

Impact of Financial Technology Utilization, Working Capital Management, and Financial Resilience on MSME Sustainability During Uncertainty Economy

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ABSTRACT

Based on the results and discussion, this study concludes that financial technology utilization, working capital management, and financial resilience each have a positive and significant impact on the sustainability of MSMEs during periods of economic uncertainty. The findings highlight that MSMEs that actively adopt digital financial tools, manage their short-term finances efficiently, and develop strong financial resilience are better equipped to withstand and adapt to external shocks such as economic downturns, inflation, and market disruptions. Among the three factors, financial resilience emerged as the most influential, underscoring the critical role of strategic preparedness, adaptability, and financial buffers in ensuring business continuity. These results reinforce the theoretical perspective of the Resource-Based View (RBV), which emphasizes the importance of internal capabilities as sources of sustainable advantage. Therefore, strengthening digital adoption, financial management practices, and resilience-building efforts should be prioritized by MSME stakeholders, including policymakers, financial institutions, and business support organizations to enhance long-term survival and performance in an increasingly volatile economic environment.

Keywords:
MSME Sustainability;
Financial
Technology; Working
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INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) are the backbone of economic development in both developing and developed countries. They contribute significantly to job creation, income distribution, and poverty alleviation. In Indonesia, MSMEs represent over 99% of total business units and contribute approximately 60% to the national Gross Domestic Product (GDP) (Kementerian Koperasi dan UKM, 2022). However, their sustainability is often fragile, especially when faced with economic uncertainties such as inflation, currency volatility, global supply chain disruptions, and geopolitical tensions. These unpredictable macroeconomic conditions significantly challenge the survival and competitiveness of MSMEs.

In times of economic turbulence, financial technology (FinTech) emerges as a vital tool for enhancing financial inclusion and operational efficiency for MSMEs. The digital transformation of financial services allows MSMEs to access credit, manage transactions, and conduct digital payments more efficiently, reducing dependency on traditional banking systems (Zavolokina et al., 2016; Gomber et al., 2018). FinTech adoption enables businesses to continue operations despite physical restrictions, such as those experienced during the COVID-19 pandemic, by supporting e-commerce platforms, mobile banking, peer-to-peer lending, and digital wallets. Nevertheless, not

all MSMEs are equally prepared or equipped to adopt these technologies, often due to a lack of digital literacy, infrastructure, and trust (Lukonga, 2020).

Alongside technological advancement, the ability of MSMEs to manage their working capital plays a central role in ensuring business continuity during economic shocks. Effective working capital management ensures a business can meet its short-term obligations and invest in necessary inventories and receivables, which is crucial when sales decline or delays in payment occur (Deloof, 2003). Poor working capital practices can lead to liquidity constraints, which can trigger operational disruptions and even bankruptcy, particularly for MSMEs operating with limited access to external financing (Padachi, 2006). Thus, maintaining an optimal balance between receivables, payables, and inventories is crucial for the financial sustainability of MSMEs.

Equally important is the concept of financial resilience, which refers to the capacity of businesses to withstand, adapt, and recover from financial shocks. Financially resilient MSMEs are better positioned to manage crises by leveraging savings, diversifying income streams, accessing emergency funding, and quickly adjusting to changing market conditions (OECD, 2021). Resilience is also linked to the business owner's financial behavior, strategic planning, and risk management capability. In times of uncertainty, the presence of financial buffers and contingency strategies greatly determines whether a business can survive, thrive, or fail (Bhamra et al., 2011).

Given the ongoing global economic uncertainties, from post-pandemic recovery to inflationary pressures and disruptions in global trade, there is an urgent need to investigate how the integration of FinTech, sound working capital management, and financial resilience affects the sustainability of MSMEs. While each factor has been explored independently in existing literature, a comprehensive examination that integrates all three dimensions in the context of uncertainty is still limited. This study seeks to fill this gap by examining the interplay between these factors and their collective impact on MSME sustainability in uncertain economic conditions, particularly in emerging economies such as Indonesia.

Despite the acknowledged importance of FinTech utilization, working capital management, and financial resilience, many MSMEs still struggle to remain sustainable during times of economic uncertainty. Most existing research tends to focus on these factors in isolation, without assessing their combined influence on business continuity. Moreover, MSMEs often face significant challenges in accessing and effectively using digital financial services, optimizing cash flow, and building resilient financial strategies. The lack of integrated empirical evidence on how these dimensions interact and influence MSME sustainability, especially in developing economies during economic disruptions, represents a critical knowledge gap. Hence, this study seeks to answer the following research question: How do financial technology utilization, working capital management, and financial resilience collectively influence the sustainability of MSMEs during times of economic uncertainty?

