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IMPACT OF FINTECH AND RISK MANAGEMENT ON THE SUSTAINABILITY PERFORMANCE OF MSMEs (Micro, Small and Medium Enterprises)

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Abstract

This study aims to analyse the impact of Fintech and Risk Management on the Sustainability Performance of MSMEs in Mataram City. Using a quantitative approach, this study involved 100 MSMEs that have adopted Fintech services in the sub-district cakranegara and sub-district mataram areas. Data was collected through a 5-point Interval scale-based questionnaire and analysed using multiple linear regression with SPSS software version 22. The results showed that Fintech has a significant effect of 27.8% on MSME Sustainability Performance, while Risk Management has a significant effect of 53%. These findings highlight the importance of digital financial literacy and strategic risk management implementation in supporting MSME business sustainability. This research recommends MSME players to optimally utilise Fintech services and implement structured risk management. In addition, government policies are expected to facilitate digital financial literacy training and provide technical guidance on risk management for MSMEs. With this approach, Fintech will not only improve MSME competitiveness but also strengthen their business sustainability in the digital economy era.

Keywords: Financial Technology (Fintech); Risk Management; Sustainability Performance MSMEs.

Abstrak

Penelitian ini bertujuan untuk menganalisis dampak Fintech dan Manajemen Risiko terhadap Kinerja Keberlanjutan UMKM di Kota Mataram. Menggunakan pendekatan kuantitatif, penelitian ini melibatkan 100 UMKM yang telah mengadopsi layanan Fintech di wilayah kecamatan Cakranegara dan kecamatan Mataram. Data dikumpulkan melalui kuesioner berbasis skala Interval 5 poin dan dianalisis menggunakan regresi linier berganda dengan perangkat lunak SPSS versi 22. Hasil penelitian menunjukkan bahwa Fintech berpengaruh signifikan sebesar 27,8% terhadap Kinerja Keberlanjutan UMKM, sedangkan Manajemen Risiko memiliki pengaruh signifikan sebesar 53%. Temuan ini menyoroti pentingnya literasi keuangan digital serta implementasi manajemen risiko yang strategis dalam mendukung keberlanjutan bisnis UMKM. Penelitian ini merekomendasikan pelaku UMKM untuk memanfaatkan layanan Fintech secara optimal dan menerapkan manajemen risiko yang terstruktur. Selain itu, kebijakan pemerintah diharapkan dapat memfasilitasi pelatihan literasi keuangan digital serta menyediakan panduan teknis dalam pengelolaan risiko bagi UMKM. Dengan pendekatan ini, Fintech tidak hanya meningkatkan daya saing UMKM tetapi juga memperkuat keberlanjutan bisnis mereka dalam era ekonomi digital.

Kata Kunci: Financial Technology (Fintech); Manajemen Risiko; Kinerja Keberlanjutan UMKM.



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INTRODUCTION

The rapid advancement of technology compels us to better understand and adapt to the flow of globalization. In line with this, fintech has emerged as a result of increasingly modern technological developments, particularly in the financial sector. Financial Technology (Fintech) is an innovative combination of information technology with conventional financial services (Harsono & Suprapti, 2024). In recent years, the advancement of financial technology, or Fintech, has transformed how micro, small, and medium enterprises (MSMEs) obtain funding and utilize financial services. (Candraningrat et al., 2021). A report from OJK states that in 2022, MSMEs contributed 61.07% to Indonesia's GDP, with a total of 64.2 million MSME participants. However, many MSMEs still face challenges in gaining adequate access to finance, so Fintech has emerged as a promising solution (Fandiyanto, 2023).

Fintech provides various services, such as digital lending where borrowers and lenders are directly connected through an online platform (peer-to-peer), digital payments, and financial management that enable MSMEs to improve operational efficiency (Rasyid, 2023). Data from Statistics shows that the value of Fintech transactions in Indonesia is expected to reach USD 40.1 billion by 2023, with an annual growth of 23.2%. This indicates that MSMEs are making greater use of technology to enhance their financial performance. However, the use of Fintech also brings certain risks, especially related to data security and Risk Management. According to a report from Deloitte, around 30% of MSMEs using Fintech services experience data security issues. For this reason, it is crucial for MSMEs to adopt effective Risk Management strategies to safeguard their assets and maintain business sustainability. (Hanggraeni et al., 2019). Good Risk Management can help MSMEs identify, analyse, and mitigate the risks they face (Kelvin et al., 2023). Through this approach, MSMEs can increase investor and customer confidence. A study by the Ministry of Cooperatives and SMEs found that MSMEs that implement good Risk Management can improve their performance by up to 25% compared to those that do not.

The rapid development of Financial Technology (Fintech) has brought many conveniences for MSMEs in gaining access to financing and financial management (Putri et al., 2023). Data shows that by 2022, around 40% of MSMEs in Mataram have utilised Fintech services to obtain working capital, indicating a change in the way they adapt to technology. However, even though Fintech offers various conveniences, Risk Management remains a crucial aspect that must be considered. MSMEs frequently encounter challenges related to risk management, including credit risk, operational risk, and market risk. Based on a survey conducted by Bank Indonesia, 55% of MSME players in Mataram admitted to not having an adequate understanding of Risk Management, which could result in financial losses in the future. The sustainability performance of MSMEs is greatly influenced by how they manage their risks. Good Risk Management will help MSMEs to survive and grow in a competitive business environment. This research gap arises because although Fintech has been widely used, but there are no researchers who connect Fintech and Risk Management specifically to the Sustainability Performance of MSMEs, especially in Mataram.

