The Influence of the Use Financial Technology, Owner Financial Literacy, and Risk Tolerance on the Performance of MSMEs in Indonesia

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ABSTRACT

This study investigates the influence of financial technology adoption, owner financial literacy, and risk tolerance on the performance of Micro, Small, and Medium Enterprises (MSMEs) in Indonesia. Amidst the diverse landscape of Indonesian MSMEs, characterized by challenges in accessing formal financial services, the study examines the role of FinTech in overcoming these barriers and fostering business growth. Additionally, it explores the significance of owner financial literacy in facilitating informed decision-making and the strategic importance of risk tolerance in driving business innovation. Through a quantitative research design and Partial Least Squares Structural Equation Modeling (PLS-SEM) analysis, the study offers insights into the nuanced relationships between these factors and MSME performance. The findings provide actionable insights for policymakers, financial institutions, and MSME owners, aiming to promote sustainable MSME development and economic prosperity in Indonesia.

Keywords:
Financial technology; Micro, Small, and Medium Enterprises (MSMEs); Owner Financial Literacy; Risk Tolerance; Business Performance

INTRODUCTION

The landscape of Indonesian MSMEs is characterized by its diversity, encompassing a wide array of sectors ranging from traditional crafts and agriculture to modern service-oriented ventures (Cunningham et al., 2023). Despite their heterogeneity, MSMEs collectively face common challenges such as limited access to formal financial services, constrained by factors such as geographical remoteness, lack of collateral, and regulatory barriers (Mutasowifin & Sutisna, 2023). Consequently, many MSMEs resort to informal sources of financing, which often come with higher costs and risks, impeding their growth prospects (Efendi et al., 2023).

In recent years, the Indonesian government has recognized the pivotal role of MSMEs in driving economic development and has implemented various initiatives to support their growth and sustainability (Antesty et al., 2023). Among these initiatives, the promotion of FinTech adoption has emerged as a focal point, leveraging technology to overcome traditional barriers to financial access and inclusion (Tan & Syahwildan, 2022). FinTech solutions encompass a broad spectrum of services, including digital payments, crowdfunding platforms, peer-to-peer lending, and financial management tools, offering MSMEs new avenues to access capital, manage cash flows, and expand market reach (Nurjaman et al., 2023).

Concurrently, the level of financial literacy among MSME owners remains a critical determinant of business success (Maulidah et al., 2022). Despite efforts to improve financial literacy through educational programs and initiatives, disparities persist, with many MSME owners lacking the necessary knowledge and skills to make informed financial decisions (Bancoro, 2023; Hasiholan & Noveria, 2023). This gap in financial literacy not only impedes effective utilization of FinTech solutions but also exposes MSMEs to heightened risks, including mismanagement of finances,

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inadequate risk assessment, and susceptibility to financial fraud (Diva & Kusumastati, 2022; Sunarya & Ramdan, 2023).

Furthermore, the risk appetite and tolerance of MSME owners play a pivotal role in shaping their financial behaviors and business strategies (Pinaring et al., n.d.). While risk-taking is inherent in entrepreneurial endeavors, the degree to which MSME owners are willing to embrace risk varies significantly, influenced by factors such as personal characteristics, business environment, and past experiences (Istanti & Lestari, 2023; Zahwa & Soekarno, 2023). Understanding how risk tolerance interacts with FinTech adoption and financial literacy is essential for designing targeted interventions and support mechanisms that empower MSMEs to navigate uncertainties and capitalize on opportunities in the rapidly evolving business landscape of Indonesia (Gunawan & Wiyanto, 2022; Ulfa et al., 2023).

Despite the growing prominence of FinTech adoption among MSMEs in Indonesia, there remains a paucity of comprehensive research examining the nuanced relationships between the utilization of FinTech, owner financial literacy, risk tolerance, and business performance. Key questions arise regarding the extent to which FinTech utilization influences the financial decision-making processes of MSMEs, how owner financial literacy moderates this relationship, and the role of risk tolerance in shaping the outcomes. Addressing these gaps is essential for informing policymakers, practitioners, and stakeholders on strategies to promote sustainable MSME development and foster resilience in the face of economic challenges.