Literature Review and Hypothesis Development

1. Financial Technology (FinTech) Utilization and MSME Sustainability

Financial technology (FinTech) refers to the application of technological innovation in the provision and delivery of financial services (Gomber et al., 2018). FinTech includes services such as mobile payments, peer-to-peer lending,

crowdfunding, blockchain technology, and digital banking platforms. For MSMEs, FinTech offers the potential to bypass traditional banking barriers, improve access to finance, and enhance operational efficiency. According to Arner et al. (2016), FinTech enables businesses to process transactions more quickly, gain real-time financial data, and reduce transaction costs, all of which are essential for survival and growth, especially in volatile environments.

In developing economies, FinTech adoption among MSMEs has shown significant promise in addressing financial exclusion and liquidity shortages. For instance, digital credit platforms and e-wallets have empowered micro-enterprises to obtain working capital without the stringent collateral requirements of conventional banks (Beck et al., 2018). Moreover, FinTech platforms facilitate data-driven decision-making, enabling business owners to monitor cash flows and customer transactions in real-time, enhancing adaptability during economic shocks (Lukonga, 2020). However, the effectiveness of FinTech depends on digital literacy, infrastructure, and trust. Studies have shown that while FinTech adoption correlates with enhanced MSME resilience, its impact is not uniform across contexts (Tang et al., 2022). Therefore, FinTech can be considered a strategic enabler of MSME sustainability during uncertainty, provided it is supported by appropriate digital readiness and ecosystem integration. H1: Financial technology utilization has a positive and significant effect on MSME sustainability during economic uncertainty.

2. Working Capital Management and MSME Sustainability

Working capital management (WCM) involves the administration of a firm's short-term assets and liabilities, such as cash, accounts receivable, inventory, and accounts payable (Deloof, 2003). Efficient WCM ensures that MSMEs maintain sufficient liquidity to meet short-term obligations and fund operational needs without excessive reliance on external finance. This is especially important during times of economic instability, when cash inflows may be disrupted due to declining sales, delayed payments, or increased input costs. Empirical research has established a strong relationship between effective WCM and business performance. Padachi (2006) found that small firms with optimized inventory and receivables turnover tend to report higher profitability and lower insolvency risk. Similarly, García-Teruel and Martínez-Solano (2007) highlighted that firms with good WCM practices can more effectively manage business cycles and withstand external shocks. In uncertain economic conditions, poor WCM can rapidly lead to a liquidity crisis, forcing MSMEs to delay payments, miss business opportunities, or downsize operations. On the other hand, MSMEs that proactively manage working capital, by shortening receivables collection periods, managing inventories efficiently, and negotiating favorable payment terms, are more likely to sustain operations and maintain stakeholder confidence (Enqvist et al., 2014). Thus, WCM is a key determinant of MSME resilience and sustainability. H2: Working capital management has a positive and significant effect on MSME sustainability during economic uncertainty.

3. Financial Resilience and MSME Sustainability

Financial resilience refers to the ability of individuals or organizations to withstand and recover from financial shocks (OECD, 2021). For MSMEs, this involves the capacity to absorb economic pressures, manage financial stress, and rapidly adapt to changing environments. Financial resilience is often shaped by internal factors such as cash reserves, access to credit, income diversification, and risk management

strategies (Bhamra et al., 2011). Research in the field of crisis management and entrepreneurship underscores the importance of resilience in sustaining businesses. Herbane (2010) emphasized that firms with high financial resilience are more agile in crisis response and tend to suffer less severe performance declines during downturns. Additionally, financial resilience enables MSMEs to invest in innovation and maintain employment levels, even when demand drops. A study by Williams and Vorley (2015) demonstrated that resilient small businesses in the UK were more likely to survive the 2008 global financial crisis due to their ability to reconfigure resources, cut non-essential expenses, and access emergency funding. In the context of developing economies, financial resilience is even more critical, as MSMEs often operate in environments with limited state support or safety nets (Fatoki, 2018). H3: Financial resilience has a positive and significant effect on MSME sustainability during economic uncertainty.

4. Theoretical Framework

This study is grounded in Resource-Based View (RBV) Theory, which posits that firms achieve competitive advantage and sustainability by leveraging internal resources and capabilities (Barney, 1991). FinTech adoption, effective working capital management, and financial resilience can all be conceptualized as strategic resources that enhance a firm's ability to survive and thrive under economic uncertainty. From an RBV perspective, FinTech utilization represents a dynamic capability that allows firms to reconfigure financial processes for efficiency and adaptability. Working capital management serves as a key operational resource ensuring liquidity, while financial resilience acts as a buffer or absorptive capacity enabling firms to manage shocks. When strategically combined, these resources contribute to sustainable performance and long-term viability.

