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The Influence of Financial Literacy, Financial Attitude, Financial Inclusion, Locus of Control on MSMEs Performance Case Study in Jabodetabek Area

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ABSTRACT

The research objectives to examine financial literacy, financial attitude, financial inclusion, locus of control on MSMES performance mediated by financial management behavior focusing on MSMEs businesses in the Jabodetabek area. This research is quantitative with the SEM-PLS completion method to analyze factors that influence MSME performance from a financial perspective. The data used is primary data, received responses from 311 respondents spread across Jabodetabek using 4 independent variables, namely Financial Literacy, Financial Inclusion, Locus of Control, Financial Attitude, one dependent variable namely MSMEs Performance with Financial Management as intervening. This research uses a non-probability sampling method to reach respondents who meet the requirements of the selected criteria. The results of the research state that all independent variables have a significant positive influence on Financial Management and MSMEs Performance.

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INTRODUCTION

As the country with the fourth-largest population in the world, Indonesia holds substantial potential to empower its citizens as drivers of economic growth. According to the Central Statistics Agency (BPS, 2022), Indonesia's economy grew robustly by 5.3% and ranks among the highest GDP levels globally as part of the G20 group. One key contributor to this achievement is the digital and creative economy sector, particularly through the development of micro, small, and medium enterprises (MSMEs). MSMEs—operated by individuals or groups with micro, small, or medium-scale businesses—have consistently contributed the largest percentage to Indonesia's GDP over the past five years, as shown in Table 1.

Table 1. The MSMEs Contribution to the Indonesia's GDP From 2019 – 2023

Year	MSMEs Contribution to the GDP
2020	37,30%
2021	60,51%
2022	61,09%
2023	61,10%

Source: BPS (2023)

Beyond GDP, MSMEs play an essential role in employment, engaging over 77 million workers in micro enterprises, around 10 million in small enterprises, and nearly 5 million in medium-sized businesses (BPS, 2023). These enterprises serve as a lifeline for many Indonesians, especially in urban centers like Jakarta, where the working-age population reaches 71.6% with a dependency ratio of only 39.7%. However, despite rapid growth, MSMEs often struggle to scale up, facing persistent challenges related to ownership, marketing, finance, human resource capacity, and business management. These closed-loop issues inhibit their ability to compete with larger firms, resulting in stagnant performance and limited innovation.

A central issue underlying MSME stagnation is the limited financial competence of their owners. Many MSME operators underestimate financial matters they perceive as trivial, leading to suboptimal allocation of assets and capital (Risnaningsih, 2017). In a liberalized market landscape, where imported goods and international franchises pose stiff competition, the need for financial acumen becomes even more pressing. Financial literacy, understood as the ability to acquire and apply financial knowledge, attitudes, and behaviors (Fernandes et al., 2014), emerges as a key determinant of MSME resilience. It encompasses core competencies such as budgeting, saving, investing, borrowing, and risk management (Lusardi & Mitchell, 2014; Mandell & Klein, 2009), and aims to foster informed decision-making that benefits both individuals and society (Willey, 2016).

Beyond financial literacy, financial attitude plays a crucial role. Positive financial attitudes—defined as psychological dispositions toward managing money effectively—enable entrepreneurs to view money not merely as currency but as a strategic resource to achieve personal and business goals (Nguyen et al., 2015; Humaira & Sagoro, 2018). Similarly, financial inclusion, or the removal of barriers limiting access to affordable financial services (Soetionoda & Setiawan, 2018), is indispensable for MSMEs seeking to expand. Improved access to loans and financial products allows small businesses to invest in innovation and productivity, provided they have the knowledge to navigate these systems responsibly (Bank Indonesia, 2014).

Another psychological dimension, locus of control, reflects the extent to which individuals perceive their actions as influencing life outcomes (Soleh et al., 2020). MSME owners with a strong internal locus of control tend to believe their efforts matter, enhancing their capacity for proactive financial management (Khalila & Eramani, 2013). Combined with sound financial management behavior—covering consumption, saving, debt management, and investment practices (Dew & Xiao, 2011; Herdjiono & Damanik, 2016)—these factors shape overall business performance.

While numerous studies have examined individual determinants of financial behavior, research integrating financial literacy, financial inclusion, financial attitude, and locus of control as combined predictors of MSME performance remains limited, particularly in Jakarta Province. This research thus addresses an important gap by investigating how these factors influence MSME financial performance, with financial management behavior as a mediating variable. Ultimately, the study aims to provide a holistic understanding of the internal financial dynamics that can empower MSMEs to achieve sustainable growth in Indonesia's competitive economy.

In light of the issues outlined above, this study aims to comprehensively examine the influence of financial literacy, financial inclusion, financial attitude, and locus of control on the financial performance of MSMEs operating in Jakarta Province. The research is designed to analyze not only the direct effects of these four independent variables but also the mediating role played by financial management behavior in shaping business outcomes. Specifically, the study seeks to answer the following key questions: How does financial literacy affect MSME financial performance? What is the role of financial inclusion in improving business outcomes? To what extent does financial attitude shape financial decision-making and performance? How does locus of control contribute to an entrepreneur's ability to navigate financial challenges? And importantly, does financial management behavior serve as a mediating mechanism that links these psychological and financial factors to the ultimate financial performance of MSMEs?

