Determinants of the Financial Performance of MSMEs Assisted by the Rakyat Sejahtera Abadi Credit Union Cooperative in Bekasi City: The Influence of Financial Literacy, Cooperative Capital Facilitation, and Fintech Adoption Moderated by Regulatory Support

Agtovia Frimayasa[1*], Ibnu Haris Nasution[2]
Fakultas Bisnis dan Ilmu Sosial, Universitas Dian Nusantara. Jalan Tanjung Duren Barat II No.1, RT.1/RW.5, Tanjung Duren Utara, Kecamatan Grogol Petamburan, Kota Jakarta Barat, Daerah Khusus Ibukota Jakarta
Email: agtovia.frimayasa@undira.ac.id[1], ibnu.haris.nasution @undira.ac.id[2]

Micro, Small, and Medium Enterprises (MSMEs) constitute a major pillar of Indonesia's economy; however, many cooperative-assisted MSMEs continue to experience difficulties in achieving sustainable financial performance due to limited financial capability, restricted access to capital, and uneven adoption of digital financial technologies. Despite the strategic role of cooperatives in supporting MSME development, empirical evidence integrating financial literacy, cooperative capital facilitation, fintech adoption, and institutional support within a single analytical framework remains limited. This study aims to examine the effects of financial literacy, cooperative capital facilitation, and fintech adoption on the financial performance of MSMEs assisted by the Rakyat Sejahtera Abadi Credit Union Cooperative in Bekasi City. Furthermore, it investigates the moderating role of regulatory support in strengthening these relationships. A quantitative explanatory approach was employed using survey data collected from 138 MSME owners. Data were analyzed using multiple regression and Moderated Regression Analysis (MRA) with SPSS. The results indicate that financial literacy, cooperative capital facilitation, and fintech adoption positively and significantly influence MSME financial performance, with fintech adoption emerging as the strongest predictor. Regulatory support also significantly strengthens the effects of all three determinants on financial performance, highlighting the importance of a supportive institutional environment in enhancing the effectiveness of financial capability, cooperative financing, and digital technology adoption. This study contributes to the MSME literature by integrating financial, technological, and institutional perspectives into a comprehensive analytical framework, while providing practical implications for policymakers, cooperatives, and MSME owners in designing more effective strategies to improve business sustainability and competitiveness.

Keywords: Financial Literacy, Cooperative Capital Facilitation, Fintech Adoption, Regulatory Support, Financial Performance, MSMEs.

Corresponding Author:
Agtovia Frimayasa
Fakultas Bisnis dan Ilmu Sosial, Universitas Dian Nusantara. Jalan Tanjung Duren Barat II No.1, RT.1/RW.5, Tanjung Duren Utara, Kecamatan Grogol Petamburan, Kota Jakarta Barat, Daerah Khusus Ibukota Jakarta
agtovia.frimayasa@undira.ac.id

1. Introduction

Micro, Small, and Medium Enterprises (MSMEs) constitute the backbone of Indonesia's economy, accounting for approximately 61.9% of the national Gross Domestic Product (GDP) and absorbing more than 97% of the workforce[1]. Beyond their contribution to economic growth, MSMEs play a vital role in reducing unemployment, alleviating poverty, and promoting inclusive regional development. Nevertheless, despite their substantial contribution, many MSMEs continue to experience difficulties in achieving sustainable financial performance. According to the Ministry of Cooperatives and SMEs[1], limited managerial capability, restricted access to financing, and low digital readiness remain persistent challenges that hinder the long-term competitiveness of MSMEs. Similar concerns have been highlighted by the OECD[2], which reported that MSMEs in emerging economies generally face structural barriers in accessing financial services and digital technologies, limiting their capacity to improve productivity and business sustainability.

At the regional level, West Java remains one of Indonesia's largest MSME centers, with more than five million registered business units contributing significantly to provincial economic activity. Bekasi City, as one of the province's major industrial and commercial hubs, has experienced rapid growth in entrepreneurial activities, particularly among micro and small enterprises operating in trade, services, food processing, and household industries. However, many MSMEs in Bekasi continue to face financial management problems, unstable cash flows, and limited access to formal financing, making improvements in financial performance an urgent policy concern. Consequently, strengthening the institutional ecosystem supporting MSMEs has become increasingly important for ensuring sustainable business development.

Among various institutional support mechanisms, Credit Union (CU) cooperatives have emerged as one of the most effective community-based financial institutions for promoting MSME development. Unlike commercial banks, credit unions combine financial services with member education, business mentoring, and continuous capacity building, enabling entrepreneurs to improve both their financial capability and business resilience. The Rakyat Sejahtera Abadi Credit Union Cooperative in Bekasi City has assisted hundreds of MSMEs through financing programs, financial consultation, and entrepreneurship development initiatives. Despite these efforts, empirical evidence regarding the determinants of financial performance among cooperative-assisted MSMEs remains relatively limited. Evaluating these determinants is essential for improving cooperative empowerment programs and ensuring that financial assistance translates into sustainable business performance.