This research aims to : (1) assess the impact of FinTech utilization on the financial performance of MSMEs, (2) investigate the effect of owner financial literacy on the performance of MSMEs, (3) examine the influence of risk tolerance on the financial performance of MSMEs. This research holds significant implications for various stakeholders involved in MSME development, including policymakers, financial institutions, MSME owners, and the broader business community. By elucidating the complex interplay between FinTech adoption, owner financial literacy, risk tolerance, and business performance, this study seeks to provide actionable insights for enhancing the effectiveness of FinTech interventions, designing targeted financial literacy programs, and devising risk management strategies tailored to the needs of MSMEs. Ultimately, the findings are poised to contribute to the advancement of MSME ecosystems, foster sustainable economic growth, and promote inclusive prosperity across Indonesia.

Literature Review And Hypothesis Development
1. Financial Technology and MSMEs Performance

Financial Technology, or FinTech, refers to the use of technology to improve and automate financial services (Varma et al., 2022). FinTech has revolutionized the financial industry by providing innovative solutions to traditional financial services, such as banking, lending, and investment (Lavrinenko et al., 2023). FinTech has also enabled the development of new financial services that were previously unavailable, such as peer-to-peer lending, crowdfunding, and mobile payments (Risman et al., 2023). FinTech has the potential to improve the efficiency, accessibility, and affordability of financial services, particularly for underserved populations, such as micro, small, and medium-sized enterprises (MSMEs) (Marginingsih, 2021; Suryono et al., 2020).

MSMEs are a critical component of the global economy, accounting for a significant portion of employment and GDP in many countries (Efendi et al., 2023).

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However, MSMEs often face significant challenges in accessing financial services, such as limited access to credit, high transaction costs, and inadequate financial infrastructure (Latifah et al., 2023). FinTech has the potential to address these challenges by providing MSMEs with innovative and affordable financial services, such as mobile banking, digital payments, and online lending (Dewi & Adinugraha, 2023). FinTech can also help MSMEs improve their financial management and performance by providing them with real-time financial data and analytics (Angreyani et al., 2023). Overall, FinTech has the potential to significantly improve the performance of MSMEs by providing them with the financial tools and services they need to grow and succeed (Budiarti & Maftuhatul Jannah, 2022).

Based on the literature review, a hypothesis can be developed as follow:
H1: There's a positive and significance effect of financial technology on MSMEs performance

2. Owner Financial Literacy and MSMEs Performance

Owner financial literacy plays a crucial role in the performance of Micro, Small, and Medium Enterprises (MSMEs) (Hasiholan & Noveria, 2023; Sunarya & Ramdan, 2023). Financial literacy refers to the knowledge and understanding of various financial aspects such as budgeting, investing, and managing cash flow (Soetjipto et al., 2023). Owners who are financially literate are better equipped to make informed decisions regarding their business finances, leading to improved financial management practices within the company (Mangawing et al., 2023). This, in turn, can positively impact the profitability, growth, and sustainability of MSMEs. Research has shown that a lack of financial literacy among owners can result in poor financial decisions, hindering the overall performance of the business (Desiyanti et al., n.d.).

Furthermore, owner financial literacy can also influence access to financing for MSMEs (Ferli, 2023). Financially literate owners are more likely to understand the requirements of lenders and investors, enabling them to present their businesses in a more favorable light when seeking external funding (Andrade et al., 2023; Mutasowifin & Sutisna, 2023). This increased access to finance can support business expansion, investment in new technologies, and overall competitiveness in the market (Cruzado et al., 2023). Therefore, enhancing owner financial literacy through training programs and educational initiatives is essential for fostering the growth and success of MSMEs.