While prior research has explored the individual impact of financial literacy, financial inclusion, or financial attitude on financial outcomes, these studies have tended to examine each factor in isolation, without accounting for the complex interplay between psychological traits and financial behaviors. Moreover, research focusing on MSMEs in Indonesia—particularly within Jakarta as a key economic hub—remains limited, especially when considering the integrated effects of

internal characteristics such as locus of control alongside financial competencies and access. This study seeks to address this critical research gap by offering a comprehensive, multidimensional analysis that incorporates financial knowledge, attitudes, inclusion, and psychological drivers, while also evaluating the mediating role of financial management behavior. The novelty of this research lies in its holistic approach, which aims to provide a richer understanding of the internal dynamics that enable MSMEs to achieve sustainable financial performance in a highly competitive economic environment.

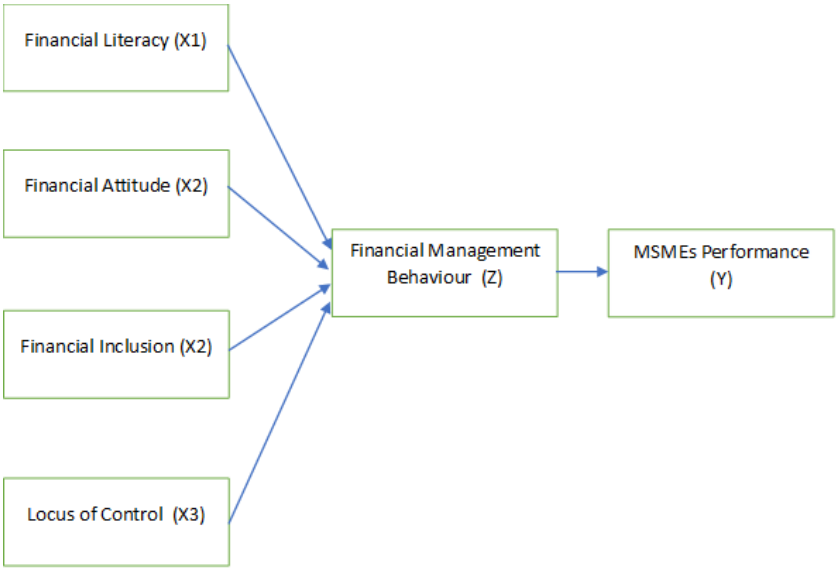

Figure 1. Conceptual framework
Source: Rohman et al (2022); Novi & Ayuni (2022)

Based on the theoretical and empirical foundations discussed, this study proposes several hypotheses to be empirically tested. First, it is hypothesized that financial literacy has a significant impact on the financial performance of MSMEs in the Greater Jakarta area (Ha_1), as business owners with higher financial knowledge are better equipped to allocate resources, manage risks, and plan for long-term sustainability. Conversely, the null hypothesis (H_{01}) posits that financial literacy does not have a significant impact on MSME financial performance.

Second, the study hypothesizes that financial inclusion facilitates better financial management among MSMEs in Jabodetabek (Ha_2). Financial inclusion, as described by Sotino and Setiawan (2018), involves dismantling structural and systemic barriers that hinder access to affordable and appropriate financial services. When MSME managers gain broader access to formal financial systems, they are more capable of making strategic investments, adopting innovations, and enhancing competitiveness. The null hypothesis (H_{02}) maintains that investments in financial management have minimal impact on MSME operations in the Jabodetabek region.

Third, locus of control is posited to have a significant influence on MSME financial performance (Ha_3). As a psychological construct, locus of control reflects the extent to which individuals believe they can shape outcomes through their actions. A strong internal locus of control encourages MSME owners to engage actively in financial oversight and strategic decision-making, which, as previous studies have shown (Duinta et al., 2021; Agustina, 2020; Rohmah et al., 2022), can directly enhance business outcomes. The null hypothesis (H_{03}) suggests no significant influence of locus of control on MSME financial management.

Finally, the study hypothesizes that financial management itself has a significant and direct impact on the financial performance of MSMEs in the Greater Jakarta area (Ha_4). Effective financial management—particularly in terms of cash flow monitoring and budget control—is essential to

maintaining competitiveness and sustainability in an increasingly dynamic market (Asyifa, 2024). The null hypothesis (H_{04}) assumes no significant impact of financial management on MSME performance.

METHOD

Sampling

This study utilizes data obtained from a sample of 311 MSME owners operating in the Greater Jakarta (Jabodetabek) region. Primary data were collected through an online questionnaire developed using Google Forms and distributed across various social media platforms to reach a broad audience. The sampling technique adopted was non-probability sampling, with purposive sampling specifically used to ensure that participants met the inclusion criteria—namely, being active MSME operators within the Jabodetabek area.

