

## The Effect of Financial Inclusion and Literacy Through Digital Payment (QRIS) on MSME Profitability

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### ABSTRACT

This study aims to show the effect of Financial Inclusion and Literacy on MSME Profitability through Digital Payment (QRIS). The research sample was obtained from MSMEs with business sectors in culinary and fashion used quantitative methods. The data for this study were obtained from primary sources through the distribution of questionnaires. Data processing was carried out using multiple linear regression analysis techniques on smartPLS 4.0. The research findings show that Financial Inclusion and Literacy significantly affect MSME Profitability. On the other hand, the presence of QRIS as moderation does not show a significant effect on the relationship between inclusion and Financial Literacy with MSME Profitability. These results show that MSMEs have been good at accessing and using financial services to increase business sales, but perhaps education and optimization in the use of QRIS are still needed to be involved in MSME financial activities. This research is expected to be able to provide insight and education regarding the ease of using financial services and transactions using payment digitization.

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## **INTRODUCTION**

Indonesia is a country with a population of more than 200 million. In the development of the times, information technology has also developed very rapidly. With these developments and in the current era of globalization, it can help and facilitate all forms of Micro, Small and Medium Enterprises (MSMEs) activities for much easier access to financial services and services to carry out safe, controlled and easy financial activities (Asmita and Suryantara 2024) by making work easier and providing the latest innovations to move forward. The use of digital technology and e-commerce opens up new horizons for MSMEs to explore markets without geographical boundaries, allowing them to go beyond mere business continuity by creating a more competitive income ecosystem in the midst of rapid digitalization (Hartanto et al. 2024).

Technological advances have brought significant changes in various aspects of MSME life, including in the payment system. A study conducted by (Intan Berlianawati, Nurabiah, and Ridhawati 2024) suggests digital payments as a more dominant and preferred method in conducting daily transactions. Modern payment technology not only provides convenience for consumers, but also opens up new opportunities for businesses. In addition, these developments have also encouraged financial inclusion and literacy by enabling access to financial services for people who were previously unreachable. Reinforced in (Qosasi et al. 2019) Small businesses are able to improve the level of supply chains and relationships with customers, so they must adopt Information and Communication Technology as a means to transform their business operations.

The 2022 National Survey on Financial Literacy and Inclusion (SNLIK) conducted by the Financial Services Authority (OJK) noted that the financial inclusion index reached 85.10 percent, while the financial literacy index was at 49.68 percent. ([www.ojk.go.id](http://www.ojk.go.id), (Yuardi Aprilian, Anggun Hilendri Lestari, and Nurabiah 2023)). This is an increase compared to the SNILK period in 2019, where the financial inclusion index was 76.19 percent and financial literacy was 38.03 percent. The survey results show that from year to year some people have used financial services products. Although the inclusion and literacy indexes continue to increase, the community and government continue to work together to maintain and sustain the financial inclusion and literacy indexes.

Financial inclusion focuses on ensuring that all people including Micro, Small and Medium Enterprises (MSMEs) have the opportunity to use access to financial services such as banking, insurance and credit. By having this access, they are able to manage their finances better, protect themselves from financial risks and to gain profitability as expected (Septiani and Wuryani 2020). Therefore, financial literacy is needed to provide the knowledge and skills needed to make wise financial decisions (Balqis, Safitri, and Hariyanto 2024).

The presence of digitized payments can improve and expand financial inclusion and literacy on the benefits that will be obtained by MSMEs. Seeing this situation, Bank Indonesia introduced the Quick Response Code Indonesian Standard (QRIS) which is a national standard for the use of QR codes in payment systems. This initiative integrates various types of QR codes from Payment System Service Providers (PJSP), both banks and non-banks, into a unified

framework ([www.bi.go.id](http://www.bi.go.id) (Tatian et al. 2024)). The implementation of QRIS is designed to make it easier for MSME players to make transactions that are simpler, faster, safer and more reliable. With the implementation of QRIS, people can use any payment application to transact at various merchants with the QRIS logo, such as shops, merchants, stalls, parking lots, tourist destinations to donations.

This research is important to do in order to determine the causal effect of financial inclusion and financial literacy through digital payments (QRIS) on the profitability of MSMEs in Mataram City. The contribution of this research can evaluate the efficiency of digital financial markets in MSMEs and imply government policies to increase the effectiveness of digital payments.

