

THE INFLUENCE OF DIGITAL LITERACY AND DIGITAL TECHNOLOGY UTILIZATION ON THE DIGITAL ECONOMY GROWTH OF MSMEs IN MAMUJU CITY

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ABSTRACT

This study aims to measure the impact of digital literacy and the use of digital technology on the digital economic growth of MSMEs in Mamuju City. This was a quantitative study with a population comprising all MSMEs in the Mamuju City Office of Cooperatives, MSMEs and Industry, totaling 318 business units. A sample of 75 MSMEs operators was selected using purposive sampling. This study utilized primary data from questionnaires and secondary data from the Mamuju City Office of Cooperatives, MSMEs and Industry. The data collected via the questionnaires were analyzed using SPSS to test the relationships between the variables. Data analysis was carried out through validity and reliability tests, classical assumption tests, multiple linear regression analysis, and hypothesis testing (t-test, f-test, and R²). The test results show the digital literacy variable has a significant partial effect on the digital economic growth of MSMEs in Mamuju City, with a significance value of 0.000. The digital technology utilization variable had a significant partial effect on the digital economic growth of MSMEs in Mamuju City, with a significance value of 0.000. Furthermore, the variables of digital literacy and the utilization of digital technology simultaneously had a significant effect on the digital economic growth of MSMEs in the city of Mamuju.

Keywords: digital literacy; utilization of digital technology; digital economic growth; MSMEs

INTRODUCTION

Through their involvement in the workforce, involvement in the community, and contribution to the national economy, Micro, Small, and Medium-Sized Enterprises (MSMEs) are crucial in promoting economic growth. Information technology advancements propel digital transformation as an upgrade technique to boost MSMEs competitiveness. Digital technology helps with customer service, marketing,

transaction management, and company decision-making. By the end of 2026, the Mamuju municipal government hopes that 70% of MSMEs will have joined the digital ecosystem. Nova et al. (2025) claim that using digital technology to digitize MSMEs can boost productivity, operational effectiveness, and market demand.

The most vital skill for MSMEs actors to possess in order to adapt to changes in the technology-based business

environment is digital literacy. The capacity to use digital gadgets is only one aspect of digital literacy. The ability to effectively seek, comprehend, evaluate, and use digital information to support corporate operations is another aspect of it. The degree of digital literacy among MSMEs players can enhance their capacity to adjust to technology and promote the use of digital media in business and marketing operations, according to research by Rahmatika et al. (2025). As a result, the company's capacity to effectively use digital technology rises along with the MSMEs actors increased digital literacy (Irsyada, 2026).

The use of digital technology, in addition to digital literacy, is a critical component in driving MSMEs digital transformation. Digital literacy refers to an ability or competence, whereas utilization refers to behavior or the level of technology usage. MSMEs actors can expand their market reach through a variety of technologies, including digital market services, digital social platforms, digital payment systems, and electronic payment systems. According to the Technology Acceptance Model (TAM) paradigm, a person's use of digital technology is influenced by their

perception of its ease of use and potential benefits. The decision of MSMEs employees to use digital technology to support business operations is influenced by their assessment of the advantages and usability of technology, according to Fitriasari's (2025) research.

Although digital technology provides various benefits for the development of MSMEs, its implementation still experiences a number of obstacles, such as limited digital capabilities of business actors, limited access to technology, and lack of use of digital platforms in business operational activities (Auliya, 2024). This condition is also seen in MSMEs in Mamuju City, where business actors are still running businesses in traditional ways. Referring to data from the Mamuju City Office of Cooperatives, MSMEs and Industry, the use of marketplaces, social media platforms, and even digital payment technology by MSMEs customers is still not optimal (Irsyada, 2026). This shows that the potential for the growth of the digital economy of MSMEs in Mamuju City still needs to be increased through improving the digital capabilities of business actors.

The results of the study show that digital literacy and the use of digital technology are related to the development

of MSMEs. According to Ferdiansyah and Tricahyono (2023), digital literacy has an impact on improving the digitalization capabilities and financial efficiency of MSMEs. According to Ambarwati et al. (2023), the use of e-commerce can encourage the growth of the MSMEs digital economy through market demand and an increase in purchase volume. In addition, Kamarudin et al. (2025) emphasized that the application of digital technology and e-commerce has a positive and significant impact on business growth, thus enabling the development of MSMEs businesses.