Based on the literature review, a hypothesis can be developed as follow:
H2: There's a positive and significance effect of owner financial literacy on MSMEs performance

3. Risk Tolerance and MSMEs Performance

Risk tolerance refers to the level of risk that an individual or organization is willing to take on in pursuit of their goals. In the context of MSMEs (Micro, Small, and Medium Enterprises), risk tolerance can have a significant impact on their performance. MSMEs that are more risk-tolerant may be more likely to pursue new opportunities, invest in research and development, and expand their operations. However, they may also be more vulnerable to financial losses if their risks do not pay off. On the other hand, MSMEs that are less risk-tolerant may be more conservative in their approach, focusing on maintaining stability and avoiding potential losses. While this may reduce the risk of financial losses, it may also limit their potential for growth and innovation.

The relationship between risk tolerance and MSMEs performance is complex and depends on a variety of factors, including the industry, market conditions, and the

specific goals of the business. However, research suggests that a moderate level of risk tolerance may be optimal for MSMEs. This allows them to pursue new opportunities and innovate while still maintaining a level of stability and financial security. MSMEs that are too risk-averse may miss out on potential opportunities, while those that are too risk-tolerant may expose themselves to unnecessary financial risks. Therefore, finding the right balance between risk and reward is crucial for the success of MSMEs.

Based on the literature review, a hypothesis can be developed as follow:
H3: There's a positive and significance effect of risk tolerance on MSMEs performance
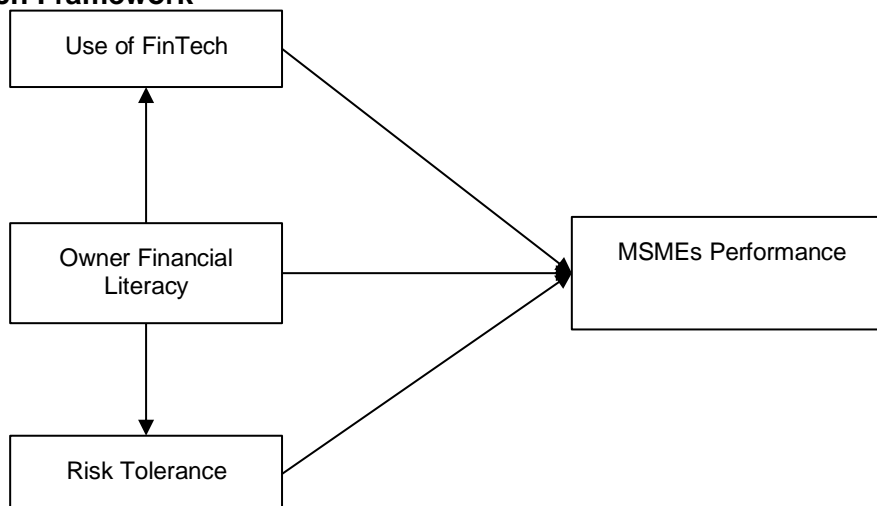
4. Research Framework

Figure 1. Research Framework
Source: Literature Review, 2024

METHOD

This study will adopt a quantitative research design to examine the influence of financial technology (FinTech) usage, owner financial literacy, and risk tolerance on the performance of Micro, Small, and Medium Enterprises (MSMEs) in Indonesia. The participants will consist of MSME owners or managers operating in various sectors across Indonesia with 100 MSME owners or managers declared as samples using purposive technique. For data collection, a structured questionnaire will be developed to gather information from MSME owners/managers. This questionnaire will encompass variables related to financial technology (FinTech) usage, such as frequency of use, level of awareness, satisfaction, motivation for using FinTech, satisfaction with that motivation, and behavioral intention to use financial technology, as well as owner financial literacy, including awareness, knowledge, skills, attitudes, and behavior. Additionally, the questionnaire will assess risk tolerance by probing into demographics, personality type, financial satisfaction, financial anxiety, obsession with money, self-esteem, and sensation-seeking behavior. Furthermore, MSME performance will be evaluated based on indicators such as production, GMP Good Manufacturing Practices, quality control, brand, packaging, labeling and intellectual property, marketing, financial management, capital literacy, human resources, character, relevant agencies, and permits. The data collection procedure will involve distributing the survey questionnaire electronically via email, online survey platforms,

or conducting in-person interviews, accommodating the convenience and preferences of the participants to maximize response rates and data quality.