In other areas, many researchers have conducted the following research, but for Mataram City it is still rare to find research that discusses financial behavior related to digital payment (QRIS). This research also integrates the theory of planned behavior in exploring the financial behavior of MSME actors. This is the difference from previous studies from the aspect of research location, research year, technical analysis of data and variables used to be able to distinguish the results of research from before.

## **LITERATURE REVIEW**

### ***Financial Inclusion and Literacy***

According to the Financial Services Authority (OJK), financial inclusion refers to the availability of community access to various financial institutions, products, and services that suit their needs and capacities, with the aim of improving social welfare. Then in research (Allen et al. 2016) Financial inclusion has the potential to improve financial stability and economic growth by expanding the consumer base for financial institutions and strengthening financial intermediation. In the digital context, financial inclusion also includes access to digital financial services such as digital payments, online loans and digital insurance, which have grown in popularity in recent years. Financial knowledge is a combination of skills and beliefs that play a role in shaping individual attitudes and behaviors in decision-making and optimal financial management, with the aim of improving quality of life and achieving prosperity. Financial literacy is a concept in an individual's understanding of managing finances, investing, saving, budgeting, managing debt and minimizing risk.

### ***Effect of Financial Inclusion on MSME Profitability***

MSME players need financial inclusion to make their business processes easier. The supporting factor for a business is capital. MSME players often face problems related to capital and marketing processes. Easing access to financial services can solve these problems (Hilmawati and Kusumaningtias 2021). In research (Rani and Desiyanti 2024), states that everyone can access to use financial goods and services according to their needs. Business people who use digital payment methods will directly learn how to use payment applications and their features. This effort is interpreted as financial inclusion. Reinforced in research (R. Atarwarman, et al., 2023) states that digital payment has a positive effect on financial inclusion. Based on this, researchers consider it important to

retest the effect of financial literacy on MSME profitability in order to strengthen the findings and views that have been put forward from previous research. So that the hypothesis formulated in this study is:

**H1: Financial Inclusion has a positive effect on MSME Profitability**

***QRIS users moderate the effect of Financial Inclusion on MSME Profitability***

Increasing financial inclusion for MSMEs has been considered an important component that can increase the profitability of a business. Through the development and application of financial technology, it can support innovation in achieving stable financial services, namely the presence of QRIS. A QR code-based payment system standardized for all financial service providers in Indonesia. QRIS allows non-cash transactions that are easier, faster and more efficient for businesses and consumers. Findings on research (Nurhaliza et al. 2023) in Pekanbaru where QRIS has a positive impact on digital business transaction activities in the MSME sector, with the potential to increase daily income through the implementation of a system that supports smooth non-cash transactions. In research (Nasharuddin 2022) using QRIS e-retribution as moderation in strengthening the effect of compensation on improving employee performance. (Nasution et al. 2024) in his service also resulted in QRIS giving more Medang Village community members access to financial services, such as digital payments for nutritious food and health products. This shows that the presence of QRIS can facilitate all forms of activities that occur. QRIS not only increases convenience in transactions, but also provides opportunities for MSMEs to connect with the formal financial system, expand market reach and increase professionalism in financial management. Therefore, with the existing phenomenon, the role of QRIS in moderating financial inclusion on MSME profitability can be further explored because it has the potential to strengthen MSME access to financial services.

**H2: The use of QRIS can moderate the effect of Financial Inclusion on MSME Profitability**

***The Effect of Financial Literacy on MSME Profitability***

Financial literacy is the level of understanding of individuals and communities regarding how to manage finances effectively in accordance with the needs and economic conditions faced. Business owners need an adequate understanding of finance to support more effective financial management, so as to increase efficiency in operational activities. In research (Hilmawati and Kusumaningtias 2021) said that financial literacy has a major contribution in supporting the improvement of MSME performance. Also mentioned in research (Marhamah 2023), Muslim entrepreneurs who are the object of research have the ability to manage good business finances, supported by the QRIS system, making it easier for business actors to prepare financial reports, because every payment transaction can be recorded and tracked automatically. So that financial literacy has a positive influence on the use of digital payment QRIS. Based on this, researchers consider it important to retest the effect of financial literacy on MSME profitability in order to strengthen the findings and views that have been put

forward from previous research. So that the hypothesis formulated in this study is

