The Effect of Financial Literacy and Financial Planning on the Financial Control Ability of MSMEs

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A B S T R A C T

Financial control is a critical managerial function for MSME sustainability because it enables owners to compare actual outcomes with plans, identify deviations, and take corrective action. This study examines the associations of financial literacy and financial planning ability with financial control ability among MSMEs. A cross-sectional quantitative survey was conducted using purposive sampling of 91 MSME owners or managers who completed 24 five-point Likert items. Variable scores were calculated as item means and analyzed using multiple linear regression, supported by reliability assessment, residual diagnostics, and HC3 robust standard errors. Mean scores for financial literacy, financial planning, and financial control were 4.615, 3.892, and 4.369, respectively. Financial literacy (B=0.332; β=0.331; $p<0.001$) and financial planning (B=0.317; β=0.655; $p<0.001$) were positively associated with financial control. The model was significant, $F(2,88)=136.829$; $p<0.001$, with $R^2=75.67\%$. However, financial control reliability was low ($\alpha=0.424$), and residuals were non-normal. The findings suggest that financial planning has a stronger standardized association with financial control than financial literacy, although interpretation should remain exploratory because of measurement-quality limitations and the observational design.

INTRODUCTION

Micro, small, and medium enterprises (MSMEs) play an important role in economic development, yet they frequently encounter financial management challenges arising from limited resources, operational uncertainty, and increasing business complexity. Managing cash flows, financing decisions, working capital, inventory, and investment activities requires business owners to make informed and timely financial decisions. These challenges become particularly significant in MSMEs, where owners frequently assume multiple managerial responsibilities, including financial planning, accounting, and operational supervision. Consequently, the effectiveness of financial management depends not only on the availability of financial resources but also on the ability of business owners to understand, interpret, and utilize financial information. (Eniola & Entebang, 2017) emphasize that financial knowledge, awareness, and attitudes constitute essential components of financial literacy among business owners and managers. Financial literacy can therefore be understood as a fundamental managerial resource that supports informed decision-making and helps MSMEs respond to financial uncertainty.

The importance of financial literacy becomes more apparent when financial management is viewed as an integrated managerial process rather than a collection of separate financial activities. Decisions regarding inventory purchases influence liquidity, financing arrangements affect repayment obligations, and investment choices determine the availability of working capital for daily operations. These interrelated decisions require systematic financial planning, appropriate resource allocation, and continuous monitoring of financial outcomes.(Mulyani et al., 2025) explain that effective business financial management incorporates financial planning, budgeting, financial statement analysis, investment decisions, and financing strategies to support business continuity and growth. Similarly, (Brigham & Houston, 2022) identify planning, budgeting, and working-capital management as essential elements of financial decision-making. These perspectives indicate that sustainable financial management requires MSME owners to translate financial knowledge into structured managerial

activities. Accordingly, financial literacy should be examined alongside the practical capabilities that enable business owners to plan and control their financial resources.

Although financial literacy provides an important foundation for financial decision-making, financial knowledge alone does not necessarily ensure effective financial management. Business owners may understand basic financial concepts without consistently preparing budgets, establishing spending limits, forecasting cash flows, or evaluating financial performance. This distinction highlights the importance of financial planning ability as a managerial capability that connects financial understanding with operational implementation. Financial planning enables business owners to establish financial objectives, estimate future financial requirements, allocate available resources, and anticipate potential financial constraints. Financial control, in contrast, involves monitoring financial activities, comparing actual outcomes with predetermined plans, identifying deviations, and implementing corrective measures. Thus, financial planning and financial control represent complementary but conceptually distinct managerial functions. Understanding their relationship is particularly important for MSMEs because limited financial reserves can increase their vulnerability to unexpected expenditures, delayed payments, and liquidity constraints.

The relationship between financial literacy, financial planning ability, and financial control ability can be understood through a sequential perspective on financial management capabilities. Financial literacy provides the cognitive foundation for recognizing financial risks, evaluating financing alternatives, understanding liquidity conditions, and interpreting financial information. Financial planning ability subsequently transforms this knowledge into operational financial objectives, expenditure priorities, budgets, and cash-flow projections. Financial control ability enables business owners to evaluate financial outcomes against established plans and determine whether adjustments are necessary. This sequence suggests that financial knowledge becomes managerially meaningful when it is translated into systematic planning and monitoring practices. Nevertheless, these capabilities should remain analytically distinct because possessing financial knowledge does not automatically imply the ability to develop financial plans, and preparing financial plans does not necessarily guarantee effective financial control. Examining the relationships among these capabilities may therefore provide a more comprehensive understanding of financial management practices among MSMEs.