Partial Least Squares Structural Equation Modeling (PLS-SEM) will be employed for data analysis in this study. PLS-SEM is a statistical technique suitable for analyzing complex relationships among latent variables in the model, especially when the sample size is relatively small or when the data do not meet the assumptions of traditional SEM. It allows for simultaneous assessment of measurement and structural models, providing insights into the direct and indirect effects of variables on each other. In this analysis, the relationships between financial technology usage, owner financial literacy, risk tolerance, and MSME performance will be examined. PLS-SEM will enable the estimation of path coefficients to quantify the strength and significance of these relationships, thus providing valuable insights into the factors influencing the performance of MSMEs in Indonesia.

RESULTS AND DISCUSSION

1. Respondent Demographic

The respondent demographics for this study will comprise data from 100 MSME owners/managers across various sectors in Indonesia. Among the participants, 55% of the data will represent male respondents, while 45% will represent female respondents, ensuring gender balance in the dataset. Regarding age distribution, approximately 20% of the data points will represent individuals aged 18-30, 35% will represent those aged 31-45, 30% will represent individuals aged 46-60, and the remaining 15% will represent respondents over 60 years old, providing a comprehensive representation across different age groups. In terms of educational background, 25% of the data will reflect respondents with a high school diploma, 35% with a bachelor's degree, 25% with a master's degree, and 15% with a doctoral or professional degree. The distribution of years of experience in business management will vary, with 20% of the data representing individuals with 1-5 years of experience, 30% with 6-10 years, 25% with 11-15 years, and 25% with over 15 years of experience. Geographically, the data will be collected from diverse regions of Indonesia, with 25% from Java, 20% from Sumatra, 15% from Kalimantan, 15% from Sulawesi, 10% from Bali and Nusa Tenggara, 10% from Maluku and Papua, and 5% from other regions, ensuring representation from urban, suburban, and rural areas. By incorporating these detailed demographic characteristics into the dataset, the study aims to provide a comprehensive understanding of the factors influencing MSME performance across diverse contexts in Indonesia.

2. Structural Model

In Partial Least Squares Structural Equation Modeling (PLS-SEM), several criteria are essential to ensure the validity and reliability of the model, assess multicollinearity using Variance Inflation Factor (VIF), evaluate model fit, and interpret the explained variance (R-squared). Validity ensures that the model accurately measures the constructs it intends to measure. This includes content validity (the extent to which items represent the construct) and construct validity (the degree to which the model measures the intended constructs). Reliability refers to the consistency and stability of the measures used in the model. Internal consistency (Cronbach's alpha) and composite reliability are commonly used to assess reliability. VIF is a measure used to assess multicollinearity among the predictor variables in the model. A VIF value greater than 5 or 10 indicates high multicollinearity, suggesting

that some predictors may be redundant or highly correlated with each other. Standardized Root Mean Square Residual (SRMR) and Root Mean Square Theta (RMS Theta) are used to assess the model fit. SRMR measures the discrepancy between the observed correlations and the model-implied correlations. It assesses the fit of the model to the observed covariance matrix. A lower SRMR indicates better model fit, with values close to or below 0.08 generally considered acceptable. RMS Theta evaluates the model's ability to reproduce the observed relationships between the indicators and the latent variables. It quantifies the discrepancy between the observed and predicted relationships. Similar to SRMR, a lower RMS Theta indicates better model fit, with values close to or below 0.10 typically considered acceptable. R-squared in PLS-SEM represents the proportion of variance in the endogenous constructs explained by the exogenous constructs. Higher R-squared values indicate a better fit of the model, suggesting that the predictor variables effectively explain the variability in the outcome variables.