Mataram City was chosen as the research location for several strategic

reasons. According to data from Bank Indonesia in 2022, around 40% of MSMEs in Mataram have used fintech services to obtain working capital, but there are still obstacles in managing financial risks faced by business actors. In addition, as the economic centre of West Nusa Tenggara (NTB), Mataram has a thriving MSME ecosystem, making it a relevant location to study the impact of Fintech and risk management on business sustainability. By choosing Mataram, this research is expected to provide more contextualised insights into the challenges and opportunities of Fintech implementation in supporting MSMEs in developing regions.

Fintech and risk management were chosen as the main variables in this study based on several considerations. First, Fintech is increasingly becoming an important factor in improving financial accessibility for MSMEs, but its impact on business sustainability is still mixed depending on the way financial management is applied (Agustina, 2023). Second, risk management is a crucial aspect in ensuring business stability, especially in an uncertain business environment Muhtarom (2022). Therefore, this research seeks to explore how integrating Fintech with risk management can effectively enhance the sustainability of MSMEs.

Research conducted by Mulyanti & Nurhayati (2022) Indicates that financial literacy and Fintech, both individually and collectively, have a positive and significant influence on the financial performance of MSMEs. Muttaqin (2023) Indicates that the partial research findings reveal digital innovation has a significant positive impact on financial performance, while Fintech does not significantly influence the financial performance of SMEs in Tegal City. Additionally, the Sustainability Report shows no significant effect on financial performance. However, the simultaneous research results indicate that digital innovation, Fintech, and sustainability reports collectively have a significant impact on financial performance. Kisin & Setyahuni (2024) Clarifies that financial literacy and financial inclusion positively influence the sustainability of MSMEs, whereas financial technology does not have a positive impact on the sustainability of MSMEs. Nugraha et al. (2022) Indicates that Sharia Fintech and government support directly impact the sustainability of MSMEs. This suggests that enhancing the use of Islamic Fintech can improve MSME sustainability, while government support can boost sustainability through direct policies targeting MSME continuity and indirect policies by promoting Islamic Fintech. Meanwhile, Islamic financial literacy does not directly influence MSME sustainability but has an indirect effect by encouraging the use of Islamic Fintech.

Although numerous studies have explored the impact of Fintech on MSMEs, research findings remain inconsistent. Some studies indicate that Fintech positively influences MSME performance (Al-Amudi et al., 2024; Mukti et al., 2022) Meanwhile, other studies reveal that Fintech does not significantly affect business sustainability (Dewi, 2023; Maulana et al., 2022). Moreover, certain studies emphasize that financial literacy is crucial for the effective use of Fintech (Abu Basar et al., 2024; Ikhsanuddin et al., 2024), while other studies show that MSMEs focus more on using Fintech without improving financial literacy (Rolando, 2024). These conflicting results indicate uncertainty about Fintech's role in supporting the sustainability of MSMEs. In addition, most studies focus more on Fintech in general without considering the risk management aspect as a determining factor for business

sustainability. In fact, several studies have shown that MSMEs that implement risk management well tend to have more stable and sustainable performance (Ikhsanuddin et al., 2024; Kelvin et al., 2023). However, limited research has directly connected Fintech with risk management in the context of MSME sustainability, particularly in Indonesia. This study addresses this gap by exploring the relationship between Fintech and risk management on the sustainability performance of MSMEs in Mataram City. In addition to investigating the direct influence of Fintech on MSME sustainability, this research also examines how risk management strategies can enhance the positive effects of Fintech on MSMEs.

This research seeks to thoroughly examine the relationship between the utilization of financial technology (Fintech) and the application of risk management on the sustainability performance of MSMEs in Mataram City. The focus of the research is to understand how Fintech can provide MSMEs with easy access to funding, operational efficiency and financial management, and how risk management helps MSMEs identify, anticipate and manage potential threats that may affect business continuity. This research will also explore the linkages between MSMEs' ability to utilise Fintech and risk management strategies in creating stability and sustainable growth amidst the challenges of the digital era. The results of this study are expected to provide practical guidance for MSME players in utilising financial technology and integrating risk management into their business strategies, while supporting the development of relevant policies to strengthen the competitiveness of MSMEs in Mataram City.

LITERATURE REVIEW

Resource-Based View (RBV) is a theory that views the company as a collection of unique strategic resources (Dasuki, 2021). This theory states that the competitive advantage of a company comes from the company's ability to utilise its internal resources. These resources encompass assets, capabilities, competencies, organizational processes, information, and knowledge under the company's control. RBV highlights the significance of internal resources in attaining a sustainable competitive advantage.

In the context of MSMEs, RBV can be used to analyse how fintech and risk management can be resources that contribute to sustainability performance.

1. **Fintech as a Resource:** Fintech can be considered an intangible resource that provides value to MSMEs. Utilizing fintech platforms can enhance operational efficiency, broaden market reach, and simplify access to funding. MSMEs that effectively leverage fintech can gain a competitive edge over those that do not adopt these technologies.
2. **Risk Management as a Capability:** Risk management is an organisational capability that is essential for the sustainability of MSMEs. It involves identifying, assessing, and mitigating risks that may affect MSME performance. MSMEs with good risk management capabilities are better able to face challenges and capitalise on opportunities, thereby improving sustainability performance.
3. **MSME Sustainability Performance:** MSME sustainability performance can be measured from various aspects, such as financial, social, and environmental

performance. By utilising fintech and implementing effective risk management, MSMEs can improve performance in all three aspects, thereby achieving business sustainability.