Previous studies have consistently identified financial literacy, access to capital, and financial technology adoption as important determinants of MSME performance. Lusardi and Mitchell[3] argued that financial literacy enhances individuals' ability to make effective financial decisions, while Wijaya et al[4] demonstrated that digital technology adoption significantly improves MSME competitiveness and financial outcomes. Similarly, Sutrisno et al [5] found that financial literacy indirectly improves business performance through more effective utilization of digital financial services. These studies collectively suggest that managerial capability and technological readiness play important roles in strengthening MSME competitiveness.

However, the empirical evidence remains fragmented because most previous studies examine these determinants independently rather than simultaneously. Several studies focus exclusively on financial literacy, whereas others emphasize capital accessibility or fintech adoption without considering their complementary relationships. Consequently, the interaction among financial capability, institutional financing support, and digital technology adoption has not yet been comprehensively explained, particularly within cooperative-based MSME empowerment programs.

Furthermore, previous findings concerning MSME financial performance remain inconsistent. While Nasrudin [6] and Wijaya et al[4] reported significant positive effects of financial literacy and digital financial service adoption on business performance, several studies conducted in developing regions have shown that improvements in financial literacy do not always translate into better financial outcomes because limited institutional support and regulatory constraints prevent entrepreneurs from fully utilizing their knowledge. These inconsistencies indicate that the effectiveness of financial literacy and technological adoption may depend on contextual factors beyond the capabilities of MSME owners themselves.

One contextual factor that has received relatively limited scholarly attention is regulatory support. Regulatory support includes simplified business licensing through the Online Single Submission (OSS) system, MSME tax incentives, subsidized financing programs, and regulatory frameworks governing digital financial services. Institutional Theory suggests that organizational performance depends not only on internal resources but also on the institutional environment in which organizations operate. Supportive regulations can reduce compliance costs, increase legal certainty, facilitate technology adoption, and improve access to financial services. Nevertheless, regulatory support has rarely been examined as a moderating variable capable of strengthening the effects of financial literacy, cooperative capital facilitation, and fintech adoption on MSME financial performance.

The study by Frimayasa and Suprayitno[7] provides further evidence regarding the importance of institutional context. Their findings indicate that perceived security and perceived ease of use significantly influence MSMEs' intention to adopt QRIS digital payment systems, with user attitudes acting as an important mediating mechanism. Although the study focused primarily on technology acceptance, the results imply that supportive institutional and regulatory environments are likely to strengthen the benefits generated by digital financial technologies. However, the study did not investigate whether regulatory support enhances the impact of fintech adoption on actual financial performance, leaving an important empirical question unanswered.

Accordingly, this study addresses several important research gaps. First, previous studies generally investigate financial literacy, cooperative financing, and fintech adoption separately rather than integrating them into a single analytical framework. Second, research focusing specifically on cooperative-assisted MSMEs remains limited despite the strategic role of cooperatives in Indonesia's MSME ecosystem. Third, empirical evidence regarding the moderating role of regulatory support remains scarce. Finally, little is known about how these relationships operate within the context of Credit Union-assisted MSMEs in Bekasi City. By addressing these gaps, this study contributes to a more comprehensive understanding of the financial, technological, and institutional determinants of MSME financial performance.

The novelty of this study lies in the development of an integrated framework combining financial capability, cooperative capital facilitation, fintech adoption, and regulatory support within a single empirical model. Unlike previous studies that primarily examine direct relationships, this research positions regulatory support as an institutional moderator capable of strengthening the effectiveness of financial literacy, cooperative financing, and fintech adoption. Focusing on MSMEs assisted by the Rakyat Sejahtera Abadi Credit Union Cooperative in Bekasi City also provides new empirical evidence from a cooperative-based empowerment context that remains underexplored in the existing literature. Accordingly, this study aims to examine the partial and simultaneous effects of financial literacy, cooperative capital facilitation, and fintech adoption on MSME financial performance, while also investigating the moderating role of regulatory support in strengthening these relationships.

2. Literature Review and Problem Statement

Financial Performance of MSMEs

Financial performance refers to an organization's ability to achieve its financial objectives through efficient resource utilization and sustainable business operations[8]. In the context of MSMEs, financial performance is generally reflected through indicators such as sales growth, profitability, liquidity, cash flow adequacy, and the ability to meet financial obligations. Unlike large corporations that rely heavily on audited financial statements and complex financial ratios, MSMEs often evaluate their performance using more operational and practical indicators. Strong financial performance enables MSMEs to maintain business continuity, expand market opportunities, and improve competitiveness. Conversely, weak financial performance may limit business growth and increase vulnerability to economic uncertainty. Therefore, identifying the determinants of MSME financial performance remains a critical issue in entrepreneurship and small business research.

Previous studies have demonstrated that financial performance is influenced by both internal and external factors. Internal factors include managerial capability, financial literacy, and technology utilization, whereas external factors encompass access to financing, institutional support, and government policies[9]. Within cooperative-based empowerment programs, the interaction between these factors becomes particularly important because MSMEs often depend on cooperative assistance to overcome resource limitations.

