APLIKATIF
Journal of Research Trends in Social Sciences and Humanities
DOI: https://doi.org/10.59110/aplikatif.v4i2.666
Vol. 4 No. 2, June 2025, pp. 251-266

The Role of Financial Knowledge and Inclusion in MSME Behavior in Bangkalan

Adityani Nur Witasari[1], Helmi Buyung Aulia Safrizal[1], Moh. Zaki Kurniawan[1*]
[1]Universitas Trunojoyo, Madura, Indonesia
*zaki.kurniawan@trunojoyo.ac.id

ABSTRACT

This research examines the impact of financial knowledge and financial inclusion on the financial behavior of MSME actors in Bangkalan Regency. Using a quantitative approach, the study analyzes data from 80 MSME entrepreneurs selected through purposive sampling. The primary data was collected via structured questionnaires and analyzed using multiple regression techniques. The findings reveal that both financial knowledge and financial inclusion significantly influence the financial behavior of MSMEs in the region. This study contributes to the literature by addressing the gap in research on financial behavior among MSMEs in developing regions, particularly in Bangkalan. It combines financial knowledge and financial inclusion to provide a comprehensive understanding of financial behavior in this context. The study extends the behavioral finance framework and offers practical insights for policymakers and financial service providers to design inclusive financial policies and educational programs aimed at improving MSME financial practices. Theoretically, it enhances the understanding of financial behavior in rural MSME contexts, while practically calling for integrated policies that combine financial education with better access to financial services.

Keywords: *Developing Regions; Financial Knowledge; Financial Inclusion; Financial Behavior; MSMEs.*

INTRODUCTION

In Indonesia, the development of Micro, Small, and Medium Enterprises (MSMEs) is crucial for enhancing national competitiveness. These businesses play a significant role in the economy, contributing substantially to local economic activities and job creation. MSMEs account for a large portion of Gross Domestic Product (GDP) and are pivotal in absorbing a considerable portion of the workforce (Andika et al., 2021; Rahmadani & Jefriyanto, 2021). However, despite their significant potential, MSMEs face several challenges, particularly in managing financial resources, which hinder their ability to grow and remain sustainable, as highlighted in recent studies on financial management challenges in MSMEs (Meilariza & Delima, 2024; Angreyani et al., 2023).

One of the key challenges MSMEs face is related to financial behavior, which directly impacts their business success. Financial behavior refers to an individual's ability to manage daily financial activities such as budgeting, saving, investing, and monitoring business finances. According to Edwy et al. (2023), financial management behavior includes processes such as planning, auditing, and seeking financial information, all of which are essential for the efficient management of business finances. Anwar et al. (2022) also emphasize that investment decisions, influenced by both financial knowledge and psychological factors, form an integral part of financial behavior.

In many cases, MSME actors in Indonesia struggle with inadequate financial knowledge. Financial knowledge includes understanding various financial tools, such as credit cards, loans, and savings accounts, as well as the skills necessary to make informed decisions about investments, insurance, and budgeting (Hendrawan et al., 2023). MSME actors with limited financial literacy often fail to make sound financial decisions, which in turn affects the long-term viability of their businesses. As highlighted by Icih & Kurniawan (2020), business owners can achieve their financial goals more effectively by developing professional financial management skills, including budgeting and business fund planning.

Moreover, MSMEs face significant barriers in accessing formal financial services. Limited capital is a major constraint for MSMEs, as it hampers their ability to expand and scale their businesses. As Dewi (2020) points out, this capital limitation often results in MSME actors missing opportunities for growth and market expansion. To overcome this issue, financial inclusion plays a pivotal role by ensuring that MSMEs have access to the financial tools they need, such as credit and loans. Tubastuvi et al. (2024) define financial inclusion as efforts to remove barriers—both price and non-price—that restrict people's access to financial services. Increased financial inclusion allows MSME actors to access essential capital, thereby improving their financial behavior and contributing to overall business growth.

Bangkalan Regency, located in East Java, is an example of a region that heavily relies on MSMEs to drive its economy. Despite its large local cultural heritage and significant economic potential, MSMEs in Bangkalan continue to face challenges related to financial behavior, particularly low financial literacy, limited understanding of budgeting and investment, and restricted access to formal financial services. These challenges hinder the ability of MSMEs to manage their finances effectively and sustain long-term growth.

Despite the critical role of MSMEs in this region, there is limited scholarly research focusing on the financial behavior of entrepreneurs in Bangkalan. Existing studies have largely ignored rural areas like Bangkalan, which face unique financial challenges compared to urban regions. Therefore, this study seeks to fill this empirical gap by examining how financial knowledge and financial inclusion influence the financial behavior of MSME actors in Bangkalan. The findings of this study are expected to offer valuable insights for policymakers and financial service providers in designing localized financial education strategies and inclusive financial policies tailored to the needs of MSMEs in developing regions.

This research brings novelty by exploring the combined impact of financial knowledge and financial inclusion on the financial behavior of MSMEs in Bangkalan—a rural and under-researched region. Unlike prior studies that often treat these variables separately or focus on urban contexts, this study provides empirical evidence that is directly applicable to the challenges faced by MSMEs in developing regions. By integrating these two critical factors, the study aims to offer practical policy-oriented insights that can support the growth and sustainability of MSMEs in rural areas.