Table 2. Operational Definition Table

Variable	Item
Financial Literacy (X1)	1. I know how to manage finances effectively (FL1) 2. I know the requirements to register an account at the bank (FL2) 3. I know if there is an interest rate changes from the bank (FL3) 4. I use saving account to keep my net income safe (FL4) 5. I made an investment for the future (FL5) 6. To avoid risky accidents, I enroll my establishment to insurance service agency (FL6)
Financial Attitude (X2)	1. It is important to me for saving money consistently (FA1) 2. Taking notes for every expenses is very important (FA2) 3. It is not important how much is the money, but saving money is always important (FA3) 4. Expenditure planning is important in managing finances (FA4) 5. Planning for the future is the key to success (FA5)
Financial Inclusion (X3)	1. The location of the financial institution (Bank, etc) is very strategic from my location. (FI1) 2. Financial institutions (banks, etc) are accessible. (FI2) 3. I use the internet in accessing the services of financial institutions (Bank, etc). (FI3) 4. The information provided by the financial institution (Bank, etc) is complete and easy to understand. (FI4) 5. I have been using financial services for a long time (Bank, etc). (FI5) 6. I regularly use financial services (Bank, etc) for my establishment (FI6) 7. Financial institutions (banks, etc) increase my financial activity (FI7)
Locus of Control (X4)	1. I can solve personal problems. (LC1) 2. What I have planned will be accomplished. (LC2) 3. I have complete control over myself. (LC3) 4. I'm easily caught up in solving my problems (LC4) 5. The future depends on me. (LC5) 6. I stand up to every difficulties. (LC6)
Financial Management Behaviour (Z)	1. When I want to buy something for the operation of the business I always pay attention price, quality and benefits. (FMB1) 2. I always consistently spend accordingly the budget that I have made (FMB2) 3. I always make a shopping budget every month so that cash flow is transparent (FMB3) 4. I always set aside money if in business operations there is a surplus in the expenditure budget (FMB4) 5. I am always on time in paying my card bills credit because I don't want any bills to pile up in the following month (FMB5) 6. I will be in debt to the bank if I use the money as business capital (FMB6)
MSMEs Performance (Y)	1. The sales of the establishment that I'm running are increasing every month. (MP1) 2. The profits of the establishment I'm doing are increasing every month (MP2) 3. My establishment capital has been increasing every month (MP3) 4. I do local and national sales (MP4) 5. Every year I try to increase the number of employees because there are more and more jobs. (MP5)

Data Analysis Method

Descriptive Statistical Analysis

This study will utilize descriptive analysis, a method for accurately characterizing the type and range of sensory qualities, to effectively summarize and describe the data. In quantitative research, software such as Amos, SmartPLS, WarpPLS, and SPSS can be used for data analysis (Purwanto et al., 2021). This study specifically uses SmartPLS for data analysis, as it is suitable for studies with small to medium respondent sizes (Purwanto et al., 2021a).

This research adopts a causal design framework, utilizing Structural Equation Modeling (SEM) to analyze and interpret the relationships among latent variables, grounded in both empirical data and causal assumptions for hypothesis testing. Among the various SEM methodologies, Partial Least Squares SEM (PLS-SEM) is deemed particularly suitable for exploratory and predictive purposes. While both Covariance-Based SEM and PLS-SEM serve to examine variable interrelationships, PLS-SEM emphasizes variance-based estimation and is well-suited for evaluating latent constructs, especially in studies using non-probability sampling techniques. As highlighted by Ghozali (2014), the component-based nature of PLS-SEM makes it an appropriate analytical approach in such contexts. This study employs SmartPLS version 3.0 to assess the validity—both convergent and discriminant—as well as the reliability of the measurement model. Recognized for its robustness in PLS-SEM analysis (Henseler et al., 2015), SmartPLS is also used to test seven research hypotheses, facilitating a comprehensive examination of the structural relationships among the study's principal variables.

The assessment procedure in PLS-SEM consists of two main phases. The initial phase—guided by the nature of the measurement model used—focuses on evaluating key measurement indicators. For reflective models, this involves examining both indicator and construct reliability, along with testing for convergent and discriminant validity (Sarstedt & Cheah, 2019). The subsequent phase centers on analyzing the structural model, which includes assessing the significance and magnitude of path coefficients, determining the model's explanatory power through the coefficient of determination (R^2), and evaluating its predictive accuracy.

Outer Model Measurement

The measurement model, also known as the outer model, is assessed in terms of its reliability and validity. This evaluation includes analyzing convergent and discriminant validity for the indicators associated with each construct, alongside the calculation of composite reliability and Cronbach's alpha coefficients. Such assessments are particularly critical when working with reflective measurement models (Ghozali, 2015, p. 73).

Convergent Validity

Convergent validity is assessed by examining the degree to which each indicator correlates with the latent construct it is intended to represent. Indicators are generally considered reliable if their factor loadings exceed 0.70. However, in the context of initial scale development, loading values between 0.50 and 0.60 may still be regarded as acceptable (Ghozali, 2015, p. 37).

Discriminant Validity

Variance Inflation Factor (VIF) values should ideally remain below 5, with figures closer to 3 indicating that multicollinearity among constructs is minimal and unlikely to affect the model's integrity (Hair et al., 2019). Discriminant validity is commonly assessed through multiple approaches, including the Fornell-Larcker criterion, cross-loading analysis, and the Heterotrait-Monotrait

(HTMT) ratio. Particular caution is warranted when HTMT values near or exceed 1.0, as such results may indicate poor discriminant validity. In general, HTMT values above 0.90—and in some contexts, 0.95—are considered indicative of problematic discriminant overlap (Henseler et al., 2015; Garson, 2016).

Construct Reliability

This research adopts a scale-based measurement strategy. Within the PLS-SEM framework, reliability is assessed through both Composite Reliability and Cronbach's Alpha. These metrics are commonly used to evaluate the internal consistency of instruments in psychometric analysis (Abdillah, 2015). A construct is considered reliable if its Cronbach's Alpha value exceeds 0.60, and its Composite Reliability is above 0.70.

Inner Model Measurement

Inner model analysis, also known as structural model analysis, as a method for forecasting the linkages between latent variables (Ghozali, 2015, p. 73).