Financial Literacy

Financial literacy refers to the knowledge, skills, and confidence required to make effective financial decisions and manage financial resources responsibly[3]. Financial literacy encompasses understanding budgeting, financial planning, debt management, savings, investment, and risk management. For MSME owners, financial literacy is essential because business and personal finances are often closely intertwined. Business owners with higher levels of financial literacy are generally more capable of preparing budgets, monitoring cash flows, evaluating financing alternatives, and making strategic investment decisions. Such capabilities enable them to allocate resources efficiently and improve overall business performance. Sutrisno et al [5] found that financial literacy positively contributes to the effective utilization of financial services among MSME owners. Similarly, Kurniasih [10] reported that financial literacy significantly influences the adoption of digital financial services, which subsequently improves financial management practices. Based on these arguments, financial literacy is expected to positively affect MSME financial performance.

Cooperative Capital Facilitation

Access to capital remains one of the most significant challenges faced by MSMEs. Limited financial resources often restrict business expansion, innovation, and operational sustainability. Cooperative capital facilitation refers to the financial support provided by cooperatives through accessible loan schemes, flexible financing arrangements, capital management assistance, and financial advisory services.

Credit Union cooperatives play a unique role in supporting MSMEs by offering inclusive financing mechanisms tailored to members' needs. Compared to conventional financial institutions, cooperatives generally provide lower financing barriers, competitive interest rates, and stronger member-oriented assistance. Such support allows MSMEs to obtain working capital, invest in productive assets, and maintain operational stability. Previous studies have consistently emphasized that access to affordable financing contributes significantly to business growth and financial sustainability[9][11]. Therefore, cooperative capital facilitation is expected to enhance MSME financial performance.

Fintech Adoption

Financial Technology (Fintech) refers to the application of digital technologies to deliver financial products and services more efficiently and effectively. Fintech services include digital payments, electronic wallets, cloud-based accounting systems, peer-to-peer lending, crowdfunding, and digital insurance platforms.

The Technology Acceptance Model (TAM) proposed by Davis [12] suggests that perceived usefulness and perceived ease of use are the primary determinants of technology adoption. In MSME environments, fintech adoption can simplify financial transactions, improve record-keeping accuracy, reduce operational costs, and expand access to financial services. These advantages enable business owners to manage finances more effectively and respond more quickly to market opportunities.

Empirical evidence supports the positive relationship between fintech adoption and business performance. Frimayasa and Suprayitno [7] found that perceived security and ease of use significantly influence QRIS adoption intentions among MSME owners. Similarly, Wijaya et al. (2024) reported that digital technology adoption contributes to improved competitiveness and financial outcomes. Accordingly, fintech adoption is expected to positively influence MSME financial performance.

Regulatory Support

Regulatory support refers to government policies and institutional frameworks designed to facilitate business activities and promote economic development. In the MSME context, regulatory support includes simplified business licensing procedures, tax incentives, subsidized financing programs, digital transformation initiatives, and fintech regulations that ensure legal certainty and consumer protection.

Regulatory support is particularly important because it shapes the business environment in which MSMEs operate. Supportive regulations can reduce administrative burdens, lower compliance costs, and encourage innovation. Conversely, restrictive or unclear regulations may create barriers that limit business growth and technology adoption. Consequently, regulatory support may not directly improve financial performance but can strengthen the effectiveness of internal and external resources available to MSMEs.

From the perspective of Institutional Theory, organizations are influenced by the regulatory and institutional environments surrounding them. Therefore, the effectiveness of financial literacy, cooperative capital facilitation, and fintech adoption may depend on the extent to which supportive regulations are present. This study proposes regulatory support as a moderating variable that influences the strength of the relationships between the independent variables and financial performance.

Theoretical Foundation

This study is primarily grounded in the Technology Acceptance Model (TAM) developed by Davis [12]. TAM explains how perceived usefulness and perceived ease of use influence individuals' acceptance and utilization of technology. In the context of MSMEs, fintech adoption represents a technological innovation that can improve financial management and operational efficiency.

Additionally, Institutional Theory provides complementary insights into the role of regulatory support. According to Institutional Theory, organizational outcomes are influenced not only by internal capabilities but also by external institutional arrangements, including regulations, government policies, and supporting infrastructures. Therefore, regulatory support may strengthen the effectiveness of financial literacy, cooperative capital facilitation, and fintech adoption in improving financial performance.

Problem Statement

Although previous studies have examined the effects of financial literacy, access to capital, and fintech adoption on MSME performance, these variables have often been investigated separately. Existing research generally focuses on direct relationships without considering the broader institutional context that may influence the effectiveness of these determinants. Consequently, the understanding of how internal capabilities, financial support mechanisms, and technological adoption interact within cooperative-based empowerment programs remains limited.

Furthermore, the role of regulatory support as a moderating factor has received relatively little attention in MSME financial performance research. This limitation is particularly evident in studies involving cooperative-assisted MSMEs, where government policies and institutional support frequently play an essential role in shaping business outcomes. As a result, there remains an empirical gap regarding whether supportive regulations strengthen or weaken the impacts of financial literacy, cooperative capital facilitation, and fintech adoption on financial performance.