However, the results of studies on the impact of digital literacy on the development of MSMEs still show differences. According to Yanti et al. (2024), digital literacy does not have a significant effect on the productivity of MSMEs. The difference in the results of the study indicates that there is a research gap that requires a more in-depth study by considering the characteristics of the region and related industries. Therefore, research on the relationship between digital literacy and the use of digital technology and the growth of the MSMEs digital economy is still relevant.

One of the research gaps that underlines our work is the simultaneous

examination of these two elements. The purpose of this study was to determine the level of digital literacy and the usage of digital technology, both independently and in tandem, for the development of the digital economy in MSMEs in Mamuju's manufacturing sector. The results of this study are intended to serve as a foundation for local government decision-making about digital-based economic growth and to offer genuine support for the advancement of MSMEs use of digital technology.

LITERATURE REVIEW

Definition of Digital Literacy

The degree to which business development has been accomplished through the application of digital technology is measured by indicators of digital economic growth for MSMEs. This measurement is crucial for comprehending how digital transformation affects micro, small, and medium-sized businesses' sustainability and performance (Ambarwati et al., 2023; Damanik et al., 2023). Increased revenue, broader marketing reach, operational effectiveness, a rise in digital transactions, and the uptake of digital payment systems are among the metrics employed.

Digital competence, digital ethics or manners, digital protection, and digital cultural literacy are the four primary pillars of Indonesia's digital literacy framework, according to the Ministry of Communication and Informatics of the Republic of Indonesia (2021). Numerous elements, including education level, technological experience, motivation to utilize technology, and environmental support for enhancing digital abilities, all have an impact on one's level of digital literacy (Safitri et al., 2025).

Digital Literacy Indicators

To determine the level of digital literacy amongst MSMEs business owners, a number of indicators are required that reflect various aspects of digital competence. These indicators are used to assess the extent to which business owners are able to utilize digital technology optimally and responsibly in developing their businesses (Barblett et al., 2023). The indicators used include digital skills is the ability to use digital devices, communication applications, and networks to access and manage information, digital culture the way people interact, behave, and build mindsets within a digital society based on local and national values, digital security the

capacity to protect digital identity, personal data, and financial assets from online threats, digital critical thinking is the ability to evaluate, analyze, and filter online information objectively before acting on it, collaboration is the process of working together through digital channels to achieve a shared business or economic goal and creativity is the ability to create new, innovative content or business solutions using digital tools.

Definition of Utilization of Digital Technology

The utilization of digital technology is understood as a concrete effort made by MSMEs actors to utilize various digital-based tools and services such as e-commerce, digital payment systems, and social media to support their business activities (Faturrahman et al., 2025). The application of digital technology can be measured through several indicators, including the availability of digital infrastructure, device ownership, digital literacy level, use of various virtual services such as online shopping, digital platforms, and financial applications, the level of trust in digital services, the suitability of technology with business needs, and understanding of applicable regulations (Aziz, et al, 2024.).

In addition, the pace of technology adoption is also influenced by supporting factors such as social support, suitability of technology with the task being carried out, and expectations related to expected performance improvement from the use of the technology.

Digital Technology Utilization Indicators

Indicators of digital technology utilization are used to measure the extent to which MSMEs operators use various digital tools and services in running their business activities. This measurement is important for determining the level of digital technology adoption and the factors influencing it (Faturrahman et al., 2025). The indicators used include digital infrastructure, device ownership, digital literacy, the use of digital services, and trust in digital services

Definition of Digital Economic Growth of MSMEs

Digital economy is a form of economic activity that utilizes digital technology as the main driver of various business processes (BAPPENAS, 2023). In the context of MSMEs, the growth of the digital economy is characterized by increasing production and marketing capacity through digital platforms,

expanding market access, and increasing operational cost efficiency resulting from the transition from conventional to digital-based systems (Damanik et al., 2025).

The growth of the digital economy among MSMEs can be measured through several indicators, such as increased sales revenue, expansion of market reach outside the local area, efficiency of operational costs, increased frequency of online transactions, and adoption of digital payment systems (Ambarwati et al., 2023).

Indicators of Digital Economic Growth of MSMEs

This measurement is crucial for comprehending how digital transformation affects micro, small, and medium sized businesses' sustainability and performance (Ambarwati et al., 2023; Damanik et al., 2023). Increased revenue, broader marketing reach, operational effectiveness, a rise in digital transactions, and the uptake of digital payment systems are among the metrics employed.