Therefore, this study will address the following research questions: (1) To what extent does financial knowledge influence the financial behavior of MSME actors in Bangkalan Regency? (2) How does financial inclusion affect the financial behavior of MSME actors? (3) Do financial knowledge and financial inclusion collectively impact the financial behavior of MSME actors in Bangkalan?

This study aims to contribute to the existing literature on MSMEs by providing a comprehensive understanding of how financial knowledge and financial inclusion jointly influence financial behavior. The findings will also help guide the development of targeted policies and initiatives to improve financial literacy and access to financial services, ultimately fostering the growth and sustainability of MSMEs in regions like Bangkalan.

LITERATURE REVIEW

Financial behavior is a critical factor in the success and sustainability of Micro, Small, and Medium Enterprises (MSMEs). These businesses play a significant role in Indonesia's economy, contributing to GDP and job creation (Aeni et al., 2024; Prihastiwi et al., 2021). However, many MSME actors face challenges in managing their finances, often due to a lack of financial knowledge and limited access to financial services

Financial Knowledge and Its Impact on Financial Behavior

Financial knowledge refers to an individual's understanding of financial concepts, including the use of financial tools such as credit cards, loans, and budgeting techniques (Urefe et al., 2024). Entrepreneurs with higher financial literacy are better equipped to manage their business finances and make informed decisions regarding investments and resource allocation. Alperovych et al. (2024) suggests that financial knowledge enables business owners to develop effective budgeting strategies and ensure their financial goals are met. Research by Pramedi & Haryono (2021) and Rachapaettayakom et al. (2020) supports the idea that financial literacy improves the financial behavior of MSME owners, leading to more sustainable business practices

Financial Inclusion and Its Role in Financial Behavior

Financial inclusion, the effort to remove barriers to access financial services, is equally crucial for MSMEs. It ensures that business owners, particularly in rural areas, can access the necessary financial tools for business growth, such as loans, savings accounts, and insurance (Fomum & Opperman, 2023). Access to financial services allows MSME actors to better manage capital, make investments, and plan for future growth. Ratnawati (2020) highlights that financial inclusion helps mitigate capital constraints, which are a significant barrier to MSME development. Febriansyah et al. (2024) further argue that increased financial inclusion leads to improved financial behavior, as MSME owners can leverage financial services to optimize their business operations.

Financial Behavior in Developing Regions

The financial behavior of MSMEs is particularly critical in rural regions like Bangkalan, where financial literacy and access to formal financial services are limited. MSME actors in Bangkalan face challenges such as low financial literacy, limited understanding of budgeting, and restricted access to capital (Sugita & Sinarwati, 2022). According to Parulian & Tan (2024), the lack of financial knowledge and limited access to financial services significantly affects the financial behavior of MSME actors, ultimately impacting their business performance. This underscores the importance of enhancing both financial knowledge and inclusion to improve the financial management of MSMEs in regions like Bangkalan.

Financial knowledge and financial inclusion are crucial for improving the financial behavior of MSME actors. Enhancing financial literacy and ensuring access to financial services can help MSMEs overcome the financial challenges they face, thus fostering business growth and sustainability. The literature reviewed highlights the need for comprehensive strategies that combine financial education with improved financial access, particularly in rural areas where MSMEs face the greatest barriers to financial success.

METHODS

This study employs a quantitative research design to examine the influence of financial knowledge and financial inclusion on the financial behavior of MSME actors in Bangkalan Regency, East Java. Purposive sampling was used to select respondents based on the criterion that they had utilized financial services from either banking or non-banking institutions in their business operations. A total of 80 valid and analyzable responses were collected through field visits to MSME clusters, such as traditional markets, home-based enterprises, and community cooperatives.

The questionnaire used for data collection was designed to measure the variables of financial knowledge, financial inclusion, and financial behavior. The items in the questionnaire were based on indicators derived from existing literature (Kholilah & Iramani, 2013; Yanti, 2019) and tailored to the context of MSMEs.

To ensure clarity and minimize bias, respondents were given sufficient time to read and answer the questions independently. If necessary, trained enumerators provided clarification without influencing the responses. The data collection process took approximately two weeks.

Once data were collected, all responses were reviewed and verified for completeness before being processed through multiple linear regression analysis. This analysis method was chosen to examine the relationships between the independent variables (financial knowledge and financial inclusion) and the dependent variable (financial behavior).

Prior to the main data collection, a pilot test was conducted with a small group of MSME actors to assess the reliability and validity of the questionnaire. The Cronbach's alpha coefficient was calculated for each variable, yielding satisfactory results and confirming that the instrument was reliable for measuring the constructs of financial knowledge, financial inclusion, and financial behavior.

To ensure the robustness of the analysis, normality, multicollinearity, and heteroscedasticity tests were performed. The results indicated that the data met the necessary assumptions for multiple regression analysis, confirming the validity of the statistical methods used.