METHOD

1. Research Design

This study adopts a quantitative research design using a cross-sectional survey method. The purpose is to empirically examine the effect of financial technology utilization, working capital management, and financial resilience on the sustainability of MSMEs during periods of economic uncertainty. The research uses a descriptive and explanatory approach, aiming to describe the characteristics of the variables and test the hypothesized relationships between them.

2. Population and Sample

The population in this study comprises MSMEs operating in Indonesia, particularly those affected by recent economic disruptions such as the COVID-19 pandemic, rising inflation, and currency volatility. A purposive sampling technique was employed to select MSMEs that meet the following criteria:

- a. Actively operating for at least the past 3 years;
- b. Have experienced economic disruptions (e.g., during the pandemic or inflationary periods);
- c. Utilize some form of digital financial service (e.g., digital payment, online banking, P2P lending).

A total of 350 MSME owners or financial managers were selected as respondents. The sample size was determined based on minimum sample size

requirements for multiple regression analysis (Hair et al., 2019), ensuring sufficient statistical power.

3. Data Collection Method

Primary data were collected using a structured questionnaire distributed both online (via Google Forms and email) and offline (direct interviews or distribution in MSME centers). The questionnaire consisted of closed-ended questions using a five-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree) to measure the perception of respondents regarding the four constructs. To ensure content validity, the questionnaire was adapted from prior validated instruments. Financial Technology Utilization adapted from Gomber et al. (2018) and Tang et al. (2022), covering digital payment usage, online financing, and digital financial management tools. Working Capital Management adapted from Deloof (2003) and Padachi (2006), focusing on inventory management, receivables, payables, and cash flow practices. Financial Resilience adapted from OECD (2021) and Fatoki (2018), measuring financial buffer, crisis preparedness, and adaptability. MSME Sustainability adapted from Williams & Vorley (2015) and OECD (2021), assessing continuity, revenue stability, and employee retention during economic uncertainty. A pilot test was conducted with 30 MSME owners to evaluate the clarity, reliability, and relevance of the questionnaire. Necessary revisions were made before full distribution.

4. Data Analysis

The data collected from respondents were analyzed using Statistical Package for the Social Sciences (SPSS) version 26. The first stage involved descriptive analysis to summarize demographic profiles and overall trends in the responses related to each variable. Next, validity and reliability tests were performed to ensure the quality of the measurement instruments. Validity was assessed using Pearson's correlation, where items with a correlation coefficient above 0.3 were considered valid. Reliability was examined using Cronbach's Alpha, with values of 0.7 or higher indicating acceptable internal consistency. Additionally, classical assumption tests were conducted to ensure the robustness of the regression model, including normality tests (Kolmogorov-Smirnov), multicollinearity tests (Tolerance and Variance Inflation Factor), and heteroscedasticity tests (Glejser test).

Following the preliminary assessments, multiple linear regression analysis was used to test the effect of the three independent variables on the dependent variable, MSME sustainability during economic uncertainty. The regression equation was constructed to determine the magnitude and direction of each predictor's influence. The t-test was used to evaluate the individual significance of each variable, while the F-test assessed the overall fit of the regression model. The level of statistical significance was set at $\alpha = 0.05$, and all hypotheses were tested against this threshold to draw conclusions on their acceptance or rejection.

RESULTS AND DISCUSSION

1. Descriptive Statistics

The descriptive analysis shows the mean, minimum, maximum, and standard deviation for each research variable.

Table 1. Descriptive Statistic Result

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Financial Technology Utilization	350	2.00	5.00	3.841	0.643
Working Capital Management	350	2.00	5.00	3.776	0.594
Financial Resilience	350	2.00	5.00	3.891	0.572
MSME Sustainability	350	2.00	5.00	3.812	0.603

Source: Data Processed

2. Validity and Reliability Test

To test the construct validity of the questionnaire items, a Pearson Product Moment Correlation analysis was conducted between each item and its total score within the respective variable. The validity test aims to determine whether each item on the instrument accurately measures the intended construct. An item is considered valid if the correlation coefficient (r-value) exceeds 0.300 and is statistically significant ($p < 0.05$) (Sugiyono, 2019).

The results showed that all items across the four variables had r-values greater than 0.300, with p-values less than 0.05. This indicates a strong and significant correlation between individual items and the overall score of their respective constructs. For example, the items measuring Financial Technology Utilization had r-values ranging from 0.512 to 0.732, while items measuring Financial Resilience showed r-values between 0.471 and 0.698. These results confirm that each item contributes meaningfully to the overall construct it represents.