Financial Technology (Fintech) and MSME Sustainability Performance

Financial Inclusion Theory highlights the importance of access to finance for all levels of society and businesses, especially MSMEs, in improving economic growth and business sustainability. The theory suggests that accessible financial services, including digital banking, fintech, and microcredit, can enhance productivity and financial stability for small businesses (Awanti, 2018).

Fintech innovation has been shown to significantly increase financial inclusion. Studies indicate that fintech and expanded banking access positively influence financial inclusion, suggesting that technological advancements can close the gap for underserved communities (Rehman, 2023). The integration of mobile internet, big data and cloud computing in fintech platforms enables better identification and management of financial risks, thereby promoting inclusive finance (Hasan et al., 2022). This is particularly relevant in regions such as Ghana, where digital money services have revolutionised financial access for individuals and businesses, helping them escape poverty through better financial services (Senyo et al., 2022).

Moreover, the adoption of fintech by MSMEs has been attributed to a greater understanding of financial technology and its benefits. A study found that a significant percentage of MSMEs realise the potential of fintech in revolutionising their financial landscape by offering affordable financial products. This is also true in India, where fintech platforms are considered pivotal in providing equitable and affordable financial services, thereby improving the financial well-being of small businesses (U. Gupta et al., 2022). Furthermore, fintech's ability to simplify processes and reduce costs can improve consumer experience, which is an important factor in driving sustainable economic growth (Demertzis et al., 2018).

The role of fintech in driving financial inclusion is also demonstrated through its ability to provide access to financial services that were previously hard to reach, especially for marginalised groups such as people with disabilities. By facilitating access to financial products, fintech can improve financial literacy and change financial behaviour, ultimately improving the financial condition of individuals (Gafoor & Amilan, 2024). This is in line with the goals of the UN 2030 Sustainable Development Agenda, which emphasises the importance of utilising fintech to reduce financial exclusion and income inequality (Demir et al., 2022). In addition, the regulatory environment plays an important role in shaping the effectiveness of fintech in improving financial intermediation. A conducive regulatory framework can foster fintech innovation while ensuring consumer protection and financial stability. Nevertheless, to fully realize fintech's potential in promoting financial inclusion, challenges like regulatory obstacles and cybersecurity issues need to be addressed (Tiony, 2024).

In summary, the Financial Inclusion Theory is reinforced by the rise of fintech, which serves as a transformative catalyst in expanding access to financial services for MSMEs. By leveraging technology, fintech not only simplifies financial transactions but also empowers underserved communities, supporting sustainable

economic growth. Therefore, the hypotheses of this study are:

H1: Financial Technology (Fintech) and MSME Sustainability Performance

Risk Management and Sustainability Performance of MSMEs

Enterprise Risk Management (ERM) theory highlights the significance of holistic risk management within organizations, including MSMEs. ERM refers to a strategic approach in identifying, assessing, and managing risks that may impact business objectives (Gates, 2006). In the context of MSMEs, ERM helps anticipate financial, operational, strategic, and compliance risks, which if not managed properly can hinder business growth and sustainability. MSMEs that implement ERM can increase resilience to economic uncertainty, market volatility, and regulatory changes.

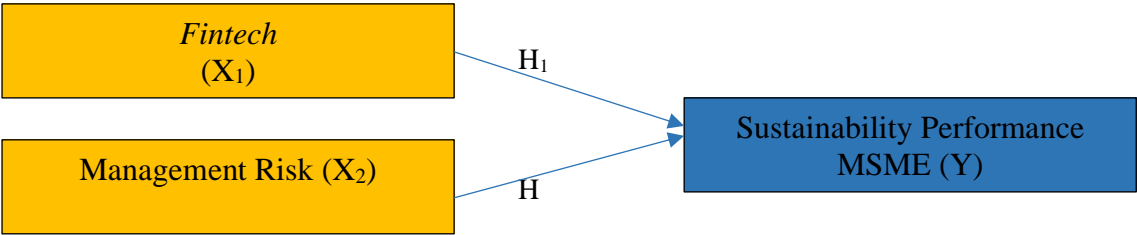
One relevant approach is Enterprise Risk Management (ERM), which focuses on managing risk across the organisation and linking risk to strategic objectives. According to Lu, ERM involves the integration of different types of risks, including production risks and business activities, to achieve the ultimate strategic goal (Lu, 2013). This is in line with Gupta's findings, which show that effective risk management can help organisations cope better with possible business failures (Gupta, 2011). Aoun's research indicates that in the context of MSMEs, risk management practices, particularly risk identification, positively influence the financial performance and resilience of MSMEs in Lebanon during times of crisis (Aoun, 2024). This indicates that effective risk management practices can enhance the sustainability of MSMEs.

Furthermore, Stan-Maduka (2010) highlights that good risk management practices can help businesses in Africa to remain competitive and achieve higher returns (Maduka, 2010). In a broader context, Filipović et al. (2018) Highlight the significance of business continuity management within the risk management process, as it helps organizations maintain operational continuity during crises. This approach is particularly relevant for MSMEs, which often face greater challenges in terms of resources and access to information. In addition, research by Karadag (2015) Reveals that MSMEs often encounter financial management challenges due to limited knowledge of risk management and uncertainties in the business environment. Therefore, it is important for MSMEs to develop a better understanding of risk management and apply it in their daily practices. This will not only help them in overcoming existing challenges, but also in planning for long-term growth.