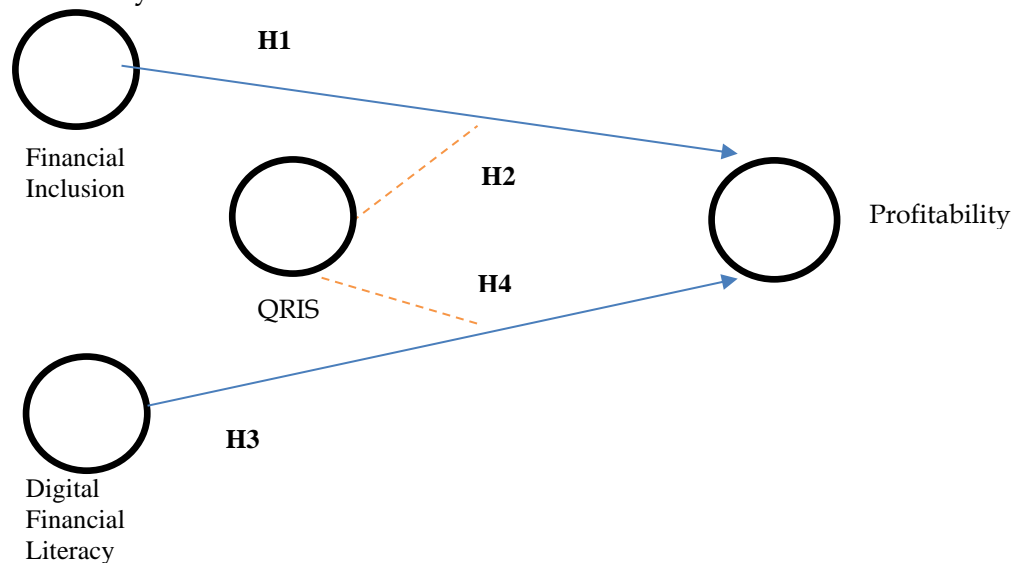
**H3: Financial Literacy has a positive effect on MSME Profitability**

***QRIS users moderate the effect of Financial Literacy on MSME Profitability***

The presence of QRIS can help MSMEs to improve financial literacy indirectly, because business actors are encouraged to understand more about cash management, utilization of digital financial services and financial management and reporting. The financial literacy of MSMEs in Solo City in the study (SARI 2024) increased with the adoption of QRIS. The use of QRIS in MSME operations can be a factor that moderates the relationship between financial literacy and profitability. For MSME players who already have adequate financial literacy, QRIS can strengthen the impact of literacy in achieving profitability. Therefore, further research can be carried out related to the role of QRIS in moderating the effect of financial literacy on MSME profitability.

**H4: The use of QRIS can moderate the effect of Financial Literacy on MSME Profitability**

The following is a description of the conceptual framework of research on the Effect of Financial Inclusion and Literacy through Digital Payemnt QRIS on MSME Profitability:



**Figure 1. Conceptual Farmework Model**

*Source: Data, processed (2024)*

**METHODOLOGY**

This research applies a quantitative approach with an associative design. The data source used is primary data collected through the distribution of questionnaires to MSME players in Mataram City with the limitation of culinary and fashion sales products. The population in this study were MSME players in the Mataram City area. The sample technique used was *purposive sampling* with a sample of 80 MSME players, among which 40 have used QRIS and 40 have not used QRIS. The data collected using survey techniques directly from respondents

in the form of answers or responses to questionnaires. Researchers also conducted another alternative by distributing questionnaires via the google form link. The data analysis technique in this study uses multiple linear analysis with the help of smartPLS 4 applications. The tests used in this study are validity test and reliability test. Validity test is a parameter that reflects the extent to which the research instrument has legitimacy and suitability for measurement purposes (Meivira, Dewi, and Puspitasari 2022). Measurements are made with a loading factor > 0.70 and Average Variance Extracted (AVE) > 0.50 (Wold, Eriksson, and Kettaneh 2010). While the reliability test is a test to assess the consistency and reliability of a questionnaire in supporting the credibility of the research results (Rajalahti and Kvalheim., 2011; Saffanah Syadzaa Zahirah, Anna Marina, and Fitri Nuraini., 2024). The reliability test in the study was carried out using Chronbach's Alpha analysis and composite reliability with a measurement of > 0.7 (Gorai, Kumar, and Angadi 2024).

## RESEARCH RESULT

### *Respondent Demographics*

The following is the demographic data of the Respondents obtained, as presented in Tabei 2.