The endogenous growth theory states that economic growth is not driven by random external factors, but rather by internal factors within the economic system itself (Aghion, et al, 2022).

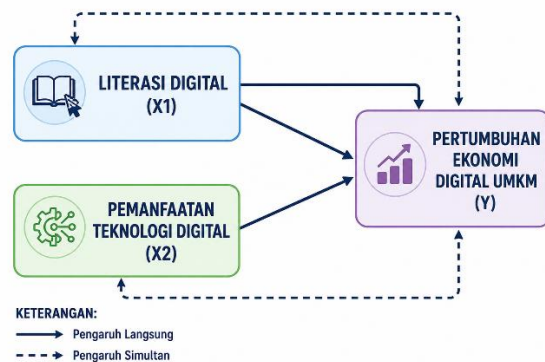


Figure 1. Conceptual Framework

The conceptual framework of this study illustrates the relationship between Digital Literacy and Digital Technology Use as independent variables, and the Digital Economic Growth of MSMEs as the dependent variable. This framework was developed to explain that improvements in digital literacy and digital technology use among MSMEs operators in Mamuju City have the potential to drive digital economic growth. The relationships among the variables were analyzed both partially and simultaneously because the significance value is less than 0.05 to identify the extent of the influence exerted by each independent variable on the dependent variable.

Research Hypotheses

The following research hypotheses are developed in light of the theoretical framework and literature review mentioned above:

H1: Digital literacy has a positive and significant effect on the digital economic growth of MSMEs in Mamuju City.

H2: The use of digital technology has a positive and significant effect on the digital economic growth of MSMEs in Mamuju City.

H3: The digital economic growth of MSMEs in Mamuju City is positively and significantly impacted by both digital literacy and the usage of digital technology.

RESEARCH METHODS

Research Location and Time

MSMEs actors in Mamuju City, West Sulawesi Province, were the subject of this study. The state of MSMEs in Mamuju City, which are still having difficulties with the digital transformation process, particularly with regard to digital literacy and the usage of digital technology in company operations, was taken into consideration while selecting the research site.

Research Type and Data

This study uses a causal associative research design and a quantitative methodology. Sugiyono (2022) defines quantitative data as either processed qualitative data or data in the form of

numbers. This study uses two different kinds of data: supporting data (secondary data) and direct data (primary data). MSMEs actors in Mamuju City were given questionnaires to complete in order to collect primary data directly from respondents. However, secondary data came from a variety of sources, including books, scientific journals, and other supporting materials, as well as the Mamuju City Office of Cooperatives, MSMEs, and Industry.

Research Population and Sample

All MSMEs registered with the Mamuju City Office of Cooperatives, MSMEs, and Industry roughly 315 business units are included in the study's population coverage. According to Sugiyono (2022), about taking a sample with solving formula,

$$n = \frac{315}{1 + 315 (0,1) \cdot (0,1)}$$

$$n = \frac{315}{1 + 315 (0,01)}$$

$$n = \frac{315}{1 + 3,15}$$

$$n = \frac{315}{4,15} = 75,09$$

Equal with 75 people/ or respondent were chosen as samples.

Data Processing Techniques

In addition to a manual questionnaire that was presented to particular samples, the questionnaire was distributed to responders via a Google Form link. Businesses that have been in operation for more than three years are registered as legal entities and have an annual turnover of less than fifty million make up the sample characteristics for the data collected in 2025.

The data obtained through the questionnaire is then edited, coded, scored, and tabulated. The Likert scale, which ranges from 1 to 5, is used to measure respondents' responses (Sugiyono, 2022). The management and stages of data analysis in this study were assisted by the use of the SPSS version 26 application with several checks, namely the validity and reliability test of the instrument, the classical assumption test (normality, multicollinearity, and heteroscedasticity), and the multiple linear regression analysis. The regression model used is:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + e$$

Description:

Y = MSMEs Digital Economy Growth

α = Constant

β_1 = digital literacy regression coefficient

β_2 = Regression coefficient of Digital Technology Utilization
X1= Digital Literacy
X2 = Utilization of Digital Technology
e = Error

The determination coefficient (R^2) is used to assess how well the independent variable explains changes in the bound variable; the t-test is used to test each independent variable's partial influence on the dependent variable; and the F-test is used to ascertain the combined or simultaneous influence of the independent variables (Ghozali, 2018:97-99).