Overall, effective application of risk management theory in MSMEs can increase their resilience to financial and operational uncertainties, and support their business sustainability. By integrating risk management into business strategy, MSMEs can be better equipped to face emerging challenges and capitalise on opportunities. Thus, the hypotheses of this study are:

H2: Risk Management and Sustainability Performance of MSMEs

Figure 1. Hypothesis Model



RESEARCH METHODOLOGY

This study employs a quantitative research approach to empirically examine the impact of the independent variables, Financial Technology (Fintech) and Risk Management, on the dependent variable of MSME Sustainability Performance. The research subjects are MSME players located in the city of Mataram, with a focus on the sub-district cakranegara and sub-district mataram areas that have adopted financial technology in their business operations. This location was selected based on the researcher’s survey, which indicates that these two areas have a relatively high level of financial technology adoption among MSMEs compared to other regions in Mataram City. Meanwhile, the object of research is focused on the extent to which Fintech implementation and Risk Management practices contribute to the sustainability of MSME performance. The research process is illustrated in Figure 2.

Figure 2. Research procedure

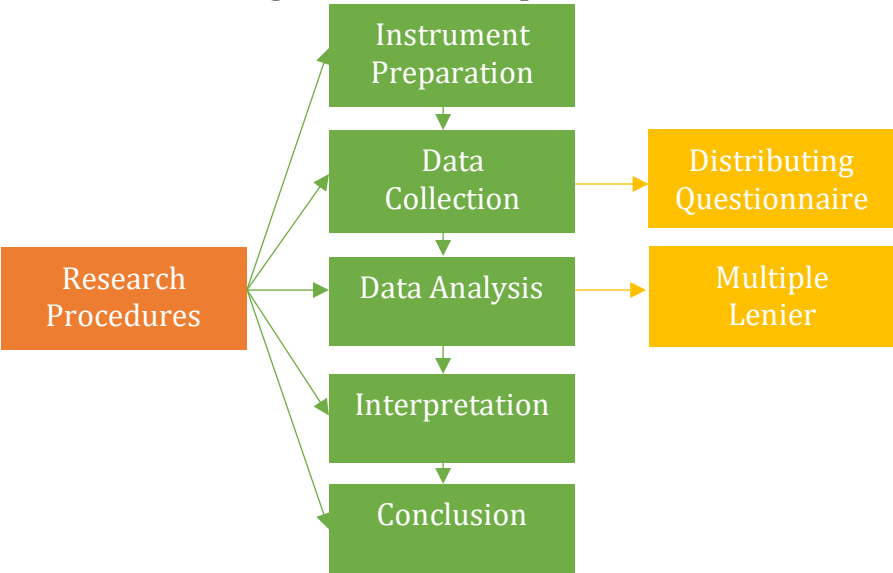


Figure 2 shows that in this study, A total of 100 respondents were selected using a purposive sampling method, targeting MSME business owners in Mataram City. This method was used to ensure that the data obtained was relevant to the research objectives, namely analysing the experiences and perspectives of business actors in the context under study. This method enables the research to be more

targeted and aligned with the characteristics of the subjects being studied. This research was measured using a 5-point Interval scale, with answer choices, 1 Disagree, 2 Disagree, 3 Neutral, 4 Agree, 5 Strongly agree. The questionnaire contains statements to measure the research variables, namely the use of Fintech, the application of Risk Management, and the level of MSME Sustainability Performance. The data obtained from the questionnaire was then processed and analysed using SPSS software version 22. The data analysis technique used was multiple linear regression which allows the identification of the simultaneous impact between Fintech and Risk Management variables on MSME Sustainability Performance. Through the interpretation of regression coefficients, this research seeks to reveal the direction and strength of the causal relationship between the independent variables (Fintech and Risk Management) and the dependent variable (MSME Sustainability Performance). In the final stage, the empirical findings obtained will be synthesised to draw valid conclusions regarding the significant contribution of Fintech and Risk Management to the sustainability of MSME performance, so as to provide theoretical and practical contributions in the development of MSMEs in the digital era. The Concept Definition Instrument and Variable Operational Definition can be seen in Table 1.

Table 1. Concept Definition and Operational Definition of Variables

No	Variable	Concept Definition	Indicator	Measurement
1	Fintech (X1)	Financial technology that supports digital-based financial services to improve accessibility and transaction efficiency for MSMEs.	1. Quick 2. Efficient 3. Easily accessible (Source: (Wirananda, 2022))	Interval Scale 1-5
2	Risk Management (X2)	A structured approach to identifying, evaluating, and managing risks to reduce adverse effects on business sustainability.	1. Risk governance and culture 2. Risk 3. Strategy 4. Goal Setting 5. Risk in implementation 6. Risk information 7. Communication 8. Reporting 9. Risk management performance monitoring (Source: (Muhtar et al., 2023))	Interval Scale 1-5

3	MSME Sustainability Performance (Y)	The extent to which small and medium-sized enterprises maintain long-term operations by achieving financial stability and maintaining competitiveness.	1. Operating profit 2. Business growth 3. Business competitiveness 4. Business resilience (Source: (Ariyanti, 2024)	Interval Scale 1-5
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Source: Data processed by researchers (2024)

Table 1 shows that the instrument in this study is a questionnaire consisting of each variable including (1) Fintech variables (X₁) as many as 6 questions with indicators of fast, efficient, and easy access (Wirananda, 2022); (2) Risk Management variables (X₂) as many as 6 questions with indicators of governance and risk culture, risk, strategy, goal setting, risk in implementation, risk information, communication, reporting, and monitoring Risk Management performance (Muhtar et al., 2023); (3) MSME Sustainability Performance variables (Y) as many as 6 questions with indicators of business profit, business growth, business competitiveness and business resilience (Ariyanti, 2024).