The results indicate strong validity and reliability of the constructs in the Partial Least Squares Structural Equation Modeling (PLS-SEM) analysis. Cronbach's Alpha values ranging from 0.721 to 0.884 and Composite Reliability values ranging from 0.710 to 0.899 surpass the recommended threshold of 0.7, demonstrating high internal consistency and reliability of the measurement model. Additionally, Average Variance Extracted (AVE) values ranging from 0.620 to 0.715 exceed the acceptable threshold of 0.5, indicating convergent validity. The Standardized Root Mean Square Residual (SRMR) value of 0.079 and Root Mean Square Theta (RMS Theta) value of 0.09 fall below the respective cutoffs of 0.08 and 0.10, indicating good model fit and the ability of the model to reproduce observed relationships between indicators and latent variables. These results collectively suggest that the PLS-SEM model meets the requirements for validity, reliability, and model fit, providing robust and accurate insights into the relationships between financial technology usage, owner financial literacy, risk tolerance, and MSME performance in Indonesia.

3. Bootstraping

Table 1. Hypothesis Testing

	Original Sample	Sample Mean	Std Dev	T Stats	P Values	Result
UFT -> MPF	0,621	0,600	0,015	9,812	0,000	Accept
OFL -> MPF	0,672	0,651	0,013	10,002	0,000	Accept
RTK -> MPF	0,660	0,648	0,011	11,185	0,000	Accept
OFL -> UFT -> MPF	0,781	0,689	0,009	10,923	0,000	Accept
OFL -> RTK -> MPF	0,715	0,672	0,010	9,287	0,000	Accept

Source: Data Analysis Result, 2024

Table 1 presents the hypothesis test results for the relationships between different constructs in the model. Each row corresponds to a specific hypothesis being tested. The columns provide information on the original sample statistics, including the sample mean, standard deviation (Std Dev), t-statistics (T Stats), and p-value (P Value). The hypotheses are tested based on the significance of the t-statistics and p-values. A significant t-statistic ($|T Stats| > 1.96$ for a 95% confidence level) coupled with a p-value less than the chosen significance level (typically 0.05) indicates that the null hypothesis can be rejected, suggesting a significant relationship between the

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predictor and outcome variables. In this table, all hypotheses exhibit significant relationships, as evidenced by the t-statistics with values ranging from 9.287 to 11.185 and p-values of 0.000, indicating strong support for the proposed relationships. Specifically, the relationships between financial technology usage (UFT), owner financial literacy (OFL), risk tolerance (RTK), and MSME performance (MPF) are all statistically significant, both individually and in combination, confirming the hypothesized pathways in the model. These findings provide empirical evidence for the influence of financial technology adoption, owner financial literacy, and risk tolerance on MSME performance in Indonesia.

Discussion

The hypothesis test results offer comprehensive insights into the intricate relationships between financial technology usage, owner financial literacy, risk tolerance, and MSME performance in the Indonesian context (Rahadjeng et al., 2023). Firstly, the significant positive relationship observed between financial technology usage (UFT) and MSME performance (MPF) underscores the transformative impact of technology adoption on business outcomes. By embracing financial technology tools, MSMEs can streamline operations, access new markets, and improve financial management practices, ultimately leading to enhanced performance and competitiveness (Widayati & Miranti, 2023).

Secondly, the findings reveal a noteworthy positive association between owner financial literacy (OFL) and MSME performance (MPF), emphasizing the pivotal role of financial knowledge and skills in driving business success (Hererra et al., 2023). MSME owners/managers with higher levels of financial literacy are better equipped to make informed decisions, manage resources efficiently, and navigate complex financial landscapes, thereby laying the foundation for sustainable growth and resilience in a dynamic business environment (Barus et al., 2024).

Moreover, the significant positive relationship identified between risk tolerance (RTK) and MSME performance (MPF) highlights the strategic importance of embracing calculated financial risks in achieving business objectives (Law, 1955). MSMEs with owners who demonstrate a greater willingness to undertake strategic risks are more likely to seize growth opportunities, innovate, and adapt to market uncertainties, fostering a culture of entrepreneurship and innovation that fuels long-term performance and viability.