This study addresses these gaps by proposing an integrated model that simultaneously examines the effects of financial literacy, cooperative capital facilitation, and fintech adoption on MSME financial performance while incorporating regulatory support as a moderating variable. Focusing on MSMEs assisted by the Rakyat Sejahtera Abadi Credit Union Cooperative in Bekasi City, the study seeks to answer the following research question:

How do financial literacy, cooperative capital facilitation, and fintech adoption influence the financial performance of MSMEs, and to what extent does regulatory support moderate these relationships?

The novelty of this study lies in the integration of cooperative empowerment factors, digital financial technology adoption, and regulatory support within a single analytical framework. By doing so, the study contributes to a deeper understanding of MSME financial performance determinants and provides practical insights for cooperatives, policymakers, and MSME development programs.

3. Method

Research Design

This study employed a quantitative research approach with an explanatory research design to examine the effects of financial literacy, cooperative capital facilitation, and fintech adoption on the financial performance of Micro, Small, and Medium Enterprises (MSMEs), as well as the moderating role of regulatory support. A quantitative approach was selected because it enables the objective measurement of relationships among variables and facilitates hypothesis testing using statistical techniques. The explanatory design was considered appropriate because the study aimed to explain the causal relationships between the independent variables, the moderating variable, and the dependent variable.

The study adopted a cross-sectional survey design, in which primary data were collected from respondents at a single point in time using structured questionnaires. The collected data were analyzed using IBM SPSS Statistics version 26. Multiple Linear Regression Analysis was employed to examine the direct effects of financial literacy, cooperative capital facilitation, and fintech adoption on MSME financial performance, while Moderated Regression Analysis (MRA) was applied to investigate whether regulatory support strengthens the relationships between the independent variables and financial performance. MRA is considered an appropriate analytical technique for examining interaction effects between predictor variables and a moderating variable in regression-based studies[13].

Population and Sample

The population of this study consisted of MSMEs assisted by the Rakyat Sejahtera Abadi Credit Union Cooperative in Bekasi City. These MSMEs operate across various sectors, including retail trade, food and beverages, services, home industries, and other micro-enterprises supported by the cooperative.
A purposive sampling technique was employed to select respondents based on the following criteria:

1. Registered members of the Rakyat Sejahtera Abadi Credit Union Cooperative.
2. Owners or managers of MSMEs operating for at least one year.
3. Recipients of cooperative financial services or capital facilitation.

 ISSN 2986-5689

4. Users of at least one digital financial service, such as QRIS, mobile banking, e-wallets, or fintech applications.

Based on these criteria, 138 MSME owners participated in the study. The sample size satisfies the minimum requirement for multiple regression analysis, which recommends an adequate number of observations relative to the number of predictor variables to ensure reliable statistical estimation and sufficient analytical power[13].

Data Collection Procedure

Primary data were collected using a structured questionnaire distributed directly to MSME owners assisted by the cooperative. The questionnaire was designed based on validated measurement scales adopted and adapted from previous studies.
Prior to large-scale distribution, a pilot test involving 30 respondents was conducted to ensure the clarity, validity, and reliability of the questionnaire items. Feedback obtained during the pilot phase was used to refine the wording and structure of the questionnaire.
All items were measured using a five-point Likert scale ranging from:

a. 1 = Strongly Disagree
b. 2 = Disagree
c. 3 = Neutral
d. 4 = Agree
e. 5 = Strongly Agree

Measurement of Variables

The study involved four main constructs and one moderating variable.

Financial Literacy (FL)

Financial literacy refers to the ability of MSME owners to understand and apply financial knowledge in business decision-making (Lusardi & Mitchell, 2014).
Indicators:

a. FL1: Understanding of financial planning.
b. FL2: Ability to manage business cash flow.
c. FL3: Knowledge of financial products and services.
d. FL4: Ability to prepare financial records and reports.

Cooperative Capital Facilitation (CCF)

Cooperative capital facilitation refers to the financial and technical support provided by the cooperative to its members.
Indicators:

a. CCF1: Ease of accessing cooperative loans.
b. CCF2: Flexibility of financing schemes.
c. CCF3: Adequacy of loan amounts.
d. CCF4: Availability of financial assistance and guidance.

Fintech Adoption (FA)

Fintech adoption refers to the extent to which MSME owners utilize digital financial technologies in their business activities.
Indicators:

ISSN 2986-5689

a. FA1: Use of digital payment systems.
b. FA2: Use of mobile banking services.
c. FA3: Use of digital bookkeeping applications.
d. FA4: Perceived usefulness of fintech services.

Regulatory Support (RS)
Regulatory support refers to the perception of government policies and institutional support that facilitate MSME development.
Indicators:

a. RS1: Ease of business licensing procedures.
b. RS2: Availability of government incentive programs.
c. RS3: Supportive fintech regulations.
d. RS4: Accessibility of MSME development programs.

Financial Performance (FP)
Financial performance refers to the extent to which MSMEs achieve desired financial outcomes.
Indicators:

a. FP1: Sales growth.
b. FP2: Profit growth.
c. FP3: Ability to meet financial obligations.
d. FP4: Improvement in cash flow conditions.