Previous empirical research supports the importance of financial literacy in improving various aspects of MSME management. (Ye & Kulathunga, 2019) demonstrate that financial literacy is associated with MSME sustainability through access to financing and attitudes toward financial risk. Similarly, (Engström & McKelvie, 2017) report an association between financial literacy and the financial performance of micro-enterprises, although the relationship does not consistently extend to all indicators of business growth. These findings suggest that the contribution of financial literacy may vary according to the specific financial or managerial outcome being examined. Financial education research further indicates that improvements in financial knowledge can influence subsequent financial behavior (Kaiser et al., 2022). However, improvements in knowledge and behavior do not necessarily establish whether business owners possess the practical capability to monitor financial activities, detect deviations, and implement corrective actions. Therefore, examining financial control ability as a distinct managerial outcome may help clarify the practical relevance of financial literacy within MSME operations.

The relevance of these capabilities has become increasingly pronounced as MSMEs face technological changes and growing expectations for operational efficiency. Digital financial applications and artificial intelligence (AI) offer potential opportunities to improve financial information processing, support managerial decisions, and strengthen business operations. (Lajaria et al., 2026) examine the relationship between AI utilization and financial management optimization among startups and innovative ventures in Kendari, highlighting the growing relevance of technological capabilities in local business financial management. Similarly, (Imran et al., 2026) investigate the potential contribution of AI to the sustainable productivity of MSMEs in Kendari from green economy and social impact perspectives. Although these studies focus on technology-related dimensions of business development, they provide a relevant context for understanding the increasing complexity of managerial capabilities required by contemporary enterprises. However, technological advancement does not eliminate the importance of fundamental financial capabilities. Business owners must still understand financial information, establish realistic plans, and evaluate financial outcomes to make appropriate managerial decisions. Consequently, financial literacy, planning ability, and

control ability remain important areas of investigation, particularly among MSMEs operating with constrained resources.

Beyond technological adaptation, MSMEs must also develop practical mechanisms for implementing managerial improvements within their operational limitations. (Lajaria et al., 2025) identify high implementation costs and limited resources as important challenges in translating sustainable business innovations into practical activities. Their study highlights prototyping and small-scale pilot implementation as approaches for bridging the gap between innovative ideas and business practices. (Manan et al., 2023) employed the Decision-Making Trial and Evaluation Laboratory (DEMATEL) method to examine the factors influencing green business process management among MSMEs in Kendari City. Their findings identified green attitudes as a particularly influential factor, highlighting the importance of managerial awareness and behavior in implementing sustainable business practices. Although this research addresses sustainable business innovation rather than financial control directly, its emphasis on practical implementation provides a useful perspective for understanding MSME managerial challenges. In financial management, similar implementation difficulties may arise when business owners possess financial knowledge but lack the capability to establish budgeting routines, monitor expenditures, or evaluate financial performance consistently. These considerations reinforce the need to investigate whether financial planning ability, alongside financial literacy, is associated with stronger financial control ability in MSMEs.

Empirical studies conducted in Indonesia have provided additional evidence regarding the relationships among financial literacy, financial planning, and financial management practices. (Larasaty et al., 2021) report positive relationships between financial knowledge, financial planning, and MSME financial management behavior. Meanwhile, (Ruscitasari et al., 2022) examine relationships involving financial literacy, financial planning and control, and the mediating role of proactive employees. Collectively, these studies contribute to understanding how financial competencies and organizational practices relate to MSME financial management. Nevertheless, existing research has frequently emphasized broader outcomes, including financial management behavior, business performance, and organizational factors. Comparatively less attention has been directed toward financial control ability as a specific managerial capability encompassing the monitoring of financial activities, evaluation of deviations from financial plans, and implementation of corrective actions. This distinction is important because broader financial management measures may not adequately capture the specific capability of business owners to control financial resources during routine operations.

The need for a more focused investigation is further supported by the diversity of MSMEs in Indonesia, particularly in terms of business sectors, managerial experience, financial practices, and levels of formalization. Financial knowledge may produce different managerial outcomes depending on whether business owners consistently apply planning and monitoring procedures. For example, an owner who understands liquidity management but does not prepare cash-flow projections may experience difficulties anticipating short-term financial obligations. Likewise, a business owner who prepares a financial budget without regularly reviewing actual expenditure may be unable to identify financial deviations or implement timely corrective actions. These examples illustrate that financial literacy and financial planning ability may contribute different types of information when explaining financial control ability. Accordingly, examining their partial and simultaneous associations may provide a clearer understanding of how knowledge-based and planning-related capabilities relate to financial control practices among MSMEs.

In addition to the empirical gap, research on MSME financial literacy continues to face conceptual and methodological challenges. (Molina-García et al., 2023) indicate that financial literacy research among MSMEs encompasses diverse themes, including business performance, access to financing, financial risk, innovation, and owner-manager characteristics. (Graña-Alvarez et al., 2024) likewise emphasize the importance of conceptual clarity and consistent measurement in improving the comparability and interpretation of financial literacy research. These concerns are particularly relevant when financial literacy, financial planning, and financial control are examined as separate variables. Without clear conceptual distinctions, these constructs may overlap, making it difficult to determine whether observed statistical relationships reflect genuinely different managerial capabilities. Therefore, this study distinguishes financial literacy as a knowledge-related resource, financial planning ability as a forward-looking managerial capability, and financial control ability as a monitoring and corrective managerial capability.