Table 1. Respondent Demographics

Criteria	Information	Total	Persentase
Age of respondent	17-25 Year	27	34%
	26-35 Year	18	23%
	36-45 Year	17	21%
	> 45 Year	18	23%
Line of business	Kuliner	68	85%
	Fashion	12	15%
Duration of business continuity	< 1 Tahun	25	31%
	1-3 Tahun	17	21%
	3-5 Tahun	17	21%
	> 5 Tahun	21	26%
Sales per month	< 5.000.000	37	46%
	5.000.000-10.000.000	24	30%
	10.000.000-15.000.000	8	10%
	> 15.000.000	11	14%
Profit per month	< 5.000.000	51	64%
	5.000.000-10.000.000	21	26%
	10.000.000-15.000.000	4	5%
	> 15.000.000	4	5%
Using QRIS or not	Already	40	50%
	Not yet	40	50%

*Source: Data, processed (2024)*

Based on the table above, the majority of respondents in this study are in the age range of 17-25 years (34%). Most of them (80%) are MSME players in the

culinary sector, both food and beverages. The MSMEs have various stages of development, with 31% being in the early stage (<1 year) and 21% having entered the middle stage (3-5 years). In terms of monthly sales, the majority of MSMEs generate revenue of less than IDR5,000,000 (46%), indicating that most businesses are still classified as micro or small. This is also reflected in monthly profits, where 64 per cent of MSMEs earned less than IDR5,000,000, indicating relatively low profit margins. In addition, this study found that respondents were evenly split between MSMEs that have used QRIS and those that have not (50% each).

Table 2. Validity Test

Variabel	Item	Loading Factor	Information
Financial Inclusion	IK 2	0.840	Valid
	IK 3	0.774	Valid
	IK 4	0.787	Valid
	IK 6	0.802	Valid
	IK 7	0.832	Valid
	IK 8	0.734	Valid
Digital Financial Literacy	LKD 2	0.732	Valid
	LKD 3	0.851	Valid
	LKD 4	0.852	Valid
	LKD 5	0.751	Valid
	LKD 7	0.746	Valid
	LKD 9	0.732	Valid
	PRO 1	0.737	Valid
	PRO 3	0.805	Valid
	PRO 4	0.788	Valid
	PRO 5	0.797	Valid
PRO 6	0.813	Valid	
Profitability	IK 5	0.770	Valid
	IK 6	0.852	Valid
	IK 8	0.855	Valid
	LKD 2	0.753	Valid
	LKD 3	0.857	Valid
QRIS	LKD 9	0.767	Valid
	QRIS x IK	1.000	Valid
	QRIS x LKD	1.000	Valid

Source: Data, processed (2024)

Before heading to the hypothesis testing stage, researchers conducted validity and reliability tests (Table 3). The validity test is used as a measure of the effectiveness or validity of the survey. Measurements made so that declared valid

if it produces a loading factor value > 0.70 (Wold et al. 2010). If invalid items are found, they should be removed and not included in the data analysis process. The results of this research validity test are contained in (Table 2) above, resulting in all item components being valid and ready to test for each variable.

Table 3. Reliabel Test

Variabel	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	AVE	Information
Financial Inclusion Digital	0.884	0.891	0.912	0.633	Reliabel
Financial Literacy	0.870	0.874	0.902	0.607	Reliabel
Profitability	0.848	0.848	0.891	0.622	Reliabel
QRIS	0.895	0.901	0.920	0.657	Reliabel

Source: Data, processed (2024)

Reliable tests need to be carried out to determine whether the instrument used can provide accurate information and present actual information in the field (Sholihah and Nurhapsari 2023). This test uses Cronbach's alpha, Composite reliability with criteria > 0.70 and Average Variance Extracted (AVE) > 0.50 so that it can be said to be reliable (Wold et al. 2010). In this study, reliable testing has been carried out in Table 3 where all variables can be declared reliable because they have met the criteria.