Data Analysis Technique

Data analysis was performed using IBM SPSS Statistics version 26. The analysis began with descriptive statistics to describe respondents' characteristics and the distribution of research variables. Instrument quality was subsequently evaluated through validity testing using the Pearson Product-Moment Correlation and reliability testing using Cronbach's Alpha, with a coefficient of 0.70 or higher indicating satisfactory internal consistency[13].

Before hypothesis testing, the regression model was evaluated through classical assumption tests, including the Kolmogorov–Smirnov normality test, the Glejser heteroscedasticity test, and the Variance Inflation Factor (VIF) and tolerance tests for multicollinearity. Multiple Linear Regression Analysis was then conducted to examine the direct effects of financial literacy, cooperative capital facilitation, and fintech adoption on MSME financial performance. Finally, Moderated Regression Analysis (MRA) was employed by incorporating interaction terms between regulatory support and each independent variable to determine whether regulatory support significantly moderates the relationships between the predictor variables and financial performance. Statistical significance was evaluated at the 5% significance level ($p < 0.05$).

4. Results and Discussion

Validity and Reliability Testing

Table 1 summarizes the results of the validity and reliability tests for all research variables. Validity was assessed using the Pearson Product-Moment correlation, while reliability was evaluated using Cronbach’s Alpha.

Table 1. Validity and Reliability Test Results

Variable	r-value (Min–Max)	r-table (n = 138)	Cronbach's Alpha
Financial Literacy (FL)	0.712 – 0.841	0.167	0.853
Cooperative Capital Facilitation (CCF)	0.724 – 0.867	0.167	0.871
Fintech Adoption (FA)	0.698 – 0.854	0.167	0.849
Regulatory Support (RS)	0.706 – 0.839	0.167	0.845
Financial Performance (FP)	0.731 – 0.882	0.167	0.879

Source: SPSS 26 Output, Processed Data (2026)

All measurement items exhibited correlation coefficients exceeding the critical r-table value of 0.167, indicating that all indicators were valid. Furthermore, the Cronbach's Alpha values for all constructs exceeded the recommended threshold of 0.70, confirming satisfactory internal consistency reliability. These results indicate that the measurement instruments are appropriate for further statistical analysis.

Classical Assumption Testing

Before conducting hypothesis testing, several classical assumption tests were performed to ensure the validity of the regression model. These tests included normality, heteroscedasticity, and multicollinearity assessments.

Prior to hypothesis testing, several classical assumption tests were conducted to ensure the suitability of the regression model. The normality test using the Kolmogorov–Smirnov method produced a significance value of 0.200 (> 0.05), indicating that the residuals were normally distributed.

Table 2. One-Sample Kolmogorov–Smirnov Normality Test

Statistic	Value
N	138
Mean	0.02
Standard Deviation	2.005664
Most Extreme Differences (Absolute)	0.049
Most Extreme Differences (Positive)	0.049
Most Extreme Differences (Negative)	-0.041
Test Statistic	0.049
Asymp. Sig. (2-tailed)	0.200
Monte Carlo Sig. (2-tailed)	0.606
99% Confidence Interval (Lower Bound)	0.594
99% Confidence Interval (Upper Bound)	0.619

Source: SPSS 26 Output, Processed Data (2026)

The Kolmogorov–Smirnov test produced an Asymp. Sig. (2-tailed) value of 0.200, which exceeds the significance threshold of 0.05. Therefore, the residuals are normally distributed, indicating that the normality assumption is satisfied. The heteroscedasticity test using the Glejser method revealed p-values greater than 0.05 for all independent variables, confirming homoscedasticity. Therefore, all classical assumptions were satisfied, and the regression model was considered suitable for hypothesis testing.

Dependent Variable: Absolute Residual (Abs_Res1)

Table 3. Heteroscedasticity Test Results (Glejser Test)

Variable	B	Std. Error	Beta	t-value	Sig.
Constant	1.747	0.728		2.399	0.018

ISSN 2986-5689

Variable	B	Std. Error	Beta	t-value	Sig.
Financial Literacy	-0.036	0.046	-0.077	-0.796	0.427
Cooperative Capital Facilitation	-0.009	0.044	-0.02	-0.195	0.846
Fintech Adoption	0.021	0.045	0.047	0.459	0.647

Source: SPSS 26 Output, Processed Data (2026)

The Glejser test results show that all independent variables have significance values greater than 0.05. Therefore, no heteroscedasticity problem is detected, indicating that the variance of residuals remains constant across observations.

Table 4. Multicollinearity Test Results

Variable	B	Std. Error	Beta	t-value	Sig.
Constant	1.585	0.645		2.459	0.015
Financial Literacy	-0.026	0.042	-0.062	-0.606	0.546
Cooperative Capital Facilitation	-0.046	0.041	-0.121	-1.141	0.256
Fintech Adoption	0.014	0.042	0.035	0.327	0.744
Regulatory Support	0.04	0.044	0.105	0.927	0.356

Source: SPSS 26 Output, Processed Data (2026)

The multicollinearity test showed tolerance values greater than 0.10 and Variance Inflation Factor (VIF) values below 10 for all variables, suggesting the absence of multicollinearity issues.

Multiple Regression

Following the satisfactory results of the classical assumption tests, multiple regression analysis was conducted to examine the direct effects of Financial Literacy, Cooperative Capital Facilitation, and Fintech Adoption on MSME Financial Performance. The results are presented in Table 5.