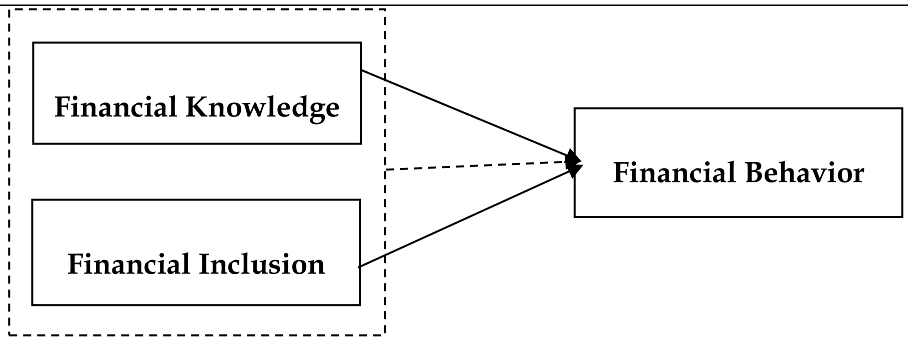

Figure 1. Conceptual Model

RESULTS

This section presents the results of the data analysis conducted to examine the validity and reliability of the research instrument, test the assumptions of the regression model, and analyze the relationships between financial knowledge, financial inclusion, and financial behavior. The findings are organized in the following order: data quality tests, assumption tests, and multiple linear regression analysis. The validity and reliability of the research instrument were first evaluated to ensure that the questionnaire used to measure financial knowledge, financial inclusion, and financial behavior was both valid and reliable. Following this, several classic assumption tests—such as normality, multicollinearity, and heteroscedasticity—were conducted to verify the adequacy of the regression model. The multiple linear regression analysis was then performed to examine the relationships between the independent variables (financial knowledge and financial inclusion) and the dependent variable (financial behavior).

To provide a clearer understanding of the relationships between the variables, the following figures illustrate the positive linear relationships between financial knowledge and financial behavior, as well as between financial inclusion and financial behavior. These visualizations highlight the regression results and offer a more intuitive understanding of how increases in financial knowledge and financial inclusion contribute to improved financial behavior.

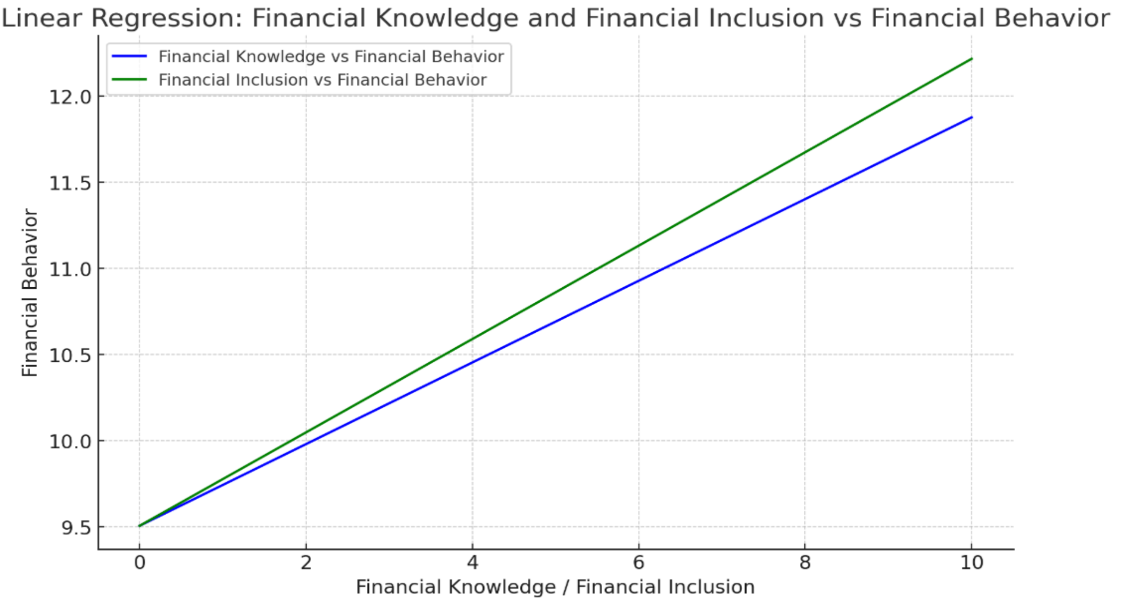

Figure 2. The Impact of Financial Knowledge and Financial Inclusion on Financial Behavior of MSME Actors

The following tables summarize the results of the validity test, reliability test, and the assumptions checks, while the final regression analysis results highlight the significant effects of financial knowledge and financial inclusion on financial behavior. The discussion of these results follows after the presentation of the statistical findings.

Validity Test

To ensure the validity of the measurement instrument, a validity test was performed by comparing the calculated r-values for each item with the critical r-value from the r-table at a significance level of 0.05 (with n = 79). The critical r-value at this level is 0.220. The table below summarizes the results of this validity test for the variables of financial knowledge, financial inclusion, and financial behavior.