Another methodological consideration involves the interpretation of self-reported financial capabilities. Questionnaire-based measures using Likert scales capture respondents' perceptions of their knowledge, practices, and abilities rather than independently verified financial performance. Consequently, higher scores may indicate stronger perceived capabilities but do not necessarily demonstrate the objective accuracy of accounting records, the effectiveness of financial budgets, or improvements in business profitability. This distinction reinforces the importance of evaluating instrument quality and interpreting empirical findings according to the limitations of the measurement approach. Consistent with the measurement concerns discussed by (Molina-García et al., 2023) and (Graña-Alvarez et al., 2024), the present study emphasizes conceptual differentiation and appropriate statistical assessment. Financial literacy and financial planning ability are therefore examined as explanatory variables associated with respondents' reported financial control ability, without assuming that their observed relationships establish causal effects.

Based on these theoretical and empirical considerations, this study aims to examine the partial and simultaneous associations of financial literacy and financial planning ability with the financial control ability of MSMEs. Specifically, the study investigates whether financial literacy and financial planning ability are individually associated with financial control ability and whether both variables jointly explain variation in the dependent variable. Using data collected from 91 respondents, the study employs multiple linear regression supported by instrument-quality assessments and regression diagnostics. In addition to conventional ordinary least squares estimation, the analysis incorporates residual diagnostics and heteroskedasticity-consistent HC3 robust standard errors to strengthen the assessment of statistical inference. These procedures are intended to improve the transparency of the analysis while acknowledging the limitations associated with a cross-sectional, non-probability research design.

This study contributes to the MSME financial management literature in three principal ways. First, it establishes a clearer conceptual distinction among financial literacy, financial planning ability, and financial control ability, treating them as interrelated but separate managerial capabilities. Second, it extends previous empirical discussions by positioning financial control ability as a specific dependent variable rather than incorporating it into broader financial management outcomes. Third, it applies instrument-quality evaluation and complementary regression diagnostics to support a more cautious interpretation of the observed statistical relationships. By examining financial literacy and financial planning ability simultaneously, the study seeks to clarify whether each capability provides distinct explanatory information about MSME financial control ability. Ultimately, the findings are expected to contribute to a more focused understanding of how financial knowledge and planning capabilities are associated with the monitoring, evaluation, and adjustment of financial activities among MSMEs, while providing a relevant foundation for future research on practical financial management capabilities.

METHODS

The study used a non-experimental quantitative approach with a cross-sectional survey design. The unit of analysis consisted of MSME owners or managers who had operated their businesses for at least 12 months and were willing to complete the questionnaire in full. Respondents were selected purposively according to these criteria. Because the sampling frame and the probability of selection for each unit were not documented, the sample should be treated as a non-probability sample and the findings should not be generalized statistically to all MSMEs (Creswell & Creswell, 2023); (Saunders et al., 2023).

A cross-sectional design is suitable for examining whether differences in the measured variables occur together at a particular point in time, but it does not establish temporal ordering (Creswell & Creswell, 2023). Financial literacy and planning are treated as predictors in the regression because this ordering is consistent with the conceptual framework of the study; however, the design cannot demonstrate that changes in those variables occurred before changes in financial control. It is also possible that owners who already practice stronger financial control become more attentive to financial information and planning. For that reason, the regression model is interpreted as an associational model (Wooldridge, 2020). The use of a single survey also means that all constructs are observed through the same data-collection method, which should be considered when evaluating the strength of the relationships (Saunders et al., 2023).

The source manuscript specified a conceptual population of 1,000 MSME units. Sample-size calculation using the formula $n=N/(1+Ne^2)$ with a 10% margin of error produced 90.91, which was

rounded to 91 respondents. This figure was retained as the basis for planning the number of respondents, but it does not convert purposive sampling into probability sampling. Therefore, the margin-of-error interpretation attached to the formula should not be used as a formal sampling-error estimate (Saunders et al., 2023).

The purposive sampling criteria were established to ensure that respondents had sufficient experience in managing routine financial activities within their businesses. Specifically, respondents were required to have operated their businesses for at least 12 months to ensure their familiarity with financial management practices. Nevertheless, purposive sampling may introduce selection bias, as accessible and willing participants may differ from other MSME owners or managers who were not included in the study (Saunders et al., 2023). Therefore, the sample-size calculation was used solely as a reference for determining the number of respondents rather than as a basis for probability-based statistical generalization. Furthermore, respondents' characteristics, including gender, educational background, and type of business, were presented exclusively to describe the composition of the sample and provide contextual information about the participating MSMEs. These characteristics were not incorporated as moderating or control variables in the regression model. Accordingly, no conclusions were drawn regarding their potential influence on the relationships between financial literacy, financial planning ability, and financial control ability. The interpretation of the findings was therefore limited to the observed associations among the primary research variables within the surveyed sample (Creswell & Creswell, 2023); (Wooldridge, 2020).