Table 5. Multiple Regression Results – Base Model

Variable	B	Std. Error	Beta (β)	t-value	Sig.
Constant	0.412	0.187		2.204	0.029
Financial Literacy (FL)	0.284	0.068	0.298	4.176	0.000
Cooperative Capital Facilitation (CCF)	0.249	0.071	0.264	3.507	0.001
Fintech Adoption (FA)	0.301	0.073	0.312	4.123	0.000

Model Summary:
$R = 0.829$ | $R^2 = 0.684$ | Adjusted $R^2 = 0.677$ | $F = 97.412$ | Sig. $F = 0.000$
Source: SPSS 26 Output, Processed Data (2026)

As shown in Table 5, all direct-effect hypotheses (H1, H2, and H3) were supported. Fintech Adoption emerged as the most influential predictor of Financial Performance ($\beta = 0.312$), followed by Financial Literacy ($\beta = 0.298$) and Cooperative Capital Facilitation ($\beta = 0.264$). The F-statistic of 97.412 with a significance level of 0.000 confirms that the independent variables jointly exert a highly significant influence on MSME Financial Performance. Moreover, the coefficient of determination ($R^2 = 0.684$) indicates that 68.4% of the variance in Financial Performance can be explained by the three independent variables included in the model.

Moderating Effect Analysis

To examine the moderating role of Regulatory Support, a Moderated Regression Analysis (MRA) was conducted by incorporating interaction terms between Regulatory Support and each independent variable. The results are presented in Table 5.

 ISSN 2986-5689

Table 5. Moderated Regression Analysis (MRA) Results

Variable	B	Std. Error	Beta (β)	t-value	Sig.
Constant	0.398	0.182		2.187	0.030
Financial Literacy (FL)	0.271	0.066	0.284	4.106	0.000
Cooperative Capital Facilitation (CCF)	0.238	0.069	0.253	3.449	0.001
Fintech Adoption (FA)	0.289	0.071	0.3	4.07	0.000
Regulatory Support (RS)	0.152	0.064	0.162	2.375	0.019
FL × RS	0.178	0.07	0.187	2.543	0.012
CCF × RS	0.204	0.076	0.214	2.684	0.008
FA × RS	0.231	0.08	0.241	2.888	0.004

Model Summary:
$R^2 = 0.741$ | $\Delta R^2 = +0.057$ | F Change = 9.814 | Sig. F Change = 0.000
Source: SPSS 31 Output, Processed Data (2026)

The moderation model demonstrates an increase in explanatory power, with R^2 improving from 0.684 to 0.741 ($\Delta R^2 = 0.057$). The F Change value of 9.814 is statistically significant at $p < 0.001$, indicating that the inclusion of interaction terms provides meaningful incremental explanatory power. All interaction coefficients (FL × RS, CCF × RS, and FA × RS) were statistically significant at $p < 0.05$, supporting hypotheses H4a, H4b, and H4c. These findings suggest that Regulatory Support strengthens the effects of Financial Literacy, Cooperative Capital Facilitation, and Fintech Adoption on MSME Financial Performance.

Table 6. Summary of Hypothesis Testing Results

Hypothesis	Relationship	Interaction Beta	Result	Conclusion
H1	Financial Literacy → Financial Performance	0.298***	Significant	Supported
H2	Cooperative Capital Facilitation → Financial Performance	0.264***	Significant	Supported
H3	Fintech Adoption → Financial Performance	0.312***	Significant	Supported
H4a	FL × Regulatory Support → Financial Performance	0.187*	Significant	Supported
H4b	CCF × Regulatory Support → Financial Performance	0.214**	Significant	Supported
H4c	FA × Regulatory Support → Financial Performance	0.241**	Significant	Supported

***p < 0.001; **p < 0.01; *p < 0.05*
Source: Processed Data (2026)

The results confirm that Financial Literacy, Cooperative Capital Facilitation, and Fintech Adoption significantly enhance MSME Financial Performance. Moreover, Regulatory Support serves as a significant moderating factor, strengthening the positive effects of these determinants. These findings highlight the importance of combining internal capabilities, institutional financial support, technological adoption, and supportive regulatory environments to improve the financial performance of cooperative-assisted MSMEs.

Discussions

The findings of this study demonstrate that the financial performance of MSMEs assisted by the Rakyat Sejahtera Abadi Credit Union Cooperative is influenced by a combination of managerial capability, access to financial resources, technological adoption, and institutional support. The empirical results indicate that financial literacy, cooperative capital facilitation, and fintech adoption each contribute positively and

ISSN 2986-5689

significantly to improving financial performance, while regulatory support further strengthens these relationships. These findings suggest that improving MSME performance cannot rely on a single factor but requires the interaction of individual competencies, organizational resources, technological innovation, and supportive public policies. This integrated perspective is consistent with the arguments of Barney [14], Davis[12], and Scott[15], who emphasized that organizational performance is determined by the combined effects of internal capabilities, strategic resources, technological adoption, and institutional environments.
Among the explanatory variables, fintech adoption emerged as the strongest predictor of financial performance ($\beta = 0.312$), followed by financial literacy ($\beta = 0.298$) and cooperative capital facilitation ($\beta = 0.264$). The differences in the standardized coefficients indicate that each variable contributes through different mechanisms. Fintech adoption generates the largest contribution because digital financial technologies directly improve operational efficiency, accelerate payment processing, reduce transaction costs, and provide more accurate financial information. These improvements are immediately reflected in business performance, whereas financial literacy develops managerial capability gradually and cooperative capital facilitation primarily provides financial resources that require effective management before producing measurable outcomes. Similar conclusions were reported by Frimayasa and Suprayitno[7], Sebayang[16], Rohaeni et al [17] who found that digital financial technology has become one of the strongest determinants of MSME competitiveness in the digital economy.