Table 1. Recapitulation of Variable Validity Test Results

Variable	Number of Items	Range of *r* value	Critical *r* table (α = 0.05; n = 79)	Conclusion
Financial Knowledge	9	0.558 – 0.871	0.220	All items are valid
Financial Inclusion	8	0.340 – 0.807	0.220	All items are valid
Financial Behavior	7	0.255 – 0.830	0.220	All items are valid

Source: Data processed, 2023.

As shown in Table 1, the r-values calculated for all variables—Financial Knowledge, Financial Inclusion, and Financial Behavior—are greater than the critical r-value of 0.220, with ranges between 0.558 to 0.871 for Financial Knowledge, 0.340 to 0.807 for Financial Inclusion, and 0.255 to 0.830 for Financial Behavior. Therefore, it can be concluded that all items are valid for use in this study.

Reliability Test

The reliability test was conducted to assess the consistency and reliability of the questionnaire used in this study. Cronbach's alpha was calculated for each of the variables—financial knowledge, financial inclusion, and financial behavior—to determine whether the items in the questionnaire consistently measured the intended constructs. According to the general rule, a Cronbach's alpha value above 0.6 indicates that the items in the questionnaire are considered reliable.

Table 2. Recapitulation of Variable Reliability Test Results

Number of Questions	Variable	Reliability Limits	Cronbach alpha	Information
9	Financial Knowledge	0,6	0,895	Reliabel
8	Financial Inclusion	0,6	0,835	Reliabel
7	Financial Behavior	0,6	0,772	Reliabel

Source: Data processed, 2023.

The results show that the Cronbach's alpha values for all variables (ranging from 0.772 to 0.895) are well above the threshold of 0.6. This indicates that the questionnaire is reliable for measuring the intended constructs. Therefore, it can be concluded that the items in the questionnaire are consistent and provide valid measurements for the variables being studied.

Classic Assumption Test

a. Normality Test

The normality test was performed to check whether the residuals from the regression model follow a normal distribution, which is a key assumption for running multiple linear regression. The One-Sample Kolmogorov-Smirnov Test was applied to assess the normality of the residuals.

Table 3. Recapitulation of Normality Test Results

Variable	N	Mean	Std. Deviation	K-S Statistic	Sig. (2-tailed)	Conclusion
Unstandardized Residual	79	0.0000000	2.7115	0.081	0.200	Normal distribution

Source: Data processed, 2023.

Based on the results presented in Table 3, the Kolmogorov-Smirnov statistic for the residuals is 0.081, with a significance value of 0.200. Since the p-value (0.200) is greater than the significance level (α = 0.05), it can be concluded that the residuals are normally distributed, meeting the assumption of normality required for regression analysis.

b. Multicollinearity Test

The multicollinearity test was performed to check if there is a high correlation between the independent variables, which could affect the validity of the regression model. Variance Inflation Factor (VIF) and Tolerance are used to assess multicollinearity. Generally, a VIF value greater than 10 or a Tolerance value less than 0.1 indicates the presence of multicollinearity.

Table 4 below presents the results of the multicollinearity test for the independent variables of financial knowledge and financial inclusion.

Table 4. Multicollinearity Test Results

No	Independent Variables	Result	
		Tolerance	VIF
1	Financial Knowledge	0,290	3,443
2	Financial Inclusion	0,290	3,443

Source: Primary data processed.

The results indicate that both the Tolerance values (0.290) and the VIF values (3.443) for financial knowledge and financial inclusion are well below the threshold of 0.1 and 10, respectively. This confirms that there is no multicollinearity between the independent variables in the model, meaning that the variables do not exhibit strong correlations that would affect the regression analysis.

c. Heteroscedasticity Test

The heteroscedasticity test was conducted to check whether there is a variance disparity in the residuals of the regression model, which can indicate problems with the reliability of the regression results. In regression analysis, heteroscedasticity occurs when the variance of the residuals is not constant across all levels of the independent variables. This can affect the standard errors of the coefficients and lead to biased conclusions.

Table 5 presents the results of the heteroscedasticity test for the independent variables of financial knowledge and financial inclusion.

Table 5 Heteroscedasticity Test Results

No	Independent Variables	Significance value
1	Financial Knowledge	0,055
2	Financial Inclusion	0,179

Source: Data processed, 2023.

As shown in Table 5, the significance values for both financial knowledge (0.055) and financial inclusion (0.179) are greater than the significance level of 0.05. This indicates that there is no heteroscedasticity in the regression model. The residuals do not show any variance disparity, and thus the regression model is considered appropriate for further analysis.

Multiple Linear Regression Analysis

The multiple linear regression analysis was conducted to examine the relationship between the independent variables (financial knowledge and financial inclusion) and the dependent variable (financial behavior) of MSME actors in Bangkalan Regency. The results of the regression analysis are presented in Table 6, which summarizes the regression coefficients, t-values, significance levels, and the model's overall fit.

Table 6. Summary of Multiple Linear Regression Test Results

Variable	Regression Coefficients	T Count	Sig
Constant	9.506	4.586	0.00
Financial Knowledge	0,237	2,379	0,020
Financial Inclusion	0,271	2.231	0,029
Uji F (simultan) = 33,693			
R Square = 0,456			
Sig F = 0.000			

Source: Data processed, 2023.