RESULT AND DISCUSSIONS

Descriptive Data

Data was collected through an online questionnaire distributed to MSMEs in Mataram City that have adopted Financial Technology (Fintech) services. Of the total MSMEs that met the criteria, 100 respondents completed the questionnaire, which included information on gender, age, and length of business. Details of the data that provide a demographic picture of respondents regarding their profile in relation to the use of Fintech services can be seen in Table 2.

Table 2. Descriptive Statistics

Description	Category	Total	Percentage (%)
Gender	Women	69	69,0%
	Male	31	31,0%
Age	Under 20 Years	14	14,0%
	21-30 Years	59	59,0%
	31-40 Years	21	21,0%
	41-50 Years	6	6,0%
	51-60 Years	0	0,0%
Length of business	< 1 Years	33	33,0%
	1-3 Years	42	42,0%
	4-6 Years	22	22,0%
	7-10 Years	2	2,0%
	> 10 Years	1	1,0%

Source: Data processed by researchers (2024)

In Table 2, it can be obtained that based on the data obtained, the majority are female with a percentage of 69%, while 31% are male. This shows that women are more dominant in running MSMEs than men. In terms of age, most respondents were in the 21-30 years range (59%), followed by the 31-40 years age group (21%), under 20 years (14%), and 41-50 years (6%), while there were no respondents aged 51-60 years. This shows that the majority of MSME players are at a productive age, especially among the younger generation. Based on length of business, the majority of respondents have been in business for 1-3 years (42%), followed by less than 1 year (33%), 4-6 years (22%), 7-10 years (2%), and more than 10 years (1%). This data indicates that most MSMEs are still in the early stages of business development. This table is important to understand the characteristics of respondents in assessing the impact of Fintech and Risk Management on the sustainability of MSME performance. Furthermore, based on descriptive data analysis, respondents' scores on the impact of Fintech and Risk Management on MSME Sustainability Performance can be seen in Table 3.

Table 3. Descriptive Value of Respondents

	Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
<i>Fintech</i>	100	50.00	100.00	81.4500	12.18740	148.533
Risk Management	100	47.00	100.00	78.9700	11.93286	142.393
MSME Sustainability Performance	100	47.00	100.00	79.5800	11.33617	128.509
Valid N (listwise)	100					

Source: Data processed by researchers (2024)

Table 3 explains that the descriptive value of respondents shows that the Fintech variable (X_1) has a minimum value of 50.00 and a maximum of 100.00 with an average (mean) of 81.45 and a standard deviation of 12.19. This shows that the level of Fintech utilisation by MSMEs in this study tends to be high, with moderate variation between respondents, as reflected in the variance of 148.53. For the Risk Management variable (X_2), the minimum value is 47.00 and the maximum is 100.00 with an average of 78.97 and a standard deviation of 11.93. This data shows that the level of Risk Management implementation in MSMEs is generally in the middle to upper category, with a slightly more homogeneous distribution of data than Fintech, as seen from the variance of 142.39. Meanwhile, the MSME Sustainability Performance variable (Y) has a minimum value of 47.00 and a maximum of 100.00 with an average of 79.58. Its standard deviation of 11.34 indicates that the level of MSME sustainability is relatively consistent among respondents, with the smallest variance among the three variables, at 128.51.

Percentage Level of Respondents' Perception

The percentage level of respondents' perceptions with the Fintech indicator can be seen in Figure 3.

Figure 3. Fintech indicators

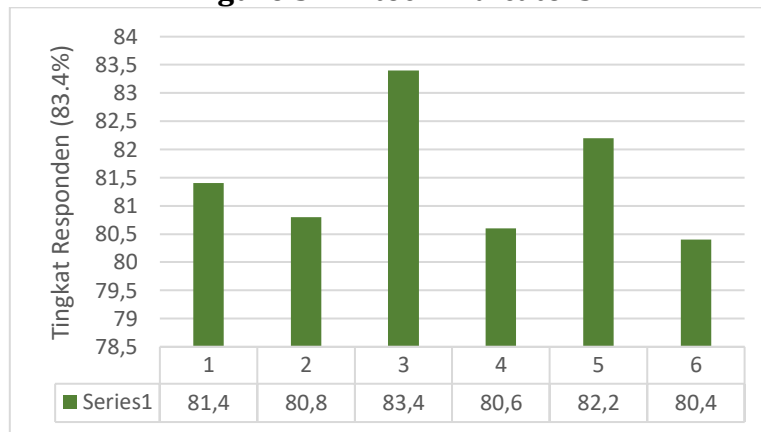


Figure 3 shows that the use of Fintech has a positive impact on the operational efficiency of MSMEs in Mataram City. Most MSME players, 83.40% of respondents, agree that Fintech helps save time in the payment process, which indicates an increase in time efficiency in business transactions. This finding is in line with research by Setiawati et al. (2024) which states that Fintech is able to speed up the transaction process and reduce operational costs for MSMEs. However, the level of ease in accessing Fintech services has a lower percentage of 80.20%, this is supported by Rolando (2024) which states that the main obstacles to Fintech adoption are accessibility and technological literacy. The percentage level of respondents' perceptions with Risk Management indicators can be seen in Figure 4.