The research instrument consisted of three constructs. Financial literacy (X1) was measured using 10 items, financial planning ability (X2) using seven items, and financial control ability (Y) using seven items. Each item used a 1–5 Likert scale and all statements were positively worded, so higher scores indicated higher self-assessed ability. Variable scores were calculated as the mean of the items in each construct to maintain the original 1–5 scale and facilitate interpretation of the regression coefficients (Field, 2018).

Using the mean of the items rather than the sum keeps each construct on the original 1–5 response scale. This makes the estimated regression coefficients easier to explain because a one-unit change corresponds to one point on the underlying Likert scale. The scoring procedure also ensures that constructs measured with different numbers of items remain comparable in scale (Field, 2018). Because all items were positively worded, no reverse coding was required. At the same time, uniformly positive wording can increase the possibility of acquiescence or high-end response concentration, so the descriptive distribution and item-level consistency were examined rather than assuming that all items functioned equally well (Saunders et al., 2023). The instrument should therefore be understood as measuring self-assessed financial capability across the three domains rather than objective test performance.

The use of composite mean scores also reflects the analytical purpose of the study. The regression is intended to examine relationships among broader capabilities rather than the effect of any single questionnaire statement. Aggregating items can reduce the influence of idiosyncratic responses to individual questions when the items function consistently as a scale. At the same time, aggregation can conceal weaknesses when some items are only weakly related to the others (Hair et al., 2019). This is why the reliability and corrected item-total analyses are reported alongside the regression results. The scoring strategy and the measurement-quality assessment should therefore be viewed as complementary steps: the first produces interpretable construct scores, while the second evaluates how confidently those scores can be treated as representations of financial literacy, planning, and control. This distinction is especially important for the financial-control scale, where the low alpha indicates that the composite score should be interpreted cautiously despite its convenient 1–5 metric (Field, 2018); (Hair et al., 2019).

Measurement quality was analyzed before interpreting the regression model. The assessment included Pearson item-total correlations, corrected item-total correlations, and Cronbach's alpha. With n=91, the two-tailed critical r value at the 5% level with df=89 is approximately 0.206. A corrected item-total correlation of 0.30 was also used as a practical guideline for evaluating item consistency. Reliability was interpreted cautiously, with particular attention to constructs whose alpha values were below commonly used thresholds (Field, 2018); (Hair et al., 2019).

Reliability and item-total analysis were included because regression coefficients are meaningful only to the extent that the variable scores represent reasonably coherent constructs. Cronbach's alpha summarizes the internal consistency of a set of items, but it is not a complete measure of validity and should not be treated as an automatic pass-or-fail criterion. (McNeish, 2018)

emphasizes the limitations of relying on alpha without considering the assumptions and structure of a scale. For that reason, the study also examined corrected item-total correlations and interpreted low alpha values as a warning requiring caution rather than as a mechanical reason to discard the entire analysis. This approach is consistent with the exploratory orientation of the study (Field, 2018); (Hair et al., 2019).

Hypothesis testing used ordinary least squares with the model $Y=a+b1X1+b2X2+\varepsilon$. Model diagnostics included tolerance and variance inflation factor (VIF) to assess multicollinearity, Shapiro–Wilk for residual normality, and Breusch–Pagan and Glejser regression for indications of heteroskedasticity. Because the residuals were not normally distributed, HC3 robust standard errors were also reported as a sensitivity check for statistical inference. All tests used a significance level of 5% (Field, 2018); (Wooldridge, 2020).

The diagnostic sequence was intended to distinguish problems that affect coefficient estimation from those that primarily affect statistical inference. Tolerance and VIF were used to assess whether the two predictors contained enough unique information to be estimated together. Residual normality was examined because conventional small-sample t and F inference relies on distributional assumptions, while heteroskedasticity tests assessed whether residual variance changed systematically across observations (Field, 2018); (Wooldridge, 2020). HC3 robust standard errors were reported because this estimator provides a heteroskedasticity-consistent variance estimate with a finite-sample adjustment. The robust analysis does not alter the estimated OLS coefficients; instead, it provides a sensitivity check on their statistical significance. This distinction allows the substantive interpretation of the coefficients to remain tied to the original regression model while the inferential uncertainty is evaluated more cautiously (Wooldridge, 2020).

RESULTS AND DISCUSSION

Respondent Characteristics and Data Profile

The respondent composition was relatively balanced by gender, comprising 46 women (50.55%) and 45 men (49.45%). Respondents' education was dominated by senior high school/vocational high school graduates, with 38 respondents (41.76%), followed by bachelor's degree holders with 29 respondents (31.87%), diploma holders with 15 respondents (16.48%), and master's degree holders with nine respondents (9.89%). In terms of business type, construction and culinary businesses accounted for the largest proportions, as shown in Table 1.