Table 2. Cronbach's Alpha

Variable	Cronbach's Alpha
Financial Technology Utilization	0.812
Working Capital Management	0.798
Financial Resilience	0.821
MSME Sustainability	0.836

Source: Data Processed

All Cronbach's Alpha values > 0.700 , indicating high internal consistency and reliability.

3. Classical Assumption Tests

a) Normality Test (Kolmogorov-Smirnov)

Table 3. Result of Normality Test

Variable	Asymp. Sig. (2-tailed)
Unstandardized Residual	0.200 (NS)

Source: Data Processed

The p-value > 0.05 indicates that the residuals are normally distributed.

b) Multicollinearity Test

Table 4. Multicollinearity Test

Variable	Tolerance	VIF
Financial Technology Utilization	0.624	1.603
Working Capital Management	0.681	1.468
Financial Resilience	0.595	1.681

Source: Data Processed

All VIF values < 10 and Tolerance > 0.10, indicating no multicollinearity.

c) Heteroscedasticity Test (Glejser)

Table 5. Glejser Test

Variable	Sig. (p-value)
Financial Technology Utilization	0.237
Working Capital Management	0.198
Financial Resilience	0.144

Source: Data Processed

All p-values > 0.05 indicate no heteroscedasticity problem.

4. Multiple Linear Regression Analysis

Table 6. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.713	0.509	0.504	0.422

Source: Data Processed

The model explains 50.9% of the variance in MSME sustainability ($R^2 = 0.509$).

Table 7. ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	44.361	3	14.787	82.896	0.000
Residual	42.762	346	0.124		
Total	87.123	349			

Source: Data Processed

The regression model is significant ($p < 0.001$), indicating good overall model fit.

Table 8. Coefficients

Variable	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig.
(Constant)	1.092	0.182	–	5.998	0.000
Financial Technology Utilization	0.261	0.059	0.278	4.424	0.000
Working Capital Management	0.214	0.066	0.204	3.243	0.001
Financial Resilience	0.331	0.062	0.344	5.349	0.000

Source: Data Processed

Based on the results presented in Table 8 (Coefficients), all three independent variables have a positive and significant effect on MSME Sustainability during economic uncertainty. The regression coefficient (B) for Financial Technology Utilization is 0.261 with a t-value of 4.424 and a p-value of 0.000, indicating a statistically significant positive relationship. This means that for every one-unit

increase in FinTech utilization, MSME sustainability increases by 0.261 units, assuming other variables are constant. Similarly, Working Capital Management has a regression coefficient of 0.214, with a t-value of 3.243 and a p-value of 0.001, suggesting that better working capital practices significantly enhance business sustainability. Lastly, Financial Resilience has the strongest influence among the three, with a coefficient of 0.331, a t-value of 5.349, and a p-value of 0.000, indicating that the ability of MSMEs to withstand financial shocks plays the most critical role in ensuring their sustainability. The positive coefficients for all variables and their statistical significance ($p < 0.05$) confirm the acceptance of all three research hypotheses.

Discussion

1. Financial Technology Utilization and MSME Sustainability

The study reveals that financial technology utilization significantly influences MSME sustainability, with a standardized coefficient ($\beta = 0.278$, $p < 0.001$). This finding confirms that the use of digital financial services such as mobile payments, online banking, peer-to-peer lending, and digital bookkeeping contributes positively to the operational continuity and resilience of MSMEs during uncertain economic conditions. This result is consistent with previous research by Gomber et al. (2018) and Tang et al. (2022), which found that FinTech adoption enhances financial access, reduces transaction costs, and supports better cash flow visibility. In times of economic downturn, such as the COVID-19 pandemic or inflationary shocks, digital payment systems and financing platforms have enabled MSMEs to remain operational even when traditional channels were disrupted.

FinTech tools also provide MSMEs with the ability to make faster decisions based on real-time data and to diversify their customer base through digital marketplaces. However, the level of FinTech impact can vary depending on the digital literacy of MSME owners, infrastructure availability, and trust in online systems. This implies that while FinTech presents significant opportunities, its benefits are maximized only when accompanied by adequate training and ecosystem support. The finding supports the view that FinTech serves not merely as a convenience but as a strategic enabler of sustainability. As economic uncertainties continue, MSMEs that embrace and integrate financial technologies are more likely to adapt quickly, manage resources effectively, and sustain competitive advantage.