Figure 4. Risk Management Indicators

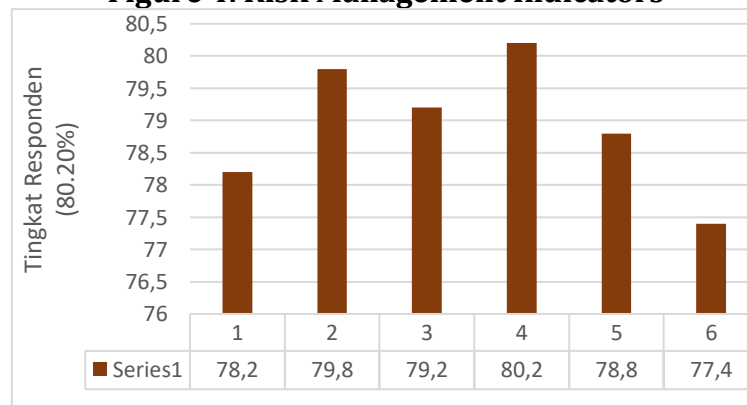
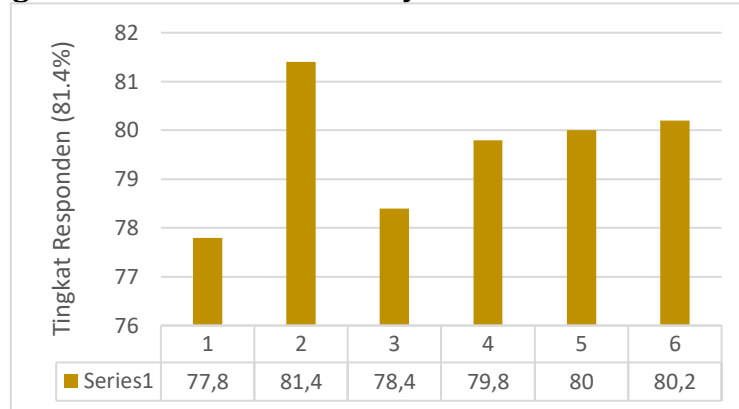


Figure 4 shows that the percentage level of MSMEs in Mataram City shows that around 80.20% of respondents have a good ability to identify and manage risks in the implementation of their business to avoid losses. This finding is in line with the research of Aziz et al. (2024) which states that good risk management capabilities can help MSMEs reduce the impact of losses due to market uncertainty. This percentage is the highest indicator compared to other indicators. However, the level of regular risk monitoring and reporting is still relatively lower, at 77.40%. This is supported by Octiva et al. (2024) which shows that many MSMEs still face challenges in establishing a consistent risk monitoring system due to limited resources and knowledge. The percentage level of respondents' perceptions related

to the MSME Sustainability Performance indicator can be seen in Figure 5.

Figure 5. MSME Sustainability Performance Indicators



Based on Figure 5, respondents who stated that their business experienced positive growth from year to year had the highest percentage, at 81.40%. This finding is supported by research by Wijaya et al. (2021) which states that the adoption of technological innovation and the implementation of good financial management can encourage sustainable business growth. In addition, the use of Fintech services and the implementation of good Risk Management also contribute to the stability or increase in business profits, but have a lower percentage, which is 77.80%. This is supported by the research of Ratundima et al. (2023) which states that the level of financial literacy and understanding of risk management are still the main challenges that hinder the full potential of the technology.

Instrument Test

Validity and reliability tests are essential in research to ensure the quality of data collection instruments. The validity test verifies that the instrument accurately measures the intended variables, while the reliability test ensures that the instrument provides consistent results when used repeatedly under similar conditions (Campoamor et al., 2024). By conducting validity and reliability tests, a researcher can ensure that the results of his research are credible, relevant, and accountable. The results of the validity and reliability tests for the Fintech variable (X_1) can be seen in Table 4.

Table 4. Validity and Reliability Test of Fintech Variables (X_1)

Variables	Item	R Hitung	r Tabel	Nilai Sig	Results	Cronbach's Alpha	Results
Fintech (X_1)	X _{1.1}	0.769	0.195	0.000	Valid	0.847	Reliabel
	X _{1.2}	0.836			Valid		
	X _{1.3}	0.818			Valid		
	X _{1.4}	0.736			Valid		
	X _{1.5}	0.663			Valid		
	X _{1.6}	0.697			Valid		

Source: Data processed by researchers (2024)

Table 4 explains that the results of the validity and reliability tests on the Fintech variable (X_1) show that all statement items have a calculated r value greater than the r table (0.195) with a significance level (Sig) of $0.000 < 0.05$ so that they are declared valid. The Cronbach's Alpha value for this variable is $0.847 > 0.60$ which indicates that each questionnaire item is reliable. The results of the validity and reliability tests for the Risk Management variable (X_2) can be seen in Table 5.

Table 5. Validity and Reliability Test of Risk Management Variables (X_2)

Variables	Item	R Hitung	r Tabel	Nilai Sig	Results	Cronbach's Alpha	Results
Management Risk (X_2)	X _{2.1}	0.787	0.195	0.000	Valid	0.842	Reliabel
	X _{2.2}	0.754			Valid		
	X _{2.3}	0.747			Valid		
	X _{2.4}	0.734			Valid		
	X _{2.5}	0.745			Valid		
	X _{2.6}	0.719			Valid		

Source: Data processed by researchers (2024)

Based on Table 5 it is obtained that the results of the validity and reliability tests for the Risk Management variable (X_2) show that all statement items have a calculated r value greater than r table 0.195 with a significance level (Sig) of $0.000 < 0.05$ so that they are declared valid. The Cronbach's Alpha value is $0.842 > 0.60$ which indicates that each questionnaire item is reliable. The results of the validity and reliability tests for the MSME Sustainability Performance variable (Y) can be seen in Table 6.