The multiple linear regression equation derived from the analysis is as follows:

$$Y = 9.506 + 0.237X1 + 0.271X2 + e$$

Where:

- Y represents financial behavior of MSME actors in the Bangkalan Regency.
- X1 represents financial knowledge.
- X2 represents financial inclusion.

Interpretation of the Regression Results:

1. Constant Value (9.506): This value represents the intercept of the regression equation. It indicates that if both financial knowledge and financial inclusion are equal to zero, the financial behavior of MSME actors in Bangkalan would be 9.506. While this might not be realistic in a real-world scenario (as both variables will not be zero), it provides the baseline value for financial behavior.
2. Financial Knowledge (b1 = 0.237): The regression coefficient for financial knowledge is 0.237, which means that for every 1-unit increase in financial knowledge, the financial behavior of MSME actors increases by 0.237 units, assuming financial inclusion remains constant. This indicates that higher financial knowledge positively influences financial behavior, suggesting that MSME actors who are more knowledgeable about finance tend to exhibit better financial practices.
3. Financial Inclusion (b2 = 0.271): The regression coefficient for financial inclusion is 0.271, meaning that for every 1-unit increase in financial inclusion, the financial behavior of MSME actors increases by 0.271 units, holding financial knowledge constant. This shows that access to and use of financial services also significantly improves financial behavior. MSME actors with better access to financial products and services tend to exhibit better financial management, such as budgeting and saving.

Model Fit:

a. The R Square value of 0.456 indicates that approximately 45.6% of the variation in financial behavior can be explained by the independent variables' financial knowledge and financial inclusion. This suggests a moderate but significant relationship between these variables and financial behavior.

b. The F-test value of 33.693 with a significance level of 0.000 indicates that the overall regression model is statistically significant, meaning that the independent variables together significantly influence the dependent variable (financial behavior).

Coefficient of Determination (R^2)

Based on the results presented in Table 6, the Adjusted R^2 value is 0.456, indicating that the independent variables—financial knowledge, financial inclusion, and income—explain 45.6% of the variation in the dependent variable, which is financial behavior of MSME actors. This suggests that these variables collectively have a moderate impact on the financial behavior of MSME actors in Bangkalan.

The remaining 54.4% of the variation in financial behavior is influenced by other factors that were not observed or discussed in this study. The correlation coefficient (R) is 0.686, which indicates a relatively strong relationship between the independent and dependent variables. This further confirms that financial knowledge and financial inclusion significantly contribute to shaping the financial behavior of MSME actors, but there are other factors that may also play a role in influencing their financial decisions.

DISCUSSION

The Influence of Financial Knowledge on the Financial Behavior of MSME Actors

Based on the table, t count = 2.379 < t tabelly = 1.99167 with a significance of 0.020 < α= 0.05, then H0 is rejected and H1 is accepted. So that financial knowledge has a significant effect on the financial behavior of MSME actors in Bangkalan district, with a positive regression coefficient which means that if financial knowledge is higher, it will result in the financial behavior of MSMEs will be better and preferably if financial knowledge is getting lower, it will also result in MSME financial behavior will also decrease.

The results of the hypothesis test show that the financial knowledge of MSME actors in Bangkalan Regency greatly influences their financial decisions. The financial knowledge possessed by MSME actors in Bangkalan Regency provides choices related to financial decisions. The ability to understand finance will increase their confidence regarding financial aspects. In the context of MSMEs, basic financial knowledge has an important role in maintaining business sustainability. The study found that individuals who have high financial knowledge will be more confident to make informed decisions about investment, consumption, savings, and financial management. This supports the idea that financial knowledge can help MSME actors manage their finances more wisely.

According to Sara (2022), knowledge of good finance is a basic need for every individual. The benefit of having financial knowledge is that individuals can have good financial planning and avoid financial problems. High financial knowledge will increase good financial behavior, while low financial knowledge will lead to wrong financial behavior. This research is in line with the research conducted by Lating et al. (2025), Fauziyah & Sulastri (2022), and Tambunan (2022). Practically, these results underscore the need for financial education programs tailored to MSMEs that cover technical skills such as working capital management, budgeting, and debt management.

Comprehensive knowledge will strengthen MSMEs' capacity for autonomous and sustainable financial management.

The Influence of Financial Inclusion on the Financial Behavior of MSME Actors

Based on the table above, t calculates = 2.231 > t table = 1.99167 with a significance of 0.029 < α=0.05 then H0 is rejected and H2 is accepted. So that financial inclusion has a significant effect on the financial behavior of MSME actors in Bangkalan Regency with a positive regression coefficient. This shows that the higher the increase in financial inclusion, the better the financial behavior of MSME actors and vice versa that the lower the financial inclusion of MSME actors in Bangkalan Regency. This is because in the Bangkalan area, the people have no obstacles in accessing financial services.

Financial inclusion can be said to be successful if the community can easily reach and utilize financial institutions so that people's personal financial behavior becomes better. In this study, it is known that the people of Bangkalan have used and utilized financial institutions for their financial interests. In accordance with the results of the questionnaire with the highest score, namely on the usage indicator.