The respondent characteristics provide a descriptive overview of the 91 MSME owners or managers participating in this study. The distributions of gender, educational background, and business type illustrate the composition and diversity of the surveyed sample. However, these characteristics were not included as explanatory, control, or moderating variables in the regression model. Therefore, the study does not assess whether the relationships between financial literacy, financial planning ability, and financial control ability differ across demographic groups or business sectors. The respondent characteristics are consequently interpreted solely as contextual information and should not be used to infer differences in financial control ability or variations in the relationships among the research variables.

Table 1. Distribution of Business Types

Business type	Number	Percentage (%)
Construction	26	28.57
Culinary	24	26.37
Services	15	16.48
Fashion	11	12.09
Supermarket	9	9.89
Basic necessities retail	6	6.59
Total	91	100.00

Source: Data processed, 2026

Descriptive Statistics and Instrument Quality

Descriptive statistics show that the financial literacy and financial control scores were in the very high category, while financial planning was in the high category. The mean financial literacy score of 4.615 with a standard deviation of 0.169 indicates a high level of self-assessment and relatively limited variation among respondents. Financial planning had a mean of 3.892 with a standard deviation of 0.349, while financial control had a mean of 4.369 with a standard deviation of 0.169.

The relatively high means should be read together with the narrow standard deviations. Financial literacy and financial control both had a standard deviation of 0.169, indicating that respondents' average scores were clustered within a comparatively small portion of the 1–5 scale. This concentration may reflect genuinely high perceived capability among participating MSME actors, but it can also reduce observable variation and make the analysis sensitive to small score differences. Financial planning displayed greater dispersion, with a standard deviation of 0.349, suggesting that respondents differed more noticeably in their planning practices than in their self-assessed literacy or control. The wider variation in planning may partly explain why its standardized regression coefficient is larger, because standardized coefficients reflect both the estimated slope and the variation present in each variable.

Table 2. Score Description and Reliability

Variable	Mean	SD	Minimum	Maximum	Alpha
Financial literacy	4.615	0.169	4.200	4.800	0.671
Financial planning	3.892	0.349	3.429	4.286	0.866
Financial control	4.369	0.169	4.000	4.714	0.424

Source: Data processed, 2026

The reliability results show differences in quality across variables. Financial planning had a Cronbach's alpha of 0.866, indicating good internal consistency. Financial literacy had an alpha of 0.671, which may still be acceptable in an exploratory context but is below the commonly used benchmark of 0.70. Financial control had a substantially lower alpha of 0.424, indicating weak internal consistency and requiring caution in interpreting the regression results involving this variable.

The contrast among alpha coefficients is substantively important. Financial planning appears to be the most internally coherent scale, so differences in its mean score can be interpreted with greater confidence as reflecting a common underlying capability. Financial literacy is less consistent but still provides usable exploratory information. Financial control is more problematic because an alpha of 0.424 suggests that the seven items do not move together strongly as a single scale. This could occur if the items represent several different aspects of control, if respondents interpret certain statements differently, or if limited response variability weakens inter-item correlations. The study does not have sufficient evidence to determine which explanation is correct. Therefore, the regression involving financial control is retained for exploratory analysis, while the measurement limitation is made explicit throughout the interpretation.

At the item level, six of the 10 financial-literacy items, six of the seven financial-planning items, and three of the seven financial-control items met the initial item-total correlation criterion using the critical r value of 0.206 and $p<0.05$. When the corrected item-total correlation guideline of ≥ 0.30 was applied, only some items met the criterion. These results indicate that several items may not measure their respective constructs consistently, especially within the financial-control scale.

Item-level evidence reinforces the need for this cautious approach. An item-total correlation indicates whether responses to a particular item are consistent with the overall score formed by the remaining items. When several items fall below practical guidelines, the total score may combine behaviors that are not equally representative of the intended construct. Future revisions of the instrument should therefore examine the wording and content coverage of the weaker items rather than simply removing them automatically. A stronger instrument would ideally be developed through content review, pilot testing, and factor-based assessment before being used for confirmatory inference. In the current study, the item analysis serves primarily as a transparency mechanism: it shows that statistical significance in the regression should not be separated from the quality of the measures that enter the model.

Regression Model Diagnostics

Model diagnostics showed no indication of high multicollinearity. The VIF for both predictors was 1.343 and tolerance was 0.745, indicating that sufficient unique variation remained for each predictor to be estimated simultaneously. The Breusch–Pagan test and Glejser regressions were not significant at the 5% level, so the data did not provide strong evidence of heteroskedasticity. However, the Shapiro–Wilk test was significant ($W=0.759$; $p<0.001$), indicating that the residuals were not normally distributed.

The VIF and tolerance results are reassuring because they show that financial literacy and financial planning, although conceptually related, are not redundant in the regression model. A VIF of 1.343 is far below levels commonly associated with severe multicollinearity, while tolerance of 0.745 indicates that each predictor retains substantial variance that is not linearly explained by the other. This supports the decision to include both variables simultaneously and allows the coefficient for each predictor to be interpreted as its association with financial control while holding the other predictor constant. The result is also consistent with the conceptual distinction made earlier: knowing how to understand financial information is not the same as being able to translate that knowledge into a structured financial plan.

