. The constant of 10.907 indicates the level of digitalization readiness when both Internal Barriers (X1) and External Barriers (X2) do not change.
b. Internal Barriers (X1) have a positive coefficient of 0.066, meaning that each unit increase in Internal Barriers (X1) is predicted to affect digitalization readiness by 0.066, assuming External Barriers remain unchanged.
c. External Barriers (X2) have a positive coefficient of 0.768, meaning that each unit increase in External Barriers (X2) is predicted to affect digitalization readiness by 0.768, assuming Internal Barriers remain unchanged.

Hypothesis Testing

According to Sugiyono (2018), a hypothesis is a temporary answer to the research problem formulation, where the research problem has been stated in the form of a question. It is called temporary because the answer is based on relevant theory, not on empirical facts obtained through data collection. The results of the hypothesis testing in this study include two tests: the t-test (partial test) and the F-test (simultaneous test), explained in detail as follows:

1. t-Test

According to Sugiyono (2016), the t-test is also known as an individual significance test. The t-test shows how far the independent variable (X) affects the dependent variable (Y) partially. Ultimately, a conclusion will be drawn whether Ho is rejected or Ha is accepted based on the formulated hypothesis. The results of the t-test in this study are as follows:

Table 7. t test

Model		Unstandardized Coefficients		Standardized Coefficients	t	sig.
		B	Std. Error	Beta		
1	(Constant)	10.907	3.132		3.483	.001
	X1 (Internal Barriers)	.066	.097	.074	.677	.500
	X2 (External Barriers)	.768	.142	.594	5.416	.000

Source: Data Processing (2025).

Based on the table above, the t-values for each variable are as follows:

a. The effect of Internal Barriers (X1) on Digitalization Readiness shows a t-value of 0.677 with a Sig. value of 0.500, which is greater than 0.05. This means that at a 95% confidence level, the Internal Barriers (X1) variable does not have a significant effect on Digitalization Readiness (Y).
b. The effect of External Barriers (X2) on Digitalization Readiness shows a t-value of 5.416 with a Sig. value of 0.000, which is less than 0.05. This means that at a 95% confidence level, the External Barriers (X2) variable has a significant effect on Digitalization Readiness (Y).

2. F-Test

According to Sugiyono (2016), the F-test is used to determine the effect of all independent variables (X) on the dependent variable (Y). Therefore, a simultaneous hypothesis test is conducted using the F statistical test. The results of the F-test in this study are as follows:

Table 8. F test

Model	Sum of Squares	df	Mean Square	f	sig.
Regression	455.666	2	227.833	26.513	.000b
Residual	653.094	76	8.593		
Total	1.108.759	78			

a. Dependent Variable: Y
b. Predictors: (Constant), X1, X2

Source: Data Processing (2025).

Based on the table above, the F-value for the regression model obtained is 26.513 with a significance value of 0.000. Therefore, at a 5% error level, it can be stated that both independent variables, namely Internal Barriers (X1) and External Barriers (X2), have a significant effect on the dependent variable, which is Digitalization Readiness.

Discussion

The results of the research can be elaborated as follows:

a. The Effect of Internal Barriers (X1) on Digitalization Readiness.
Based on the research results, the t-value is 0.677 with a Sig. value of 0.500, which is greater than 0.05. This indicates that at a 95% confidence level, Internal Barriers (X1) do not have a significant effect on the Digitalization Readiness of MSMEs in Dadapayam Village. The research concludes that financial limitations, lack of digital skills, unsupportive organizational culture, and lack of digital leadership are not the main factors determining the digitalization readiness of MSMEs in the area.
b. The Effect of External Barriers (X2) on Digitalization Readiness.
The research results show that the t-value is 5.416 with a Sig. value of 0.000, which is less than 0.05. This means that at a 95% confidence level, the External Barriers (X2) variable has a significant effect on the Digitalization Readiness of MSMEs in Dadapayam Village. The findings indicate that external barriers such as weak technology infrastructure, lack of access to technology, cybersecurity issues, and minimal government support are important factors influencing the extent to which MSMEs are ready for digitalization.
c. The Effect of Internal and External Barriers on Digitalization Readiness of MSMEs in Dadapayam Village.
The research findings indicate that the F-value for the regression model is 26.513 with a significance value of 0.000. Therefore, at a 5% error level, it can be stated that both independent variables, Internal Barriers and External Barriers, have a significant effect on the Digitalization Readiness of MSMEs in Dadapayam Village. This shows that the combination of internal and external factors plays an important role in influencing the readiness of MSMEs for digitalization. Therefore, a comprehensive approach is needed that includes strengthening the internal capacity of MSMEs as well as enhancing support and access from the external environment.

4. CONCLUSION

Based on the research results regarding the effect of internal and external barriers on the digitalization readiness of MSMEs in Dadapayam Village, the following conclusions can be drawn:

1. Internal barriers such as financial limitations, lack of digital skills, unsupportive organizational culture, and lack of digital leadership do not have a significant partial effect on the digital readiness of MSMEs in Dadapayam Village.
2. External barriers such as weak technology infrastructure, lack of access to technology, cybersecurity issues, and minimal government support have a significant partial effect on the digitalization readiness of MSMEs.
3. However, simultaneously, both internal and external barriers have a significant effect on the level of readiness of MSMEs in facing the digital transformation process.

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NOVELTY

This research provides a new contribution to the literature on the digitalization of MSMEs in rural areas by identifying internal and external barriers and analyzing their simultaneous effects on digitalization readiness. The findings indicate that both types of barriers significantly influence the readiness of MSMEs to face digitalization. This approach offers a more comprehensive foundation for appropriate policymakers.

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