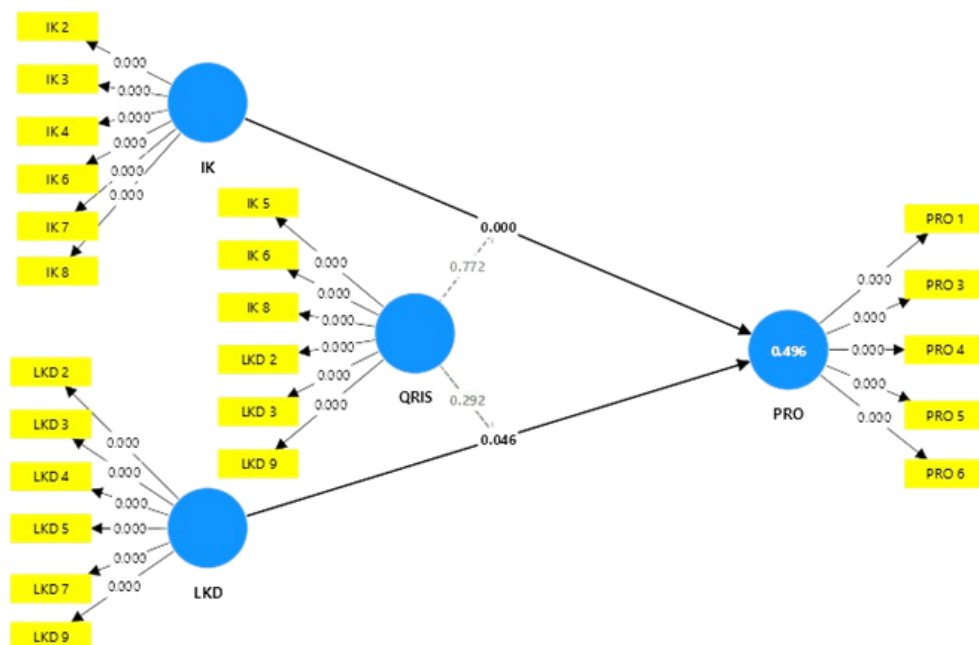


Figure 2. Inner Model of Partial Least Square Analysis

Source: Data, processed (2024)

The t-statistic value and probability reveal that the hypothesis has been tested. So, it is known when using this value if the value is less than 0.05, the hypothesis can be accepted (Raihan et al. 2024). The hypothesis formulated can

be tested through the use of empirical data obtained from this study. Based on the review of the data, the following hypothesis testing results are presented:

Table 4. Hypothesis Testing Results

Hypothesis	Variabel Connecting	Path coefisient	Sample mean (M)	Standard deviation (STDEV)	T statistics ( O/STDEV )	P values	Information
H1	IK -> PRO	0.559	0.546	0.145	3.854	0.000	Accepted
H2	QRIS x IK -> PRO	-0.035	-0.035	0.120	0.290	0.772	Rejected
H3	LKD -> PRO	0.411	0.394	0.206	2.000	0.046	Accepted
H4	QRIS x LKD -> PRO	0.145	0.169	0.138	1.055	0.292	Rejected

Source: Data, processed (2024)

In Figure 2 and Table 4, we can obtain information from the test results using Bootstrapping, which provide mixed results between the hypotheses proposed by the researcher. The effect of financial inclusion on profitability shows significant results, as indicated by the p-value of 0.000, which is below the significance threshold of 0.05. In addition, the path coefficient value of 0.559 reflects a positive influence. Thus, the first hypothesis H1 is accepted. Furthermore, QRIS can moderate the effect of Financial Inclusion on Profitability resulting in a p-value of 0.772 > 0.05, meaning that QRIS in moderating Financial Inclusion on Profitability is not significant with a path coefficients value of -0.035. H2 in this case is rejected and negative, meaning that QRIS as moderation has a negative effect on Financial Inclusion on Profitability. The effect of Digital Financial Literacy on Profitability produces a p-value of 0.046 which is < 0.05 and a positive path coefficient of 0.411. H3 in this case is accepted because it is significant and has a positive effect. Furthermore, QRIS in moderating Digital Financial Literacy on Profitability gets a p-value of 0.292 with a path coefficient of 0.145, meaning that H4 is not accepted or rejected because the p-value > 0.05 but QRIS in moderating Digital Financial Literacy on Profitability has a positive effect.