RESULTS AND DISCUSSION

Validity Test Results

The validity test evaluates how well the instrument describes the phenomenon under study. The Pearson Product Moment technique was used to compare the correlation between each item's score and the overall score in order to assess the instrument's validity. The item is deemed acceptable if r -calculated $>$ r -table at $df = n-2$ and significance level $\alpha = 0.05$.

Table 1. Results of the Digital Literacy Validity Test (X1)

Statement	r calculated	r table	P(Sig)	Remarks
X1.1	0.708	0.227	0.000	Valid
X1.2	0.478	0.227	0.000	Valid

X1.3	0.467	0.227	0.000	Valid
X1.4	0.700	0.227	0.000	Valid
X1.5	0.788	0.227	0.000	Valid

The preceding table makes it evident that every statement on the Digital Literacy variable (X1) has a larger r -calculated value than the r -table (0.227) and a significance value of 0.000, which is less than 0.05. As a result, every indication utilized to evaluate digital literacy variables has been shown to be valid, making it suitable for use as an assessment tool in gathering research data and for data collection on digital literacy variables.

Table 2. Results of the Validity Test of the Use of Digital Technology (X2)

Statement	r calculated	r table	P(Sig)	Remarks
X2.1	0.687	0.227	0.000	Valid
X2.2	0.724	0.227	0.000	Valid
X2.3	0.698	0.227	0.000	Valid
X2.4	0.805	0.227	0.000	Valid
X2.5	0.466	0.227	0.000	Valid

Each indicator or statement item of the MSMEs Digital Economy Growth variable in Mamuju City (Y) has a computed r value greater than the table r (0.227) and a significance value (Sig.) of $0.000 < 0.05$, according to the validity test findings shown in table 3 above. As a result, every statement is deemed unique and satisfies the requirements to be utilized as a research tool

Table 3. Results of the Validity Test of MSME Digital Economic Growth in Mamuju City (Y)

Statement	<i>r</i> calculated	<i>r</i> table	P(Sig)	Remarks
Y.1	0.777	0.227	0.000	Valid
Y.2	0.760	0.227	0.000	Valid
Y.3	0.486	0.227	0.000	Valid
Y.4	0.680	0.227	0.000	Valid
Y.5	0.692	0.227	0.000	Valid

Each indicator or statement item of the MSMEs Digital Economy Growth variable in Mamuju City (Y) has a computed *r* value greater than the table *r* (0.227) and a significance value (Sig.) of $0.000 < 0.05$, according to the validity test findings shown in table 3 above. As a result, every statement for all variable is valid.

Reliability Test

To strengthen the instrument's internal fixation, reliability tests are employed. Ghazali (2018) states that a variable is deemed dependable if its Cronbach's Alpha value is more than 0.60.

Table 4. Reliability Test Result

Variable	Cronbach Alpha	Standardization value	Remarks
X1	0.633	0.60	Reliable
X2	0.703	0.60	Reliable
Y	0.680	0.60	Reliable

In Table 4, the results of the reliability test show that each variable has a Cronbach's Alpha value of at least 0.60, namely Digital Literacy (0.633), Digital

Technology Utilization (0.703), and MSMEs Digital Economic Growth in Mamuju City (0.702). Since the Cronbach's Alpha values of all the variables under investigation are higher than 0.60, they are all considered appropriate (reliable).

Normality Test

To ascertain whether the residues in the regression model satisfy the assumption of a normal distribution, normality tests are carried out. The Kolmogorov-Smirnov test was used to perform the normalcy test in this investigation. The significant value of 0.200, which was higher than the predetermined threshold of 0.05, was revealed by the test results on the residual that had not been standardized. Therefore, it may be said that the research model satisfies the assumption of normality since the residual data in the regression model is regularly distributed.

Multicollinearity Test

A multicollinearity test is used to ascertain whether independent variables are correlated. $VIF < 10$ and tolerance value > 0.10 were the applied criterion.

According to the multicollinearity test results, the two independent variables

had a VIF value of 1.605 (< 10) and a tolerance value of 0.623 (> 0.10). As a result, the independent variables in the regression model do not exhibit multicollinearity.