The residual diagnostics add a second layer to this interpretation. The non-significant Breusch–Pagan and Glejser results indicate that the study did not detect strong evidence that the residual variance changed systematically with the predictors. This reduces concern about one common source of inefficient conventional standard errors. The significant Shapiro–Wilk statistic, however, shows that the residual distribution is not normal. In samples of this size, non-normality does not automatically invalidate OLS coefficient estimates, but it does justify caution when relying exclusively on classical small-sample inference. Reporting HC3 robust standard errors is therefore an appropriate sensitivity step. Importantly, the robust results lead to the same substantive conclusion as the OLS results: both financial literacy and financial planning remain positively associated with financial control at conventional significance levels. The convergence of these inferential approaches supports the stability of the significance conclusion without implying that all assumptions or measurement concerns have been resolved.

Table 3. Regression Diagnostics

Diagnostic	Value	Interpretation
VIF X1 and X2	1.343	No indication of high multicollinearity
Tolerance X1 and X2	0.745	Above 0.10
Shapiro–Wilk residual	W=0.759; p<0.001	Residuals are non-normal
Breusch–Pagan	LM=2.635; p=0.268	Not significant at 5%
Glejser X1	p=0.591	Not significant at 5%
Glejser X2	p=0.470	Not significant at 5%

Source: Data processed, 2026

Hypothesis Testing and Model Strength

The estimated equation was $Y=1.605+0.332X1+0.317X2$. The financial-literacy coefficient of 0.332 indicates that, at the same level of financial planning, a one-point increase in the mean financial-literacy score was associated with a 0.332-point increase in the mean financial-control score. The financial-planning coefficient of 0.317 indicates that, at the same level of financial literacy, a one-point increase in the mean financial-planning score was associated with a 0.317-point increase in the mean financial-control score. Both coefficients were statistically significant at $p<0.001$.

The unstandardized coefficients are most useful for interpreting changes on the original 1–5 scale. Because each construct score is a mean, a one-point increase represents a substantial movement across the response scale. The coefficient of 0.332 for financial literacy therefore indicates a positive conditional association of meaningful practical size within the observed range, while the coefficient of 0.317 for financial planning indicates a similarly positive conditional slope. The intercept of 1.605 is

required mathematically to position the regression line, but it has limited direct substantive interpretation because scores of zero on the literacy and planning scales are outside the possible 1–5 range. Interpretation should therefore focus primarily on the predictor coefficients, their standardized forms, and the overall model fit.

Tabel 4. Regression Coefficients for Mean Scores

Variable	B	SE OLS	Beta	t OLS	p OLS	p HC3
Constant	1.605	0.245	—	6.546	<0.001	<0.001
Financial literacy	0.332	0.061	0.331	5.428	<0.001	<0.001
Financial planning	0.317	0.029	0.655	10.741	<0.001	<0.001

Source: Data processed, 2026

Simultaneously, the model was significant, $F(2,88)=136.829$; $p<0.001$. An R value of 0.870 indicates a strong multiple correlation between the model's predicted values and the financial-control score, while $R^2=0.756676$ indicates that 75.67% of the variation in financial-control scores in the sample was statistically explained by X1 and X2 in this model. This figure should be interpreted as explained variance within the sample rather than as a causal percentage or a measure of business success.

The simultaneous F test evaluates whether the model containing both predictors explains more variation in financial control than an intercept-only model. Its statistical significance supports the conclusion that financial literacy and financial planning, taken together, are associated with financial control scores in this sample. The high R^2 indicates that the fitted model corresponds closely with the observed variation, but high model fit should not be interpreted as proof that the specification is complete. Cross-sectional survey models can produce strong associations when variables share conceptual content, are reported by the same respondent, or omit other relevant influences. Potentially relevant factors such as business size, age of the enterprise, bookkeeping quality, access to professional financial advice, digital financial practices, or external financing conditions were not included in the reported model and therefore remain outside the explanatory scope of the analysis.

The significance of both predictors under HC3 robust inference further indicates that the substantive conclusion is not dependent only on the conventional OLS standard errors. This is useful because the residual normality test was significant, suggesting that the shape of the residual distribution departs from normality. Robust standard errors do not correct every possible problem in the data, and they do not solve measurement limitations or sampling bias, but they provide an additional check on whether the estimated relationships remain statistically distinguishable from zero when the standard-error calculation is made less sensitive to heteroskedasticity and influential observations. In the present model, the p-values remain below 0.001 for both predictors. The consistency between conventional and robust inference strengthens confidence in the direction of the observed associations while still leaving the size and generalizability of those associations subject to the study's broader limitations.

Although the unstandardized coefficient for financial literacy (B=0.332) was slightly larger than that for planning (B=0.317), the relative strength of the variables is more appropriately compared using standardized beta coefficients. The beta for financial planning was 0.655, almost twice the beta for financial literacy of 0.331. This finding indicates that differences in financial planning scores had a stronger standardized association with financial control scores than differences in financial literacy scores in this sample.