The Coefficient of Determination (R2)

The coefficient of determination (R^2) reflects the proportion of variance in the endogenous variable that can be explained by the exogenous variables within the model. According to Ghozali (2015, p. 79), an R^2 value equal to or above 0.75 signifies strong explanatory power, a value around 0.50 indicates a moderate level, while a value close to 0.25 is regarded as weak in terms of its explanatory capacity.

The Model Fit Test

Model fit serves as a metric to evaluate the overall performance of both the measurement and structural components of the model. As outlined by Setiawan (2016, p. 48), model fit values fall within a scale of 0 to 1, where values below 0.25 indicate a weak fit, those between 0.25 and 0.36 suggest a moderate fit, and values exceeding 0.36 are considered indicative of a strong or well-fitting model.

Route Coefficients

Path coefficients are standardized regression estimates that quantify the direct influence exerted by an independent variable on a dependent variable within the framework of a specified structural model (Hakam, 2015, pp. 61–70).

Hypothesis Testing

According to Purwanto and Sulistyastuti, as cited in Sanubari (2023), a hypothesis is a tentative statement or assumption related to a research problem, the truth of which remains uncertain and must be verified through empirical investigation. In this study, hypothesis testing was conducted using *t*-statistics to evaluate each hypothesis individually, applying a significance level of 5% (or 0.05). The Critical Ratio (CR), which corresponds to the *t*-value, reflects the model's overall fit and strength. As stated by Akhmadi and Martini (2020), a hypothesis is accepted if the CR reaches a value of at least 1.96, or if the associated probability (*p*-value) is equal to or less than 0.05.

RESULT

Table 3. Respondent Profile

Screening Questions	Answers	Number of Answers
Are you MSMEs seller?	Yes:	100%
	No	0%
Do you operate it in Jabodetabek	Yes	100%
	No	0%
Gender	Male	185
	Female	126
Ages	<20 years old	27
	21-30 years old	90
	31-40 years old	80
	41-50 years old	60
	>50 years old	54
Have you married	Yes	169
	No	142
How much is your annual profit?	<Rp.500.000.000	149
	Rp.500.000.000 - Rp.1.000.000.000	126
	>Rp.1.000.000.000	32

Source: Data processed with SmartPLS 4.0 (2024)

Descriptive Analysis

Name	No.	Type	Missings	Mean	Median	Scale min	Scale max	Observed min	Observed max	Standard deviation
X11	1	MET	0	4.717	5.000	3.000	5.000	3.000	5.000	0.485
X12	2	MET	0	4.900	5.000	3.000	5.000	3.000	5.000	0.349
X13	3	MET	0	1.859	1.000	1.000	5.000	1.000	5.000	1.131
X14	4	MET	0	4.624	5.000	1.000	5.000	1.000	5.000	0.759
X15	5	MET	0	3.241	3.000	1.000	5.000	1.000	5.000	1.471
X16	6	MET	0	2.836	3.000	1.000	5.000	1.000	5.000	1.490
X21	7	MET	0	4.762	5.000	2.000	5.000	2.000	5.000	0.502
X22	8	MET	0	4.855	5.000	2.000	5.000	2.000	5.000	0.419
X23	9	MET	0	4.273	4.000	1.000	5.000	1.000	5.000	0.817
X24	10	MET	0	4.826	5.000	3.000	5.000	3.000	5.000	0.419
X25	11	MET	0	4.878	5.000	2.000	5.000	2.000	5.000	0.373
X31	12	MET	0	4.277	5.000	3.000	5.000	3.000	5.000	0.810
X32	13	MET	0	4.762	5.000	2.000	5.000	2.000	5.000	0.515
X33	14	MET	0	4.855	5.000	2.000	5.000	2.000	5.000	0.469
X34	15	MET	0	4.907	5.000	3.000	5.000	3.000	5.000	0.332
X35	16	MET	0	4.849	5.000	2.000	5.000	2.000	5.000	0.487
X36	17	MET	0	4.592	5.000	2.000	5.000	2.000	5.000	0.674
X37	18	MET	0	4.592	5.000	2.000	5.000	2.000	5.000	0.678
X41	19	MET	0	4.286	4.000	3.000	5.000	3.000	5.000	0.599
X42	20	MET	0	4.669	5.000	3.000	5.000	3.000	5.000	0.510
X43	21	MET	0	4.585	5.000	3.000	5.000	3.000	5.000	0.542
X44	22	MET	0	4.444	4.000	3.000	5.000	3.000	5.000	0.569
X45	23	MET	0	4.775	5.000	3.000	5.000	3.000	5.000	0.447
X46	24	MET	0	4.376	4.000	3.000	5.000	3.000	5.000	0.575
Z1	25	MET	0	4.955	5.000	4.000	5.000	4.000	5.000	0.207
Z2	26	MET	0	4.518	5.000	3.000	5.000	3.000	5.000	0.549
Z3	27	MET	0	4.781	5.000	3.000	5.000	3.000	5.000	0.443
Z4	28	MET	0	4.585	5.000	2.000	5.000	2.000	5.000	0.625
Z5	29	MET	0	4.627	5.000	2.000	5.000	2.000	5.000	0.677
Z6	30	MET	0	2.900	3.000	1.000	5.000	1.000	5.000	1.055
Y1	31	MET	0	3.424	4.000	1.000	5.000	1.000	5.000	0.995
Y2	32	MET	0	3.434	4.000	1.000	5.000	1.000	5.000	1.040
Y3	33	MET	0	3.453	4.000	1.000	5.000	1.000	5.000	1.098
Y4	34	MET	0	3.061	3.000	1.000	5.000	1.000	5.000	1.709
Y5	35	MET	0	2.894	3.000	1.000	5.000	1.000	5.000	1.474