2. Working Capital Management and MSME Sustainability

The regression analysis also shows that working capital management has a significant effect on MSME sustainability ($\beta = 0.204$, $p = 0.001$). This finding indicates that MSMEs with better practices in managing receivables, payables, inventory, and cash are more likely to withstand economic challenges and continue operating effectively. This result aligns with earlier studies by Deloof (2003), Padachi (2006), and García-Teruel and Martínez-Solano (2007), which emphasized the critical role of working capital in maintaining liquidity and avoiding operational disruptions. Effective working capital management allows MSMEs to ensure timely payments to suppliers, avoid overstocking or understocking inventory, and maintain sufficient cash for daily operations, all of which are vital during times of uncertain sales and cash flow.

In practice, MSMEs that fail to manage their short-term obligations risk falling into liquidity crises, even if they remain profitable on paper. For instance, delayed collection of receivables or poor inventory turnover can lead to cash shortages that

hinder the ability to pay wages or purchase raw materials, ultimately threatening business continuity. This study's findings suggest that practical financial management skills and tools are critical for MSME sustainability. Business owners should be trained in basic financial planning and forecasting techniques, while access to software tools for budgeting and inventory management can enhance their ability to manage short-term assets and liabilities effectively.

3. Financial Resilience and MSME Sustainability

Among the three variables, financial resilience showed the strongest influence on MSME sustainability, with a standardized coefficient of $\beta = 0.344$ ($p < 0.001$). This finding underscores the pivotal role of resilience in navigating and adapting to uncertain and adverse economic conditions. Financial resilience, in this study, includes elements such as the ability to maintain emergency savings, access to alternative income sources, financial risk management, and business continuity planning. MSMEs that possess these capabilities are more flexible and can absorb shocks without major disruptions to operations.

This is consistent with the works of OECD (2021), Fatoki (2018), and Williams and Vorley (2015), who argue that resilient businesses are more likely to survive crises, retain employment, and even seize new market opportunities during downturns. Resilient MSMEs typically exhibit proactive behaviors such as cost-cutting, digital transformation, revenue diversification, and building relationships with key stakeholders. From a strategic standpoint, financial resilience can be seen as an intangible asset, one that is often shaped by the mindset, experience, and leadership of the business owner. In developing economies like Indonesia, where MSMEs may lack access to formal financial safety nets, fostering resilience at the enterprise level is especially crucial.

4. Integrated Implications and Theoretical Reflection

When viewed collectively, the findings suggest that MSME sustainability during economic uncertainty is multi-dimensional and best supported through the integration of technological, financial, and behavioral strategies. Each of the three variables complements the others. For instance, FinTech tools can improve WCM through automated invoicing and digital tracking, while strong working capital positions can enhance financial resilience by ensuring liquidity buffers are maintained. The findings support the Resource-Based View (RBV), which emphasizes that firms must develop valuable, rare, inimitable, and non-substitutable (VRIN) resources to gain sustainable competitive advantage (Barney, 1991). In this study, the ability to adopt FinTech, manage working capital effectively, and build resilience all qualify as strategic capabilities that contribute to sustainability in uncertain environments.

5. Policy and Managerial Implications

For policymakers, the results underscore the importance of promoting digital financial infrastructure and expanding access to financial technologies for MSMEs. This includes improving internet access, simplifying regulatory barriers for FinTech providers, and offering incentives for digital adoption. For MSME support agencies and financial institutions, the results suggest that capacity-building programs in working capital management and resilience planning are essential. Offering workshops, mentoring, and digital tools tailored to MSME needs can significantly improve their financial preparedness. For MSME owners and managers, the study provides a clear message: embracing digital financial tools, practicing disciplined cash flow

management, and preparing for financial shocks are not optional but essential strategies for long-term survival and growth.

CONCLUSION

Based on the results and discussion, this study concludes that financial technology utilization, working capital management, and financial resilience each have a positive and significant impact on the sustainability of MSMEs during periods of economic uncertainty. The findings highlight that MSMEs that actively adopt digital financial tools, manage their short-term finances efficiently, and develop strong financial resilience are better equipped to withstand and adapt to external shocks such as economic downturns, inflation, and market disruptions. Among the three factors, financial resilience emerged as the most influential, underscoring the critical role of strategic preparedness, adaptability, and financial buffers in ensuring business continuity. These results reinforce the theoretical perspective of the Resource-Based View (RBV), which emphasizes the importance of internal capabilities as sources of sustainable advantage. Therefore, strengthening digital adoption, financial management practices, and resilience-building efforts should be prioritized by MSME stakeholders, including policymakers, financial institutions, and business support organizations to enhance long-term survival and performance in an increasingly volatile economic environment..

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