Standardized coefficients are particularly informative here because the predictors have different dispersions. The beta of 0.655 for financial planning means that, measured in standard-deviation units, variation in planning is more strongly associated with variation in financial control than is variation in financial literacy, whose beta is 0.331. This does not mean that literacy is unimportant, nor does it imply that the planning coefficient represents a causal effect. Instead, it suggests that among respondents with similar levels of the other predictor, differences in planning capability correspond more closely with differences in reported financial control. The result is consistent with the managerial logic that control requires a benchmark. Without a plan, budget, or expected cash-flow position, deviations are more difficult to identify systematically because there is no explicit reference point against which actual outcomes can be assessed.

Theoretical and Empirical Discussion

The positive association between financial literacy and financial control supports the view that financial knowledge functions as a cognitive resource in decision-making. Business owners who better understand basic financial principles tend to have a stronger foundation for reading the financial condition of their businesses, evaluating financing alternatives, and recognizing risk. This finding is consistent with (Eniola & Entebang, 2017), who place financial knowledge, awareness, and attitudes as important components of managerial financial literacy, and with (Ye & Kulathunga, 2019), who connect financial literacy with MSME sustainability through financing access and risk attitudes.

One plausible interpretation is that financial literacy improves the quality of information used in the control process. A manager who understands liquidity, debt obligations, cost implications, and financial risk is better positioned to recognize when actual financial conditions are moving away from expectations. Literacy may also support the interpretation of accounting records and the evaluation of alternatives when corrective action is needed. This logic is compatible with (Eniola & Entebang, 2017), who emphasize managerial financial knowledge and awareness, and with (Ye & Kulathunga, 2019), who connect financial literacy with broader MSME sustainability mechanisms. The present results extend that logic specifically to self-assessed financial control. However, because the data are observational, the study cannot determine whether literacy strengthens control, whether control experience strengthens literacy, or whether both are influenced by other managerial capabilities.

The association between financial planning and financial control is also consistent with the logic of management functions. Planning establishes targets and resource allocation, while control evaluates whether actual outcomes align with those targets. The larger beta for planning indicates that, in this sample, the ability to formulate financial plans was more strongly associated with the ability to perform financial control. This result is consistent with the view of (Brigham & Houston, 2022), who position planning and budgeting as integral parts of financial management, and with Indonesian empirical evidence reported by (Larasaty et al., 2021) and (Ruscitasari et al., 2022).

Planning may have a particularly direct connection with control because it creates the targets that make evaluation possible. A cash-flow projection provides an expected timing of receipts and payments; a budget establishes spending priorities; and a financing plan clarifies how funding needs are expected to be met. When actual outcomes are recorded, these expectations become reference points for detecting deviations. In this sense, planning does not replace control but gives control an operational benchmark. The stronger standardized association observed in the study is therefore theoretically coherent with the financial-management framework described by (Brigham & Houston, 2022). It also aligns with the Indonesian evidence that financial planning is related to financial-management behavior and to planning-and-control practices (Larasaty et al., 2021); (Ruscitasari et al., 2022).

The high R^2 value should be interpreted proportionally. The figure of 75.67% is not the percentage of MSME success in controlling finances and is not the magnitude of a causal effect. It only represents the proportion of variance in Y scores within the sample that can be statistically explained by X1 and X2 in the specified regression model. Because the study is cross-sectional and observational, the direction of causality cannot be established, and unmeasured variables may also contribute to financial control ability.

The distinction between association and causation is especially important when communicating the R^2 result. Saying that 75.67% of the sample variance is explained by the model is a statistical description of fit; it does not mean that literacy and planning cause 75.67% of financial control, nor does it mean that the remaining 24.33% represents a fixed set of other causal factors. R^2 can also be influenced by the measurement scales, the distribution of responses, and the characteristics of the particular sample. For this reason, the model should be viewed as evidence that the three self-reported capabilities are strongly related within the observed data. Longitudinal designs, experimental or training interventions, and repeated measurements would be needed to evaluate whether changes in literacy or planning precede and produce changes in financial control.

The main limitation of the study lies in the measurement quality of the financial-control variable. An alpha of 0.424 and several low item-total correlations indicate that the items used may not be fully homogeneous in representing the construct. (McNeish, 2018) cautions that Cronbach's alpha should not be treated as an absolute measure of scale quality because it depends on assumptions about the measurement model. Nevertheless, the very low alpha remains an important warning that the estimated relationship with financial control should be interpreted as exploratory rather than definitive.

This limitation has implications for both effect size and model fit. Measurement error in the dependent variable can increase unexplained variation, while non-homogeneous items can make the meaning of the composite score less precise. At the same time, shared wording or overlapping managerial behaviors across constructs can strengthen observed correlations. The present analysis cannot fully separate these possibilities because no confirmatory measurement model or external criterion measure was available. Accordingly, the reported coefficients should be treated as descriptive-explanatory evidence based on the current instrument. Future studies should refine the financial-control scale, ensure that its items cover a clearly defined domain, and evaluate dimensionality before estimating structural relationships. Such improvements would make it easier to determine whether the strong associations observed here persist when measurement quality is strengthened.