Figure 2. Descriptive Analysis
Source: Data processed with SmartPLS 4.0 (2024)

Outer Model Analysis

To find the relationship between the latent variable and its indicator, an outer model is needed. The results of assessing the reliability and validity of research instruments and constructs are shown in this outer model. This is the outer model for the study:

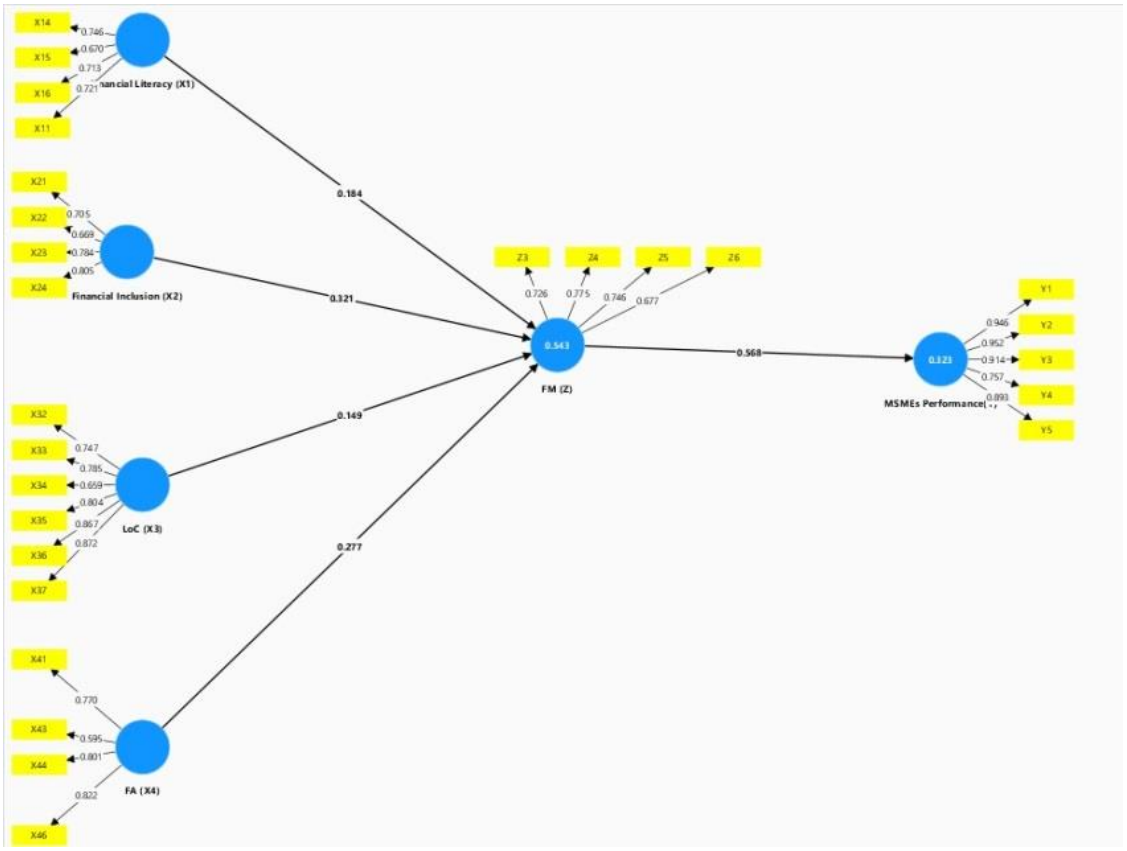

Figure 3. Outer Model Measurement
Source: Data Processed by Researcher, SmartPLS 4.0 (2024)

The results of data analysis using SmartPLS revealed that several indicators exhibited outer loading values below the threshold of 0.50 and were therefore excluded from the measurement model. Specifically, the indicators FL2, FL3, FI5, LOC1, FA1, FA5, FM1, and FM2 did not meet the minimum loading requirement. The evaluation of the measurement model in this study incorporated three key assessment criteria: convergent validity, composite reliability, and discriminant validity.

Convergent Validity

Table 4. Outer Loading Result

Variable	Indicator	Outer Model	Resullt
Financial Literacy (X1)	FL1	0.721	Valid
	FL4	0.746	Valid
	FL5	0.670	Valid
	FL6	0.713	Valid
Financial Inclusion (X2)	FI1	0.705	Valid
	FI2	0.669	Valid
	FI3	0.784	Valid
	FI4	0.805	Valid
Locus of Control (X3)	LOC2	0.747	Valid
	LOC3	0.785	Valid
	LOC4	0.659	Valid
	LOC5	0.804	Valid
	LOC6	0.867	Valid
	LOC7	0.872	Valid
Financial Attitude (X4)	FA1	0.770	Valid
	FA3	0.595	Valid
	FA4	0.801	Valid
	FA6	0.822	Valid
Financial Management (Z)	FM3	0.726	Valid
	FM4	0.775	Valid

Variable	Indicator	Outer Model	Resullt
	FM5	0.746	Valid
	FM6	0.677	Valid
MSMEs Performance (Y)	MP1	0.946	Valid
	MP2	0.952	Valid
	MP3	0.914	Valid
	MP4	0.757	Valid
	MP5	0.893	Valid

Source: Data processed with SmartPLS 4.0 (2024)

As indicated in Table 4, all indicators with outer loading values greater than 0.50 are deemed valid, thereby satisfying the criteria for convergent validity. Consequently, each construct—namely Financial Literacy (X_1), Financial Inclusion (X_2), Locus of Control (X_3), Financial Attitude (X_4), Financial Management (Z), and MSMEs Performance (Y)—is adequately represented by indicators that meet the validity standards established within the measurement model.