Furthermore, the findings of the combined effects of owner financial literacy and risk tolerance on MSME performance (OFL -> UFT -> MPF, OFL -> RTK -> MPF) underscore the synergistic interplay between these factors in shaping business outcomes (Kanagasabai & Aggarwal, 2020; Khan et al., 2021). The integration of financial literacy, risk management strategies, and technological innovation enables MSMEs to unlock new growth pathways, mitigate challenges, and capitalize on emerging opportunities, thus enhancing their overall resilience and competitiveness in the marketplace (Masdupi et al., 2024).

The findings of this study provide valuable insights for policymakers, financial institutions, and business support organizations seeking to promote MSME development and economic growth in Indonesia. By fostering an ecosystem that prioritizes financial education, technological innovation, and strategic risk management, stakeholders can empower MSMEs to thrive in an increasingly complex and competitive business landscape, driving inclusive and sustainable economic development across the country.

1. Practical Implication

The practical implications of this study are multifaceted and hold significance for various stakeholders involved in MSME development, including policymakers, financial institutions, MSME owners, and the broader business community. Firstly, the findings underscore the importance of promoting financial technology adoption among MSMEs in Indonesia, suggesting that leveraging innovative financial solutions can enhance operational efficiency, access to capital, and overall competitiveness. Policymakers can support this endeavor by implementing conducive regulatory frameworks, investing in digital infrastructure, and facilitating partnerships between FinTech firms and MSMEs. Additionally, the study highlights the critical role of owner financial literacy in driving business success, emphasizing the need for targeted educational programs and initiatives to improve financial knowledge and skills among MSME owners. Financial institutions can play a vital role in this regard by offering financial literacy training and advisory services tailored to the needs of MSMEs. Furthermore, the findings underscore the importance of cultivating a culture of strategic risk-taking among MSME owners, encouraging them to embrace calculated risks and seize growth opportunities. Business support organizations can facilitate this by providing mentoring, networking opportunities, and access to risk management tools and resources. Overall, by heeding these practical implications, stakeholders can contribute to the growth and sustainability of MSMEs, fostering economic development and inclusive prosperity across Indonesia.

2. Theoretical Contribution

The theoretical contributions of this study lie in its advancement of understanding the intricate interplay between financial technology adoption, owner financial literacy, risk tolerance, and MSME performance in the context of Indonesia. By empirically examining these relationships, the study contributes to the theoretical literature by elucidating the mechanisms through which these factors influence MSME outcomes. Specifically, the findings shed light on the transformative impact of financial technology adoption on MSME performance, the significance of owner financial literacy in shaping financial decision-making processes, and the strategic importance of risk tolerance in driving business growth and innovation. Moreover, the study highlights the synergistic effects of these factors, underscoring the importance of integrated approaches to MSME management that leverage technology, enhance financial literacy, and foster a culture of strategic risk-taking. These theoretical insights provide a foundation for future research endeavors aimed at exploring additional dimensions of MSME performance and informing the development of more nuanced theoretical frameworks in the field of entrepreneurship and small business management.

CONCLUSION

In conclusion, this study offers valuable insights into the dynamics shaping the performance of Micro, Small, and Medium Enterprises (MSMEs) in Indonesia. By examining the relationships between financial technology adoption, owner financial literacy, risk tolerance, and MSME performance, the study contributes to a deeper understanding of the factors driving business success in the Indonesian context. The findings highlight the transformative potential of financial technology in enhancing MSME competitiveness, the importance of owner financial literacy in facilitating informed decision-making, and the strategic significance of risk tolerance in

driving business growth and innovation. Moreover, the study underscores the synergistic effects of these factors, emphasizing the need for integrated approaches to MSME management that leverage technology, enhance financial literacy, and foster a culture of strategic risk-taking. Moving forward, policymakers, financial institutions, and business support organizations can leverage these insights to design targeted interventions and initiatives aimed at promoting sustainable MSME development and fostering resilience in the face of economic challenges. By empowering MSMEs with the tools, knowledge, and support they need to thrive, stakeholders can contribute to inclusive economic growth and prosperity across Indonesia.

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