Heteroskedasticity Test

The scatter plot graph's point distribution between the Regression Standardized Predicted Value and the Regression Studentized Residual was examined using the heteroscedasticity test. According to the test results, the dots that occur above and below the number 0 on the Y axis are dispersed randomly, and do not create a particular pattern. Consequently, it may be concluded that the regression model has no heteroscedasticity problems.

Multiple Linear Regression Analysis

The result for multiple linier regression are,

Table 5. Multiple Linier Regression Test Result

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Beta	t	Sig.
	B	Std. Error			
1 (Constant)	-2.494	2.369		-1.053	.000
Digital Literacy Utilazion of Digital Technology	.557	.113	.396	4.182	.000
	-.534	.109	.464	4.902	.000

a. Dependent Variable: Digital Economic Growth

The following multiple linear regression results were derived from the analysis's findings:

$$Y = -2.494 + 0.557 X_1 + 0.534 X_2 + e$$

The regression equation is described as follows:

When independent variables, such as digital literacy and digital technology utilization, are absent or have no effect, the constant value of $a = -2.494$ represents the amount of MSMEs Digital Economic Growth in Mamuju City.

At a significance level of about 0.000, the Digital Literacy variable's regression coefficient is $b_1 = 0.557$. Because the significance level is less than 0.05, this indicates that digital literacy has a substantial impact on the expansion of MSMEs digital economies in Mamuju City. Additionally, the t-calculated value of 4.182 is greater than the t-table value of 1.666, suggesting that digital literacy has a significant influence on the growth of MSMEs' digital economies in Mamuju.

With a significance level of around 0.000, the Digital Technology Utilization variable's regression coefficient is $b_2 = 0.534$. Because the significance level is less than 0.05, these findings demonstrate that the growth of the digital economy of MSMEs in Mamuju is significantly impacted by the usage of digital

technology. This variable has a considerable impact on the expansion of the digital economy of MSMEs in Mamuju, as seen by the t-calculation value of 4.902, which is significantly bigger than the t-table (1.666).

Partial Test (t-test)

The t-test is used to understand the impact of each independent variable individually.

Table 6. T Test Result

Model	Coefficients ^a				Sig.
	B	Std. Error	Standardized Coefficients Beta	t	
1 (Constant)	-2.494	2.369		-1.053	.000
Digital Literacy Utilization of Digital Technology	.557	.113	.396	4.182	.000
	-.534	.109	.464	4.902	.000

a. Dependent Variable: Digital Economic Growth

The t-table employed in this study has a degree of freedom ($df = n - k - 1 = 75 - 2 - 1 = 72$) based on the t-test results, and the value is around 1.666 at the significance level of $\alpha = 0.05$.

With a significance level of 0.000, the t-calculated value of the Digital Literacy variable (X1) is about 4.182. Because t-calculated > t-table ($4.182 > 1.666$) and Sig. < 0.05, H1 is allowed. To put it

another way, the development of the digital economy of MSMEs in Mamuju is positively and significantly impacted by digital literacy.

With a significance level of 0.000, the t-calculated value of the Digital Technology Utilization Variable (X2) is about 4.902. Because the t-calculated > t-table ($4.902 > 1.666$) and Sig. < 0.05, H2 is approved. Put differently, the expansion of the digital economy of MSMEs in Mamuju is positively and significantly impacted by the usage of digital technology.

Simultaneous Test (f-test)

Table 7. F Test Results

Models	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	449,585	2	224,792	53.519	.000 ^b
Residual	302,415	72	4,200		
Total	751,00	74			

a. Dependent Variable: Digital Economic Growth
b. Predictors: (Constant), Utilization of Digital Technology, Digital Literacy

To ascertain the cumulative effect of independent factors, the f-test is used. ANOVA analysis yielded an f-calculated value of $53.519 > f_{\text{table}}$ of 3.12 with a significance level of $0.000 < 0.05$. H₃ is therefore approved. This indicates that the development of digital MSMEs in Mamuju is significantly impacted by both digital literacy and the concurrent usage of digital technologies.

Coefficient Of Determination Test

The model's capacity to explain dependent variables impacted by independent factors is assessed using the coefficient of determination (R^2).