Discriminant Validity

Following the assessment of convergent validity, discriminant validity was evaluated using the Average Variance Extracted (AVE) method. The AVE test produced the following results, which are presented in the subsequent table.

Table 4. Average Variance Extracted (AVE)

Variable	Average variance extracted (AVE)	Rule of Thumb	Result
Financial Literacy (X1)	0.509	>0.50	Valid
Financial Inclusion (X2)	0.552		Valid
Locus of Control (X3)	0.628		Valid
Financial Attitude (X4)	0.566		Valid
Financial Management (Z)	0.536		Valid
MSMEs Performance (Y)	0.802		Valid

Source: Data processed with SmartPLS 4.0 (2024)

Table 4 reveals that all indicators corresponding to the constructs—Financial Literacy (X_1), Financial Inclusion (X_2), Locus of Control (X_3), Financial Attitude (X_4), Financial Management (Z), and MSMEs Performance (Y)—have Average Variance Extracted (AVE) values above the 0.50 threshold. This finding confirms that each construct achieves sufficient convergent validity, as indicated by their acceptable AVE metrics.

Cross Loading Result

Table 5. Cross Loading Result

Indicators List	FA (X4)	FM (Z)	FI (X2)	FL (X1)	LoC (X3)	MSMEs Performance(Y)
X11	0.377	0.418	0.430	0.721	0.268	0.407
X14	0.356	0.477	0.556	0.746	0.557	0.402
X15	0.063	0.204	0.112	0.670	0.258	0.562
X16	0.117	0.308	0.226	0.713	0.251	0.587
X21	0.411	0.457	0.705	0.514	0.497	0.316
X22	0.316	0.406	0.669	0.229	0.325	0.164
X23	0.484	0.530	0.784	0.419	0.352	0.374
X24	0.371	0.524	0.805	0.398	0.469	0.234
X32	0.324	0.459	0.477	0.343	0.747	0.288
X33	0.265	0.379	0.397	0.304	0.785	0.197
X34	0.221	0.247	0.329	0.197	0.659	0.077
X35	0.299	0.369	0.414	0.332	0.804	0.204
X36	0.312	0.471	0.472	0.536	0.867	0.439
X37	0.339	0.486	0.498	0.558	0.872	0.455

Indicators List	FA (X4)	FM (Z)	FI (X2)	FL (X1)	LoC (X3)	MSMEs Performance(Y)
X41	0.770	0.401	0.353	0.194	0.210	0.195
X43	0.595	0.387	0.435	0.269	0.246	0.185
X44	0.801	0.470	0.403	0.306	0.338	0.288
X46	0.822	0.458	0.422	0.337	0.321	0.309
Y1	0.290	0.516	0.325	0.607	0.335	0.946
Y2	0.311	0.535	0.334	0.625	0.349	0.952
Y3	0.344	0.548	0.339	0.557	0.357	0.914
Y4	0.164	0.359	0.251	0.458	0.274	0.757
Y5	0.334	0.550	0.398	0.635	0.365	0.893
Z3	0.381	0.726	0.476	0.328	0.433	0.258
Z4	0.502	0.775	0.580	0.310	0.399	0.346
Z5	0.414	0.746	0.503	0.315	0.394	0.289
Z6	0.375	0.677	0.357	0.549	0.319	0.674

Source: Data processed with SmartPLS 4.0 (2024)

The results satisfy the criterion for discriminant validity, where each indicator's loading on its associated construct is greater than its cross-loadings on other constructs. The loading value for each indicator is consistently higher for its respective variable compared to the loadings on other variables within the same column.

Fornell Larcker Test Result

Table 6. Fornell Larcker Test Result

Variable	FA (X4)	FM (Z)	FI (X2)	FL (X1)	LoC (X3)	MSMEs Performance(Y)
FA (X4)	0.753					
FM (Z)	0.573	0.732				
Financial Inclusion (X2)	0.536	0.649	0.743			
Financial Literacy (X1)	0.372	0.532	0.530	0.713		
LoC (X3)	0.376	0.522	0.553	0.501	0.792	
MSMEs Performance (Y)	0.330	0.568	0.372	0.648	0.378	0.895

Source: Data processed with SmartPLS 4.0 (2024)

Table 6 presents the results of the Fornell-Larcker Criterion, which assesses discriminant validity among all latent constructs in the model. According to Fornell and Larcker (1981), discriminant validity is established when the square root of the AVE for each construct is greater than its correlations with any other construct in the model. However, in this case, the square root values of AVE for several constructs appear to be lower than the inter-construct correlations. Ideally, higher AVE square root values compared to cross-construct correlations would confirm strong discriminant validity. Despite this, the table indicates that the indicator loadings for each construct remain higher than the loadings on other constructs, suggesting that the discriminant validity of the indicators remains acceptable.