According to Ratnawati (2020), financial inclusion ensures that people in regions with greater access to financial services, such as banking, exhibit improved financial behavior. This is particularly true in areas where financial intermediation and capital access are better integrated. Financial inclusion is a way for MSME actors to gain access to decent financial services so that it will have an impact on sales growth, capital, and employment which is expected to increase the profits of MSME actors (Sugita and Sinarwati, 2022). This research shows that financial services are easily accessible and accessible so that they can be used properly, thus financial behavior can be said to be good. This hail is in line with research conducted by Andriyani and Sulistyowati (2021) and Pinem and Mardiatmi (2021). However, successful financial inclusion must go beyond access; it must ensure quality services and product suitability for the specific needs of small businesses. This calls for collaboration between financial institutions and local governments to design inclusive financial services that are practical, affordable, and sustainable.

The Influence of Financial Knowledge, Financial Inclusion and Income on MSME Financial Literacy

From the results of the study, it was found that the variables of financial knowledge, financial inclusion, and income had a simultaneous effect on management behavior in MSMEs in Bangkalan Regency. This is evidenced by the results of the f (simultaneous) test, namely the value of f calculated as 23.045 while f of the table is 2.75 obtained from the presence table of the distribution f for a probability of 0.05. Since f is calculated > f table (23.045 > 2.75) with sig p-value = 0.000<0.05. So that all independent variables, namely financial knowledge, financial inclusion and income together affect the dependent variables of financial behavior.

According to Sari, Nugroho, & Rahmiyati (2023), to improve the performance of MSME businesses, financial inclusion plays a crucial role in the use of financial instruments, and the financial knowledge possessed by business actors can affect their financial behavior. Business managers who understand financial instruments will be more confident in using them to improve their business's financial behavior. In this study, the relationship between financial knowledge and financial inclusion has an impact on MSMEs in Bangkalan district, particularly in terms of financial behavior. So, if MSMEs in Bangkalan Regency want to improve their business financial management, they must be supported by financial knowledge and financial inclusion.

Setiawati, Gursida, & Indrayono (2025) explain that financial behavior is a science that explains individual behavior related to how individuals treat, manage, regulate, and use the financial resources available to them. Individuals who have responsible financial behavior tend to be effective in using the money they have. This is also in line with research from Sari, Nugroho, & Rahmiyati (2023), which shows that financial knowledge and financial inclusion have a positive influence on financial behavior. Future research should consider a behavioral economics approach by incorporating psychological variables such as locus of control, risk perception, or self-control to enrich the understanding of MSME financial behavior in developing regions.

Theoretical and Practical Implications

The results of the regression analysis show that financial knowledge ($\beta = 0.237$) and financial inclusion ($\beta = 0.271$) have a positive and significant effect on the financial behavior of MSME actors. This finding indicates that increasing financial literacy and wider access to formal financial services can encourage MSME actors to manage their finances more wisely, including in preparing budgets, saving, and avoiding impulsive financial decisions. The coefficient of determination (R^2) value of 0.456 indicates that 45.6% of the variation in financial behavior can be explained by these two variables. This emphasizes the importance of the role of financial literacy and inclusion in encouraging healthy financial behavior among MSMEs, while also opening space for further research to consider other variables such as financial attitudes, self-control, or psychological factors in order to gain a more comprehensive understanding.

Theoretically, this study reinforces the behavioral finance literature by providing empirical evidence from a rural context in Indonesia. The findings support the notion that financial behavior is driven not only by rational decision-making but also by access to financial services and internal financial capacity.

Practically, the results highlight the need for integrated policy approaches. Financial education will be ineffective without sufficient access to financial institutions, and financial inclusion alone may be counterproductive if users lack the knowledge to use services appropriately. Therefore, an integrated intervention that combines financial literacy with inclusive service design must be a key priority for MSME development policy, particularly in emerging and rural regions.

CONCLUSION

Based on the results of the research and discussion that has been presented in the Based on the findings of this study regarding the influence of financial knowledge, financial inclusion, and income on the financial behavior of MSME actors in Bangkalan Regency, several key conclusions can be drawn. First, financial knowledge has a significant impact on the financial behavior of MSME actors in Bangkalan. The higher the financial knowledge possessed by these actors, the better their ability to manage their business finances. Second, financial inclusion also plays a positive role in enhancing the financial behavior of MSMEs. Easier access to formal financial services improves MSME actors' capacity to manage their financial resources, thereby fostering better financial practices. Third, the combination of financial knowledge and financial inclusion jointly influences the financial behavior of MSME actors. These two factors complement each other and work together to improve the way MSME actors manage their finances.

This research highlights the importance of integrating financial education and improving access to financial services for MSME actors. Therefore, policies that combine both aspects should be prioritized by policymakers and financial service providers to help MSME actors fully capitalize on both their financial knowledge and broader access to financial resources. However, the study has limitations in terms of its geographical scope, being focused only on Bangkalan, and the relatively narrow set of independent variables considered. Future research is recommended to broaden the geographical coverage, include psychological variables such as financial attitudes, and employ longitudinal methods to observe behavioral changes over time. Additionally, given the rise of digital financial services, future studies should explore the role of digital financial services in improving MSME financial behavior, particularly in rural and underserved regions, as these services offer more efficient and affordable solutions for increasing financial inclusion.