Table 5. R-square Test

	R-square	R-square adjusted
Profitability	0.496	0.462

Source: Data, processed (2024)

Table 5 presents the results of the coefficient of determination, which is used to evaluate the level of fit of the model or the strength of the relationship between the analyzed variables. The coefficient of determination ranges from zero to one. The closer the value is to one, the greater the proportion of information provided by the independent variables in explaining the dependent variable. (Saragih, M. G; Saragih 2024). If you look at Table 5, the R-square produces 0.496 or 49.6%, but because this study uses more than 2 indicators, the value used is the adjusted R-square of 0.462 or 46.2%. Based on the results of the

coefficient of determination test, it is known that digital financial inclusion and literacy contribute 46.2% to the profitability variable. With the rest possibly influenced by other variables that have not been tested in this study.

## **DISCUSSION**

This study indicates that the effect of Financial Inclusion has a positive impact on the profitability of MSMEs. This result is in line with the results of research (Merisna, Indriani, and Suryantara 2023), (Marhamah 2023), and (Septiani and Wuryani 2020). Financial Inclusion is a driving factor in the financial success of MSMEs. The integration of MSMEs with financial services provides tangible benefits in improving efficiency, expanding markets or managing finances better. Ease of access to financial services, use and utilization of financial services serve as key indicators in increasing the profits of MSME actors. These results are also in line with the Theory of Planned Behaviour (TPB), which states that a person's attitude towards a behavior (Tian et al. 2023), in this case financial inclusion, significantly impacts MSME profitability. Thus, a positive attitude towards financial inclusion in accessing financial services is likely to result in higher profitability in financing life, business and family needs.

Furthermore, QRIS moderates Financial Inclusion on MSME Profitability. In this finding, QRIS weakens the effect of Financial Inclusion on MSME Profitability insignificantly. Not in line with research (Atarwaman et al. 2023), (Afandi, Rukmana, and R 2022). Therefore, QRIS does not play a role in moderating the relationship between financial inclusion variables and MSME profitability. The presence of digital payment is not very significant in using financial services to generate business profits. In this case, it means that MSME players may not fully understand or optimize the use of QRIS in their financial activities. Lack of education, additional costs in administration or not fully in accordance with the needs of the MSME market in terms of features and acceptance by consumers. This QRIS may be a burden for MSME players, thus reducing the positive impact of Financial Inclusion.

In the influence section, Digital Financial Literacy has a positive relationship with MSME Profitability. This finding is in line with (Hilmawati and Kusumaningtyas 2021), (Marhamah 2023), (Septiani and Wuryani 2020), and (Balqis et al. 2024) the better MSMEs master digital financial concepts, the greater their potential to increase business profits. Effective financial planning, utilization of the latest technology and information, and structured bookkeeping management can support MSME players in improving performance and increasing their profitability levels. Theory of Planned Behaviour (TPB) is also still in line with this event where if you have an attitude of wanting to improve financial knowledge, skills in managing finances and attitudes and behaviors can result in profitability that is good enough to carry out the business activities of MSME actors.

Furthermore, QRIS moderates Digital Financial Literacy on MSME Profitability. Throughout this study, QRIS strengthens Digital financial literacy on MSME profitability insignificantly. Not in line with research (Kusnandar, Sari, and Sahroni 2024), (Balqis et al. 2024). The use of QRIS as a digital payment tool contributes to supporting digital financial literacy, but its impact on MSME

profitability is not strong enough to be considered statistically meaningful. This may be due to several factors, such as the limited adoption rate of QRIS, the lack of technological literacy among MSMEs or market conditions that are not yet optimal to support digital transformation.

## CONCLUSIONS AND RECOMMENDATIONS

This study reveals that Digital Financial Inclusion and Literacy significantly affect the Profitability of MSMEs in Mataram City, confirming the importance of financial service access and digital financial management capabilities in improving business performance. However, QRIS as moderation did not show a significant effect, indicating the need for education and optimization of the use of this technology. These findings have important implications for the government, financial institutions and MSME players. The government needs to expand financial inclusion through equitable digital infrastructure, training, and incentivizing the use of QRIS. Financial institutions are expected to provide flexible services and QRIS features that suit the needs of MSMEs. Meanwhile, MSME players need to improve digital financial literacy to utilize financial technology to support business sustainability.

## ADVANCED RESEARCH

The limitations of this study are the coverage area only in Mataram City and limited samples, suggesting that future research expand the research area, as well as explore other factors, such as organizational culture and barriers to QRIS adoption, to provide a more comprehensive and in-depth understanding. Future research can explore QRIS in influencing the cost structure and working capital of MSMEs and the effect of QRIS adoption on the financial resilience of MSMEs during the appropriate and realistic crisis.

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