HTMT Test Result

Table 7. HTMT Test Result

Variable	FA (X4)	FM (Z)	FI (X2)	FL (X1)	LoC (X3)	MSMEs Performance(Y)
FA (X4)						
FM (Z)	0.786					
Financial Inclusion (X2)	0.733	0.880				
Financial Literacy (X1)	0.436	0.651	0.643			
LoC (X3)	0.456	0.646	0.681	0.554		
MSMEs Performance(Y)	0.384	0.644	0.440	0.827	0.383	

Source: Data processed with SmartPLS 4.0 (2024)

According to Dijkstara and Henseler (2015), in order to guarantee discriminant validity between the two reflective constructs. the HTMT value for the Heterotrait-Monotrait Ratio measurement must be less than 0.90. Strong discriminant validity is demonstrated by HTMT ratio values less than 0.90 (<0.90). It also says that every individual is special and distinct from the others.

Composite Validity and Reliability

To determine the reliability of the constructs employed in this study, both construct reliability and validity assessments were conducted. Reliability testing was carried out using Cronbach's Alpha and Composite Reliability values. The results of the reliability analysis are presented as follows.

Table 8. Composite Validity and Reliability

Variable	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Rule of Thumb	Result
FA (X4)	0.737	0.748	0.837	>0.70	Reliable
FM (Z)	0.714	0.712	0.822		Reliable
Financial Inclusion (X2)	0.727	0.739	0.830		Reliable
Financial Literacy (X1)	0.703	0.700	0.805		Reliable
LoC (X3)	0.881	0.899	0.909		Reliable
MSMEs Performance (Y)	0.937	0.951	0.953		Reliable

Source: Data processed with SmartPLS 4.0 (2024)

Based on the results listed in Table 8, all indicators on the workload-stress variable have a Cronbach alpha value above 0.70. So that the all variable has can be stated as reliable to form a model of this research.

Inner Model Analysis

To evaluate the relationships between constructs, along with their significance levels and the R-square values of the research model, the structural model—also referred to as the inner model—is analyzed. The assessment involves examining the R-square values of the dependent constructs, as well as the *t*-statistics and significance levels of the structural path coefficients, to determine the strength and significance of the hypothesized relationships.

Determination Coefficients

Table 9. Determination Coefficients Test Result

Variable	R-square	R-square adjusted
FM (Z)	0.543	0.537
MSMEs Performance(Y)	0.323	0.320

Source: Data processed with SmartPLS 4.0 (2024)

Based on the results presented in Table 9, two R-squared values are identified: one for the intervening variable, financial management (Z), and another for the dependent variable, MSMEs Performance (Y). This test aims to measure the extent to which the independent variables influence these two variables in the research model. The results show that the independent variables—Financial Literacy (X1), Financial Inclusion (X2), Locus of Control (X3), and Financial Attitude (X4)—explain 53.70% of the variance in the intervening variable, financial management (Z), with the remaining 47.30% explained by other factors not included in the research model. For the dependent variable, MSMEs Performance (Y), the independent variables explain 32% of the variance, while the remaining 68% is influenced by other factors or variables not included in the model.

Goodness of Fit

To assess the predictive capability and practical applicability of the research model—commonly referred to as the *Goodness of Fit*—the Q^2 (predictive relevance) statistic can be used. In this study, the Q^2 value is calculated using the following formula.

$$Q^2 = 1 - (1 - R12)\ (1 - R22)$$

$$Q^2 = 1 - (1 - 0.537)\ (1 - 0.320)$$

$$Q^2 = 1 - (0.463)\ (0.680)$$

$$Q^2 = 1 - (0.314)$$

$$Q^2 = 0.6860 \rightarrow 68.60\ \%$$

Based on the Goodness of Fit (Q^2) calculation. the value of Q^2 is 0.6860 or 68.60% where the model can explain the relationship between variables.

Hypotheses Testing

The importance of the derived parameters provides important information about the relationship between the research variables. The value of the output path coefficient forms the basis for assessing the hypothesis.

Table 10. Hypotheses Testing Result

Variable	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
Financial Literacy => Financial Management	0.184	0.185	0.057	3.223	0.001
Financial Inclusion => Financial Management	0.321	0.323	0.063	5.130	0.000
Locus of Control => Financial Management	0.149	0.151	0.056	2.657	0.008
Financial Attitude => Financial Management	0.277	0.276	0.058	4.792	0.000
Financial Management => MSMEs Performance(Y)	0.568	0.569	0.039	14.593	0.000

Source: Data processed with SmartPLS 4.0 (2024)

Based on the data processing prerequisites for completing research using the SEM method, specifically the outer and inner models, the researcher will explain the hypothesis results, which serve as preliminary answers to the questionnaire results distributed in this study. The following are the hypothesis test results:

1) The findings demonstrate that Financial Literacy (X_1) exerts a statistically significant influence on Financial Management (Z), evidenced by a p-value of 0.001, which is well below the conventional alpha level of 0.05. This significance is further supported by a t-statistic of 3.223, indicating a robust and positive correlation between the two constructs. From an applied perspective, a one-unit increase in financial literacy is associated with a 3.223-unit enhancement in the financial management capabilities of MSME practitioners. Therefore, Hypothesis H_1 is substantiated.

2) Financial Inclusion variable (X_2) exhibits a statistically significant and positive impact on Financial Management, as evidenced by a p-value of 0.000, which is considerably below the 0.05 significance threshold. This empirical evidence suggests that for every one-unit increase in financial inclusion,

there is a corresponding 5.130-unit improvement in MSMEs' financial performance. These outcomes offer strong empirical validation for Hypothesis H_2.