REFERENCES

Aeni, T., Rena, S., & Destiana, R. (2024). The influence of the use of financial technology, owner financial literacy, and risk tolerance on the performance of MSMEs in Indonesia. *International Journal of Business Law and Education, 5*(1), 996-1006. https://doi.org/10.56442/ijble.v5i1.494

Alperovych, Y., Calcagno, R., & Lentz, M. (2024). Entrepreneurs on their financial literacy: Evidence from the Netherlands. *Venture Capital, 26*(4), 377-400. https://doi.org/10.1080/13691066.2023.2234078

Andika, A., Jennifer, J., Huang, J., & Sebastian, J. (2021). Analysis of digital marketing adoption in Indonesian micro, small, and medium enterprises. *Jurnal Manajemen Bisnis, 18*(3), 308-328. https://doi.org/10.38043/jmb.v18i3.3173

Andriyani, P., & Sulistyowati, A. (2021). Analisis pengaruh literasi keuangan, inklusi keuangan, dan tingkat pendidikan terhadap perilaku keuangan pelaku UMKM kedai/warung makanan di Desa Bahagia Kabupaten Bekasi. *Aliansi: Jurnal Manajemen dan Bisnis, 16*(2), 61–70. https://doi.org/10.46975/aliansi.v16i2.100

Angreyani, A., Akbar, A., Haeruddin, M., Mustafa, M., & Mustafa, F. (2023). The phantom menace: A moderation analysis of gender on MSMEs' financial literacy and financial performance. *Asian Research Journal of Arts & Social Sciences, 21*(2), 48-55. https://doi.org/10.9734/arjass/2023/v21i2466

Anwar, R., Natalia, T., & Gultom, A. (2022). Online marketing strategy as a solution to increase the sales turnover of MSMEs affected by COVID-19 in OKU Regency. *Nusantara Science and Technology Proceedings*, 57-62. https://doi.org/10.11594/nstp.2022.1709

Arifin, A. Z., Kevin, & Siswanto, H. P. (2017). The influence of financial knowledge, financial confidence, and income on financial behavior among the workforce in Jakarta. *MIX: Jurnal Ilmiah Manajemen, VII* (1), 37–47. https://www.neliti.com/publications/154883/the-influence-of-financial-knowledge-financial-confidence-and-income-on-financia

Chairil, A., & Niangsih, F. F. (2020). Literasi keuangan dan manajemen keuangan pribadi mahasiswa di Provinsi Bengkulu. *The Manager Review Jurnal Ilmiah Ilmu Manajemen dan Bisnis,* *2*(2), 67–98. https://ejournal.unib.ac.id/index.php/a46/article/view/16329

Dewi, M. A. (2020). Dampak fintech terhadap perkembangan inklusi keuangan pada UMKM di Jawa Timur. *Gorontalo Accounting Journal,* *3*(2), 68. https://doi.org/10.32662/gaj.v3i2.973

Edwy, F., Firdaus, M., A.P., I., Leonardi, S., & A.P., Z. (2023). Financial management: The implementation in MSMEs. *International Journal of Multicultural and Multireligious Understanding, 10*(10), 273. https://doi.org/10.18415/ijmmu.v10i10.5170

Fauziyah, A., & Sulastri, S. (2022). Financial education for MSMEs: What is the best financial education delivery method? *Linguistics and Culture Review*, 391-396. https://doi.org/10.21744/lingcure.v6nS1.2066

Febriansyah, A., Syafei, M. Y., Narimawati, U., Chochole, T., & Stakic, A. J. (2024). How important is financial inclusion for the performance of MSMEs? *Australasian Accounting, Business and Finance Journal,* *18*(5). https://doi.org/10.14453/aabfj.v18i5.04

Fomum, T. A., & Opperman, P. (2023). Financial inclusion and performance of MSMEs in Eswatini. *International Journal of Social Economics, 50*(11), 1551-1567. https://doi.org/10.1108/ijse-10-2020-0689

Ghozali, I. (2016). *Aplikasi analisis multivariete dengan program IBM SPSS 23 (Edisi 8) (Cetakan ke)*. Badan Penerbit Universitas Diponegoro.

Hendrawan, H., Bakri, A., & Fatchuroji, A. (2023). Effects of capital, usage of accounting information, financial statements, and characteristics entrepreneurship on financial capability and business performance of MSMEs in Bogor city. *The Es Accounting and Finance, 1*(02), 72-81. https://doi.org/10.58812/esaf.v1i02.64

Icih, I. F., & Kurniawan, A. (2020). Pengaruh literasi keuangan, sikap love of money, dan pengetahuan laporan keuangan terhadap perilaku pengelolaan keuangan UMKM di wilayah Kabupaten Subang. *Journal of Accounting for Sustainable Society, 02*(01), 41–66. https://ojs.stiesa.ac.id/index.php/jass/