Tabel 8. Determinant Coefficient Results

Models	R	R Square	Adjusted R Square	Std Error of the Estimate
1	,773 ^a	,598	,587	204,944

The model's capacity to explain dependent variables impacted by independent factors is assessed using the coefficient of determination (R^2). The R-Square value is around 0.598, or 59.8%, based on the test findings (R^2). This shows that digital literacy and the simultaneous use of digital technology account for 59.8% of the variation in the digital economy of MSMEs in Mamuju City, with the remaining 40.2% being influenced by unstudied factors outside the research model.

Discussion

The results of the study for t test show that MSMEs in Mamuju City's digital economic growth is positively and significantly impacted by digital literacy and Utilization of Digital Technology. These results imply that MSMEs entrepreneurs have more opportunities to

propel their companies' digital economic growth if they are more adept at comprehending, obtaining, assessing, and utilizing digital information and technology

For F test result, all independent variables had a positive impact and significant for Digital Economic Growth.

T Test results are consistent with research conducted by Ferdiansyah and Tricahyono (2023), which states that digital literacy can improve the digitalization capabilities of MSMEs as well as their financial efficiency. However, the results of this study are not consistent with the findings of Yanti et al. (2024), who concluded that digital literacy has no significant influence on the productivity of MSMEs. This discrepancy in results is thought to be influenced by the characteristics of the study areas, the level of readiness among business owners, and the varying availability of digital infrastructure across different regions. This study also shows that the use of digital technology has a positive and significant impact on the digital economic growth of MSMEs.

This means that the more effective digital technology is utilized in business activities such as digital marketing, electronic transactions and the use of

various digital platforms the greater the opportunities for MSMEs to thrive within the digital economy ecosystem. This finding supports the results of Fitriasari's (2025) research, which emphasizes that perceptions of the benefits and ease of use of technology are key factors driving the adoption of digital technology.

According to the coefficient of determination ($R^2 = 0.598$), digital literacy and the adoption of digital technology simultaneously account for 59.8% of the variation in digital economic growth among MSMEs. This suggests that both variables play a significant role in driving the development of the digital economy amongst MSMEs. Nevertheless, 40.2 per cent of the variation in digital economic growth is still influenced by factors outside the research model, such as the availability of business capital, the quality of digital infrastructure, government policy support, market conditions, and the innovative capacity of MSMEs operators. Therefore, to drive the digital economic growth of MSMEs, support is required that focuses not only on improving digital literacy and the use of technology, but also on strengthening various other supporting factors.

CONCLUSION

The study's conclusions demonstrate that the degree of digital literacy among MSMEs players has a favorable and substantial impact on the expansion of MSMEs digital economies in Mamuju. This suggests that there is a growing possibility to expand the use of digital technology in tandem with MSMEs actors' growing ability to access, comprehend, and utilize digital information. Therefore, it is possible to accept the first hypothesis put forward in this study.

The development of the digital economy of MSMEs in Mamuju City is positively and significantly impacted by both digital literacy and the usage of digital technology, with the latter having the biggest impact. These findings demonstrate that improving the digital capabilities of business actors that effectively use digital technology can boost the growth of the MSMEs digital economy. As a result, this study's third hypothesis is deemed accepted.

Research Limitations

This study has several limitations that must be acknowledged. Firstly, the study was conducted solely in the city of Mamuju; consequently, its findings cannot be generalized to MSMEs in other

regions with different characteristics and levels of digital infrastructure. Secondly, the sample size used in this study was relatively small (75 respondents), which may limit the representativeness of the results. Thirdly, there are numerous other factors that could impact the digital economic growth of MSMEs, including infrastructure, financial resources, and government backing, but this study only looked at two independent variables (digital literacy and the usage of digital technology). The fourth, limitations for the cross-sectional design, self-reported questionnaire.

RECOMMENDATIONS

Based on the findings of the completed research, the following are some recommendations that may serve as guidelines for the government, MSMEs operators and researchers in the future: The first is for the Regional Government, especially Mamuju City Office of Cooperatives, MSMEs and Industry, it is recommended to expand policies, education and training programs on digital literacy and the use of digital technology so that MSMEs actors can use it more effectively. Secondly, MSMEs actors are advised to continue to improve digital literacy and utilize digital technology such

as social media, marketplaces, and digital payment systems to expand market share and increase business profits. And for the next researcher, it is recommended to include other variables that may have an impact on the growth of the MSMEs digital economy, such as innovation, quality of human resources, or access to capital, so that the results of the research can provide a more comprehensive picture.

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