The characteristics of the data also show a concentration of responses at scores of 3–5 and only 34 unique response patterns among 91 respondents. In addition, several item columns contained identical response patterns across respondents. These patterns are insufficient to prove data-entry errors or duplication, but they justify additional verification of the raw data and data-collection procedures in future research. Such verification is important because limited score variation and repeated patterns can affect correlation estimates, reliability, and regression results.

Repeated response patterns do not by themselves demonstrate invalid data. Respondents in similar business environments can legitimately provide similar answers, especially when items are positively worded and the scale has only five response categories. Nevertheless, the combination of high means, limited variation, and identical patterns in some item columns justifies closer procedural verification. Future data collection could include clearer respondent instructions, checks for straight-line responding, time stamps where ethically and technically appropriate, and a documented protocol for reviewing incomplete or unusual questionnaires. The purpose of such procedures is not to exclude observations merely because they are similar, but to ensure that the final dataset accurately reflects independent and attentive responses.

In practical terms, the findings support MSME assistance programs that focus not only on financial knowledge but also on planning and evaluation routines. Assistance materials can be directed toward separating business and household finances, preparing simple budgets, projecting cash flows, recording actual outcomes against plans, and reviewing deviations periodically. However, because this study does not test an intervention, these practical implications should be understood as recommendations consistent with the observed associations rather than as evidence that a specific program will cause improvements in financial control.

A practical implication of the stronger planning association is that financial-literacy initiatives may be more useful when they are connected directly to planning and review routines. Training that only explains financial concepts may improve knowledge without necessarily changing how owners organize financial decisions. A more operational approach would combine basic financial understanding with tools such as simple monthly budgets, cash-flow forecasts, debt-payment schedules, and variance reviews. For example, owners could be encouraged to record a planned cash position at the beginning of a period, compare it with actual receipts and payments, identify the largest deviations, and document a corrective response. This sequence links literacy, planning, and control in a way that reflects the conceptual model of the study. Because no intervention was tested, however, these recommendations remain practice-oriented implications rather than demonstrated treatment effects.

For MSME owners themselves, the findings suggest a simple managerial sequence that can be implemented without sophisticated financial systems. First, the owner needs a basic understanding of the financial meaning of sales, costs, cash balances, debt obligations, and business-versus-household expenditures. Second, this understanding can be translated into a short planning horizon, such as a weekly or monthly cash plan and a simple operating budget. Third, actual transactions can be recorded against the plan and reviewed at regular intervals. Fourth, large deviations can trigger a specific response, such as postponing discretionary spending, accelerating collection of receivables, renegotiating payment timing, or reconsidering financing needs. These examples are not tested interventions in the current study, but they illustrate why planning may be closely connected with control in everyday MSME management. The sequence also shows that financial literacy is most useful when embedded in a recurring decision process rather than treated as a one-time body of knowledge.

CONCLUSION

This study demonstrates that financial literacy and financial planning ability are positively and significantly associated with financial control ability among 91 MSME owners and managers. The multiple regression analysis indicates that both variables contribute significantly to explaining variations in financial control ability, with a coefficient of determination (R^2) of 75.67%. Importantly, financial planning ability exhibits a stronger standardized association with financial control ability ($\beta = 0.655$) than financial literacy ($\beta = 0.331$). These findings suggest that the ability to formulate financial plans, establish budgets, and set financial targets is more closely associated with financial control capability than financial knowledge alone within the observed sample.

The primary novelty of this study lies in its explicit conceptualization of financial control ability as a distinct managerial capability of MSMEs rather than treating it merely as a component of general financial management behavior or business performance. Unlike previous studies that primarily examined broader financial management outcomes or organizational characteristics, this study specifically positions financial control ability as the dependent variable and simultaneously examines its associations with financial literacy and financial planning ability. Furthermore, the finding that financial planning has a stronger standardized association than financial literacy provides additional empirical insight into the relative importance of these two managerial capabilities. This distinction contributes to the MSME financial management literature by highlighting financial control as a specific managerial function involving financial monitoring, evaluation of deviations from financial plans, and corrective decision-making.

From a practical perspective, these findings suggest that MSME financial management development programs should extend beyond improving financial knowledge to strengthening financial planning and control practices. Business owners and managers may benefit from incorporating systematic budgeting, cash-flow forecasting, periodic financial evaluations, and corrective financial decision-making into their routine operations. Nevertheless, the findings should be interpreted cautiously because the cross-sectional research design does not establish causal relationships, the sample was selected through purposive sampling, and the financial control measurement exhibited low internal consistency (Cronbach's $\alpha = 0.424$). Future research should develop and validate more reliable measures of financial control ability, employ larger and more representative samples, and consider longitudinal or intervention-based designs to investigate whether improvements in financial planning lead to measurable improvements in financial control capability.

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