Table 6. Validity and Reliability Test of Sustainability Performance Variables MSMEs (Y)

Variables	Item	R Hitung	r Tabel	Nilai Sig	Results	Cronbach's Alpha	Results
Sustainability Performance MSME (Y)	Y.1	0.706	0.195	0.000	Valid	0.794	Reliabel
	Y.2	0.693			Valid		
	Y.3	0.677			Valid		
	Y.4	0.704			Valid		
	Y.5	0.695			Valid		
	Y.6	0.750			Valid		

Source: Data processed by researchers (2024)

Table 6 can explain that the results of the validity and reliability tests for the MSME Sustainability Performance variable (Y) show that all statement items have a calculated r value greater than r table 0.195 with a significance level (Sig) of $0.000 < 0.05$ so that they are declared valid. In addition, the Cronbach's Alpha value is $0.794 > 0.60$ which indicates that each questionnaire item is reliable.

Classical Assumption Test

The classical assumption test is crucial in research as it helps ensure the accuracy and validity of data analysis outcomes. This test ensures that the

regression model used reflects an accurate relationship between the variables being analysed (Sholihah et al., 2023). By conducting a classic assumption test, researchers can detect and correct potential problems that can interfere with the results of the analysis, resulting in more precise and credible conclusions. The normality test results can be seen in Table 7.

Table 7 Normality Test
One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		100
Normal Parameters ^{a,b}	Mean	.0000000
	Std. Deviation	5.79438002
Most Extreme Differences	Absolute	.083
	Positive	.083
	Negative	-.074
Test Statistic		.083
Asymp. Sig. (2-tailed)		.089 ^c

Source: Data processed by researchers (2024)

In Table 7, the normality test using the One-Sample Kolmogorov-Smirnov Test shows that the Asymp. Sig. (2-tailed) of 0.089, which is greater than 0.05. This indicates that there is not enough evidence to reject the null hypothesis, so it can be concluded that the residual data is normally distributed. Thus, the normality assumption is met in this analysis. The Multicollinearity test results can be seen in Table 8.

Table 8 Multicollinearity Test

		Coefficients ^a				Collinearity Statistics	
		Unstandardized Coefficients	Std. Error	Standardized Coefficients	t	Sig.	ToleranceVIF
1	(Constant)	11.156	4.213		2.648	.009	
	Fintech	.278	.074	.298	3.742	.000	.424 2.360
	Management Risk	.580	.076	.611	7.660	.000	.424 2.360

a. Dependent Variable: Kinerja Keberlanjutan UMKM

Source: Data processed by researchers (2024)

Based on Table 8, the multicollinearity test shows that the Tolerance and Variance Inflation Factor (VIF) values show that the two independent variables, namely Fintech and Risk Management, have a Tolerance value of 0.424 and a VIF of 2.360. Because the Tolerance value is greater than 0.100 and VIF is smaller than 10.00, it can be concluded that there are no multicollinearity symptoms in this regression model, so the independent variables do not have a strong linear relationship with each other. The results of the Heteroscedasticity test can be seen in Table 9.

Table 9. Heteroscedasticity Test

Variables	Sig	Conclusion
Fintech	.370	No heteroscedasticity
Management Risk	.062	No heteroscedasticity

Source: Data processed by researchers (2024)

Based on Table 9, the results of the heteroscedasticity test by looking at the significance value (Sig.) of the independent variable on the residuals show that the Fintech variable has a significance value of 0.370, while the Risk Management variable has a significance value of 0.062. Both of these values are greater than 0.05, so it can be concluded that heteroscedasticity does not occur in this regression model. Thus, the regression model fulfils the classical assumptions and can be used for further analysis.

Hypothesis Test

Hypothesis testing is done to test the correctness of assumptions or predictions made based on theory or data. Hypothesis testing helps ensure that the relationship between observed variables is not just the result of chance, but has a statistically sound basis beforehand (Rubin & Donkin, 2022). By conducting hypothesis testing, it can provide more valid and objective conclusions. So that the research results are not only relevant to answer research questions, but can also be trusted and used as a basis for decision making. Furthermore, the coefficient of determination test to determine the effect of variables X1 and X2 on Y can be seen in Table 10.

Table 10. Determination Coefficient Test

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.859 ^a	.739	.733	5.85381

Source: Data processed by researchers (2024)

Based on Table 10, it explains that the correlation coefficient (R) value is 0.859 which shows a very strong relationship between the Fintech (X₁) and Risk Management (X₂) variables on MSME Sustainability Performance (Y). The R Square value is 0.739 or 73.9%, this means that the effect of variables X₁ and X₂ simultaneously on variable Y is 73.9%. Furthermore, the effect of X₁, X₂ simultaneously on Y with ANOVA test and significance can be seen in Table 11.

Table 11 shows that the significance value for the simultaneous effect of Fintech (X₁) and Risk Management (X₂) on MSME Sustainability Performance (Y) is 0.000 < 0.05 and the calculated F value is 137.135 > 3.09 F table, indicating that the model as a whole has a significant relationship with variable Y. This shows that there is a significant effect of the X₁ and X₂ variables simultaneously on the Y variable.

Table 11. ANOVA Test Results and Significance

ANOVA ^a						
	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9398.451	2	4699.225	137.135	.000 ^b
	Residual	3323.909	97	34.267		
	Total	12722.360	99			

Source: Data processed by researchers (2024)

The multiple regression equations X_1 and X_2 on Y by testing hypotheses H_1 and H_2 using the Multiple Lenier Regression Equation Coefficient Test according to Table 12.