The positive influence of financial literacy indicates that entrepreneurs with stronger financial knowledge are better equipped to prepare budgets, manage working capital, monitor cash flows, evaluate financing alternatives, and distinguish between business and personal finances. These capabilities enable MSMEs to allocate resources more efficiently and improve long-term financial sustainability. This finding supports Human Capital Theory, which argues that knowledge and managerial competence constitute strategic intangible resources that enhance organizational productivity[18]. It is also consistent with Lusardi and Mitchell[3], Sutrisno et al [5], Tandilino[19], who concluded that higher financial literacy improves business decision-making quality and financial performance. However, this finding differs from studies by Fatoki (2014) and Eniola and Entebang (2016), which reported insignificant relationships because financial literacy alone was insufficient to improve business performance when MSMEs operated under severe financial constraints and weak institutional support. The stronger effect observed in the present study is likely attributable to the continuous mentoring, financial education, and business assistance provided by the cooperative, enabling entrepreneurs to translate financial knowledge into practical managerial decisions.

The findings further reveal that cooperative capital facilitation positively affects MSME financial performance, although its contribution is relatively smaller than those of financial literacy and fintech adoption. This result suggests that access to financing remains essential for business expansion, inventory procurement, and working capital management, but financial resources alone cannot guarantee better performance unless entrepreneurs possess adequate managerial capability. This finding is consistent with the Resource-Based View proposed by Barney[14], which argues that organizational performance depends not only on the availability of valuable resources but also on the firm's capability to utilize those resources effectively. Similar findings were reported by Beck et al[20], Abor and Quarte[21], and Agyapong et al[22], who concluded that access to finance significantly promotes MSME growth. Nevertheless, other studies, including those by Nkundabanyanga et al[23], found weaker effects because borrowed funds were frequently allocated to non-productive expenditures and were not accompanied by managerial guidance. The cooperative system examined in this study provides continuous supervision and financial consultation, which likely explains the stronger contribution of cooperative financing.

The dominant influence of fintech adoption confirms that digital transformation has become a strategic capability rather than merely a supporting operational tool. This finding extends the Technology Acceptance Model developed by Davis[12], demonstrating that technologies perceived as useful not only encourage adoption but also improve organizational performance through operational efficiency, transaction speed, and better financial control. The results support previous findings by Venkatesh et al[24], Frimayasa and Suprayitno[7], and Arner et al[25] who concluded that fintech significantly enhances MSME competitiveness. However, contrasting evidence was reported by Ozili[26], who observed relatively weak impacts in regions where digital infrastructure and digital literacy remained inadequate. These differences indicate that the effectiveness of fintech adoption depends not only on technological readiness but also on supporting institutional and infrastructural conditions.

Collectively, financial literacy, cooperative capital facilitation, and fintech adoption explain 68.4% of the variation in MSME financial performance ($R^2 = 0.684$), indicating substantial explanatory power. According to Hair et al. (2021), an R^2 value approaching 0.70 reflects a model with strong predictive capability in social science research. Nevertheless, approximately 31.6% of the variation remains unexplained, suggesting that MSME financial performance is also influenced by other factors such as entrepreneurial orientation, innovation capability, digital marketing capability, competitive intensity, business experience, and environmental uncertainty. Similar observations were made by Rauch et al [27], who emphasized that sustainable MSME performance is multidimensional and cannot be explained solely by financial and technological variables.

Another important contribution of this study is the identification of regulatory support as a significant moderating variable. The findings demonstrate that supportive regulations strengthen the effects of financial literacy, cooperative capital facilitation, and fintech adoption on financial performance, with the strongest moderating effect occurring in the relationship between fintech adoption and financial performance ($\beta = 0.241$). This result indicates that technological innovation generates maximum benefits when accompanied by an enabling institutional environment. Government policies promoting digital payments, simplified licensing procedures, fintech regulations, consumer protection, and digital infrastructure reduce uncertainty and encourage greater utilization of digital financial services. These findings reinforce Institutional Theory[28], which argues that organizational performance depends not only on internal resources but also on institutional arrangements that facilitate organizational activities. Similar conclusions were reported by North[29] who found that supportive regulatory frameworks significantly enhance the effectiveness of digital transformation and financial inclusion among MSMEs.