3) Locus of Control variable (X_3) exerts a statistically significant effect on Financial Management (Z), demonstrated by a p-value of 0.008, which is well below the standard 0.05 threshold. This relationship is further substantiated by a t-statistic of 2.657, indicating a meaningful and positive influence. The findings imply that a one-unit increase in locus of control corresponds to a 2.657-unit improvement in the financial management practices of MSME operators. Based on this evidence, Hypothesis H_3 is accepted.

4) The results of hypothesis testing reveal that the Financial Attitude variable (X_4) significantly and positively influences Financial Management (Z), as indicated by a p-value of 0.000, which is substantially below the 0.05 level of significance. This effect is further confirmed by a t-statistic of 4.792, suggesting a robust association between the two variables. The analysis suggests that for every one-unit increase in financial attitude, there is a corresponding 4.792-unit improvement in the financial management capabilities of MSME actors. Accordingly, Hypothesis H_4 is supported.

5) The hypothesis test results confirm that Financial Management (Z) significantly and positively affects MSME Performance (Y). This is evidenced by a p-value of 0.000, indicating statistical significance at the 5% level. The strength of this relationship is further reinforced by a substantial t-statistic, validating the reliability of the finding. Specifically, the data suggest that a one-unit enhancement in financial management is associated with a 14.593-unit increase in MSME performance. Based on these results, Hypothesis H_5 is accepted.

DISCUSSION

This study confirms that financial literacy plays a fundamental role in shaping effective financial management among MSME owners. Individuals with higher financial literacy demonstrate greater capacity to organize their finances, optimize time, increase earnings, and enhance overall quality of life. For MSMEs, improved financial literacy translates into heightened financial accountability, credibility, and transparency, reflected in consistent transaction recording on daily, weekly, monthly, and annual bases. These findings are consistent with prior research by Fadila and Purnawati (2023) and Kusumaningrum and Maulida (2023), which highlight the positive influence of financial literacy on business outcomes.

Financial inclusion was also found to exert a significant and positive impact on financial management. Defined as access to a diverse range of financial services, products, and institutions tailored to individual or organizational needs, financial inclusion plays a pivotal role in strengthening the economic welfare of MSMEs. In practice, financial inclusion facilitates access to capital and essential financial tools that support daily operations and enable business expansion. This finding aligns with the work of Anwar et al. (2022) and Yunita, Nurhajati, and Khalikussabir (2024), which emphasize that enhanced financial inclusion improves MSMEs' capacity to secure funding and capitalize on growth opportunities.

The analysis further demonstrates that locus of control significantly influences financial management behavior. Entrepreneurs with a strong internal locus of control exhibit greater confidence in their ability to improve business performance through effective financial practices and governance (Sheda, 2023). This observation resonates with the findings of Astuti and Soleha (2023), who note that MSME owners in the Jabodetabek area with an internal locus of control are more likely to engage in proactive resource management and operational decision-making. Such individuals believe that business outcomes are shaped primarily by their own efforts rather than external circumstances, fostering stronger financial stewardship.

In addition, the study confirms that financial attitude significantly affects financial management practices. Financial attitude, understood as the internalization of financial values and principles, shapes how entrepreneurs approach both personal and business finances. One persistent challenge among MSME owners is the lack of structured financial recordkeeping and the frequent merging of personal and business expenditures. Cultivating a responsible and disciplined financial mindset is therefore essential to reduce the risk of financial mismanagement. These findings align with those of Setiawan and Nengah (2022), who report a positive correlation between sound financial attitudes and effective financial management behavior.

Finally, the results demonstrate that financial management has a direct and significant influence on MSME performance. Robust financial management practices—such as disciplined budgeting, systematic savings planning, and the practical application of financial knowledge—contribute to stronger business outcomes by promoting financial discipline and professionalism. These practices are critical for ensuring the sustainability and long-term success of MSMEs. This conclusion is supported by Suindari and Juniariani (2020), who emphasize the role of financial management in achieving overall business success and is consistent with Wahyudiati's (2017) findings that improvements in financial management are directly associated with enhanced MSME performance.

CONCLUSION

This study examined the financial dynamics of MSMEs in the Jabodetabek region, focusing on the effects of financial literacy, financial inclusion, locus of control, and financial attitude on financial management and, ultimately, on MSME performance. The findings demonstrate that financial literacy has a significant and positive influence on how MSME operators manage their finances, leading to more structured budgeting, savings, and expense tracking. Financial inclusion also exerts a notable impact by improving access to financial products and services, which supports daily business operations and fosters opportunities for expansion.

Moreover, locus of control was found to play a critical role, with entrepreneurs who possess a strong internal locus demonstrating greater confidence and proactive behavior in managing their financial affairs. Financial attitude likewise emerged as an important determinant, as positive financial dispositions contribute to disciplined money management practices that help safeguard business stability. Collectively, these factors underscore the pivotal role of financial management in shaping MSME performance, confirming that sound financial practices are central to business success.

MSMEs continue to serve as vital drivers of Indonesia's economy by fostering entrepreneurship and generating employment. However, many of these enterprises remain vulnerable to bankruptcy due to ineffective and inefficient financial management. This research highlights the importance of strengthening both the financial competencies and psychological orientations of MSME operators as a means of enhancing business resilience and sustainability.

Notably, the study's R-squared values for the mediating and dependent variables were below 50%, indicating that the current set of independent variables does not fully account for the variation in MSME performance. This suggests that additional factors—such as market access, innovation capability, government policy, or digital literacy—may also play significant roles. Future research is therefore recommended to incorporate additional independent or intervening variables to improve explanatory power and yield more comprehensive insights into the determinants of MSME success in Jabodetabek.

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