Table 12. Multiple Lenier Regression Equation Coefficient Test Results

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1	(Constant)	11.156	4.213	2.648	.009
	Fintech (X_1)	.278	.074	.298	.000
	Risk Management (X_2)	.580	.076	.611	.000

Source: Data processed by researchers (2024)

In Table 12, the regression equation is obtained as follows:

$$Y = 11.156 + 0.278X_1 + 0.508X_2 + e$$

Based on the regression equation, it shows that the Constant value of the model is 11,156 which indicates the value of MSME Sustainability Performance if the two independent variables are considered zero. The Fintech variable (X_1) has a regression coefficient of 0.278 or as much as 27.8% with a t value of $3.742 > t$ table 1.984 and a significance level of $0.000 < 0.05$ indicating that it has a significant effect on MSME Sustainability Performance (Y). So it can be concluded that H_1 is accepted, which means that there is an influence of X_1 on Y . Meanwhile, the Risk Management variable (X_2) has a regression coefficient of 0.580 or as much as 58% with a t value of $7.660 > t$ table 1.984 and a significance level of $0.000 < 0.05$ which also shows a significant influence on MSME Sustainability Performance (Y). So it can be concluded that H_2 is accepted which means that there is an effect of X_2 on Y . The standardized Beta coefficient shows that Risk Management (0.611) has a relatively greater influence than Fintech (0.298) in improving MSME Sustainability Performance.

Fintech's Impact on MSME Sustainability Performance

The impact of Fintech on the sustainability performance of MSMEs can be seen in Table 12 which shows that the Fintech variable has a regression coefficient of

0.278 with a calculated t value of $3.742 > t \text{ table } 1.984$ and a significance level of $0.000 < 0.05$ indicating that Fintech has a significant effect on MSME Sustainability Performance 27.8%. This shows that the influence of Fintech on the Sustainability Performance of MSMEs in Mataram City is very significant. This is supported by research by (Marini et al. (2020) showing that fintech plays an important role in increasing financial inclusion for MSMEs, especially in South Tangerang, using quantitative methods to analyse data obtained from questionnaires. In addition, Fakhirin et al. (2022) It was found that fintech financing positively influences the performance of MSMEs in Palembang, indicating that access to fintech funding can enhance business performance.

Impact of Risk Management on MSME Sustainability Performance

Based on the results of the statistical test of the impact of Risk Management on MSME Sustainability Performance, it can be seen in Table 12 which concludes that the Risk Management variable has a regression coefficient of 0.580 with a t value of $7.660 > t \text{ table } 1.984$ and a significance level of $0.000 < 0.05$. This shows that Risk Management has a significant effect on the Sustainability Performance of MSMEs in Mataram City by 58%. Thus, it can be concluded that the implementation of good Risk Management contributes significantly to improving the Sustainability Performance of MSMEs, which means that effective risk management can support the long-term continuity and success of MSMEs. This finding is in accordance with Waweru (2024), It was stated that Enterprise Risk Management positively and significantly influences the sustainable business performance of tapis industry MSMEs in Bandar Lampung, particularly in the areas of internal environment, information and communication, and monitoring.

Impact of Fintech and Risk Management on MSME Sustainability Performance

Based on the results of the statistical test of the impact of Fintech and risk management on the Sustainability Performance of MSMEs, it can be seen in Table 11 which concludes that Fintech and Risk Management simultaneously have a positive and significant influence on the Sustainability Performance of MSMEs in Mataram City, indicated by a significance value of $0.000 < 0.05$ and a calculated F value of $137.135 > F \text{ table } 3.09$. This is evidenced in Table 10 that the result of the R Square value of 0.739 means that the effect of Fintech and Risk Management simultaneously on MSME Sustainability Performance is 73.9% which indicates that the model as a whole has a significant relationship with the MSME Sustainability Performance variable. Thus, the integration of financial technology and risk management together can contribute significantly to improving the sustainability of MSMEs in Mataram City. The research conducted by Purnamasari (2024) shows that Fintech has a positive influence on the sustainability performance of SMEs by providing efficient and economical financial services. Fintech assists MSMEs in improving cost efficiency, accelerating cash cycles, and supporting sustainable business practices. Jaya (2024) also found that good risk management in MSMEs in the retail sector can increase business resilience to economic uncertainty, which directly contributes to business sustainability.

CONCLUSION

Based on the research results, it is concluded that Fintech has a significant effect in supporting the Sustainability Performance of MSMEs in Mataram City by increasing operational efficiency and access to financial services. This effect becomes more optimal when supported by adequate financial literacy. Meanwhile, Risk Management has a significant influence on the sustainability performance of MSMEs, which shows that good risk management, such as financial and operational risk mitigation, is proven to strengthen competitiveness and business sustainability. Simultaneously, Fintech and Risk Management have a significant influence on MSME Sustainability Performance, which confirms that the integration of Fintech and Risk Management creates a strong synergy for MSME sustainability in the face of business dynamics. The implications of these findings underscore the importance of collaboration between government, businesses, and financial institutions to provide digital financial literacy training, risk management guidance, and easy access to technology for MSMEs. Business actors are advised to manage risks and utilize financial technology optimally so that MSMEs can improve service quality, expand market share, and maintain long-term sustainability amid various business challenges. Further research can expand the coverage area or explore other factors, such as product innovation and environmental sustainability, to provide more comprehensive insights in supporting MSMEs.

Nevertheless, this study has certain limitations. Firstly, it focuses solely on MSMEs in Mataram City, which may limit the generalizability of the findings to other regions with distinct economic characteristics and fintech ecosystems. Secondly, this study focuses more on the fintech and risk management aspects without considering other factors that may influence MSME sustainability, such as product innovation, environmental sustainability, and government regulations. For this reason, future studies are encouraged to broaden the scope and investigate additional factors to gain more comprehensive insights into supporting MSME sustainability.

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