Lating, A. I. S., Buchori, I., Muflihin, M. D., Rahayu, H. A., Aripratiwi, R. A., Romaisyah, L., & Susanto, F. F. (2025). Socialization of the importance of financial record keeping for MSMEs. *Sahwahita: Community Engagement Journal,* *2*(2), 79-88. https://doi.org/10.69965/sahwahita.v2i2.144

Meilariza, R., & Delima, Z. (2024). Digitalization of micro, small, and medium enterprises (MSMEs) in Indonesia. *Knee Social Sciences*. https://doi.org/10.18502/kss.v9i17.16334

Nababan, D., & Sadalia, I. (2013). Analisis personal financial literacy dan financial behavior mahasiswa strata I Fakultas Ekonomi Universitas Sumatera Utara. *Media Informasi Manajemen,* *1*(1), 1–16. https://repositori.usu.ac.id/handle/123456789/71553

Parulian, P., & Tan, E. (2024). The effect of financial access, financial literacy, and financial experience on MSME financial behavior. *Daengku: Journal of Humanities and Social Sciences Innovation,* 4(4), 550-559. https://doi.org/10.35877/454RI.daengku2564

Pinem, D., & Mardiatmi, B. D. (2021). Analisis literasi keuangan, inklusi keuangan dan pendapatan terhadap perilaku pelaku UMKM di Depok Jawa Barat. *Syntax Literate; Jurnal Ilmiah Indonesia, 6*(1), 104. https://doi.org/10.36418/syntax-literate.v6i1.1650

Pramedi, A. D., & Haryono, N. A. (2021). Pengaruh financial literacy, financial knowledge, financial attitude, income dan financial self-efficacy terhadap financial management behavior entrepreneur lulusan perguruan tinggi di Surabaya. *Jurnal Ilmu Manajemen, 9*(2), 572-586. https://doi.org/10.26740/jim.v9n2.p572-586

Prihastiwi, D., Sunaningsih, S., & Nugraheni, A. (2021). Between expectation and reality: Factors determining financing sources preferred and used by MSMEs. *Jurnal Analisis Bisnis Ekonomi, 19*(2), 74-85. https://doi.org/10.31603/bisnisekonomi.v19i2.3927

Rachapaettayakom, P., Wiriyapinit, M., Cooharojananone, N., Tanthanongsakkun, S., & Charoenruk, N. (2020). The need for financial knowledge acquisition tools and technology by small business entrepreneurs. *Journal of Innovation and Entrepreneurship, 9*, 1-28. https://doi.org/10.1186/s13731-020-00136-2

Rahmadani, R., & Jefriyanto, J. (2021). A strategy to promote the competitiveness of micro, small, and medium enterprises (MSMEs) during the condition of COVID-19 pandemics. *Jurnal Akuntansi, 11*(3), 197–208. https://doi.org/10.33369/j.akuntansi.11.3.197-208

Ratnawati, K. (2020). The influence of financial inclusion on MSMEs' performance through financial intermediation and access to capital. *The Journal of Asian Finance, Economics and Business, 7*(11), 205-218. https://doi.org/10.13106/jafeb.2020.vol7.no11.205

Sara, Y. (2022). Empowering MSMEs through financial literacy and management skills. In *Proceedings of The International Conference on Economics and Business* (Vol. 1, No. 1, pp. 293-299). https://doi.org/10.55606/iceb.v1i1.394

Sari, Y., Nugroho, M., & Rahmiyati, N. (2023). The effect of financial knowledge, financial behavior and digital financial capabilities on financial inclusion, financial concern, and performance in MSMEs in East Java. *Uncertain Supply Chain Management, 11*(4), 1745-1758. https://doi.org/10.5267/j.uscm.2023.6.016

Setiawati, S., Gursida, H., & Indrayono, Y. (2025). MSME financial literacy model as a measuring tool for MSME financial performance: Case study of Bogor, Depok, and Kuningan MSMEs. *Utsaha: Journal of Entrepreneurship*, 48-68. https://doi.org/10.56943/joe.v4i1.710

Sugita, W., & Sinarwati, N. K. (2022). Peran literasi dan inklusi keuangan terhadap prilaku keuangan di masa pandemi (study kasus pada UMKM Kabupaten Buleleng). *Jurnal Akuntansi Profesi, 13,* 223–232. https://ejournal.undiksha.ac.id/index.php/JAP/article/view/42230

Tambunan, T. (2022). Financial inclusion, P2P lending, and MSMEs: Evidence from

Indonesia. In *FinTech Development for Financial Inclusiveness* (pp. 60-81). IGI Global. https://doi.org/10.4018/978-1-7998-8447-7.ch005

Tubastuvi, N., Ainun, R., Purwidianti, W., & Zamakhsyari, L. (2024). Enhancing MSME: Exploring the relationship between financial literacy, financial inclusion, and capital access to improve performance. *Airlangga Journal of Innovation Management, 5*(1), 1-16. https://doi.org/10.20473/ajim.v5i1.53990

Urefe, O., Odonkor, T. N., Chiekezie, N. R., & Agu, E. E. (2024). Enhancing small business success through financial literacy and education. *Magna Scientia Advanced Research and Reviews, 11*(2). https://doi.org/10.30574/msarr.2024.11.1.0123