Overall, this study contributes to the literature by integrating financial literacy, cooperative capital facilitation, fintech adoption, and regulatory support into a single analytical framework. Unlike many previous studies that examined these variables separately, the present research demonstrates that MSME financial performance is produced through the interaction of managerial capability, strategic resources, technological innovation, and institutional support. Consequently, the findings extend Human Capital Theory[18], the Resource-Based View[30], the Technology Acceptance Model[12], and Institutional Theory (Scott, 2014) by showing that these theoretical perspectives complement one another in explaining MSME performance. Practically, the results suggest that policymakers should strengthen MSME-oriented regulations and digital infrastructure, cooperatives should integrate financing with continuous financial education and business mentoring, and MSME owners should improve both financial management competencies and digital capability to achieve sustainable business growth.

5. Conclusion

This study examined the effects of financial literacy, cooperative capital facilitation, and fintech adoption on the financial performance of MSMEs assisted by the Rakyat Sejahtera Abadi Credit Union Cooperative in Bekasi City, while also investigating the moderating role of regulatory support. The findings reveal that all three independent variables positively and significantly influence financial performance. Among these determinants, fintech adoption emerged as the most influential factor, followed by financial literacy and cooperative capital facilitation. These results indicate that MSME financial performance is increasingly shaped by the ability of business owners to utilize digital financial technologies, manage financial resources effectively, and access inclusive financing opportunities provided by cooperative institutions.

The study further demonstrates that regulatory support significantly strengthens the relationships between financial literacy, cooperative capital facilitation, fintech adoption, and financial performance. The strongest moderating effect was observed in the relationship between fintech adoption and financial performance, suggesting that supportive regulatory environments enhance the effectiveness of digital financial technologies in improving business outcomes. These findings confirm that regulatory support functions as an important institutional mechanism that enables MSMEs to maximize the benefits of financial knowledge, financing access, and technological innovation.

From a theoretical perspective, this study extends the Technology Acceptance Model and Institutional Theory by integrating technological, financial, and regulatory dimensions into a single analytical framework. Practically, the findings suggest that policymakers should strengthen MSME-friendly regulations, cooperatives should expand financial literacy and financing programs, and MSME owners should increase their adoption of digital financial technologies. Although this study focused on cooperative-assisted MSMEs in Bekasi City, future research may incorporate additional variables, broader geographical coverage, and different MSME sectors to provide a more comprehensive understanding of the determinants of MSME financial performance.

6. References

[1] K. K. dan UMKM, “Laporan Kinerja 2022,” Jakarta Indonesia, 2023. [Online]. Available: https://kemenkopukm.go.id/
[2] O. for E. C. and Development, “SME and entrepreneurship outlook 2023.” OECD Publishing, 2023.
[3] A. Lusardi and O. S. Mitchell, “The economic importance of financial literacy: Theory and evidence,” *J. Econ. Lit.*, vol. 52, no. 1, pp. 5–44, 2014.
[4] A. S. Wijaya, “The Effect Of Digital Transformation On The Performance Of Msmes In The Economic Era 5.0,” *J. Manag. Econ. Financ.*, vol. 4, no. 1, pp. 22–33, 2026.
[5] E. Sutrisno and R. Nainggolan, “Financial Literacy’s Influence on The Effectiveness of QRIS Use among MSME Owners in Indonesia: The Mediating Role of Financial Behavior,” *Fokus Bisnis Media Pengkaj. Manaj. dan Akunt.*, vol. 24, no. 1, pp. 128–139, 2025.
[6] N. Nasrudin and M. Muhammad, “The Role of Digital Communication Strategies in Improving Financial Literacy of MSMEs in the Fintech Era,” *Ekosist. J. Econ. Business, Contemp. Tour.*, vol. 1, no. 1, pp. 45–56, 2026.
[7] A. Frimayasa and A. Suprayitno, “The Intention to Use QRIS Among MSMEs in Rempoa Subdistrict, South Tangerang: The Influence of Perceived Ease of Use and Perceived Security with User Attitude as a Mediating Variable,” *J. Ilm. Multidisiplin Indones.*, vol. 4, no. 06, pp. 515–523, 2025.
[8] E. F. Brigham and J. F. Houston, “Fundamentals of Financial Management: Concise by Cengage,” *Cengage Learn.*, 2019.

[9] U. Sekaran and R. Bougie, *Research methods for business: A skill building approach*. john wiley & sons, 2016.

[10] F. Kurniasari, N. Abd Hamid, and E. D. Lestari, "Unraveling the impact of financial literacy, financial technology adoption, and access to finance on small medium enterprises business performance and sustainability: a serial mediation model," *Cogent Bus. Manag.*, vol. 12, no. 1, p. 2487837, 2025.

[11] D. Fahmi, I. Halimah, and Y. Yusuf, "Sosialisasi Penyusunan Laporan Keuangan Guna Meningkatkan Usaha Umkm Di Pokdarwis Ekowisata Keranggan Tangerang Selatan," *J. Abdi Masy. Multidisiplin*, vol. 3, no. 2, pp. 13–18, 2024.

[12] F. D. Davis, "Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology," *Manag. Inf. Syst. Res. Center, Univ. Minnesota*, vol. 13, no. 3, pp. 319–340, 1989, doi: 10.5962/bhl.title.33621.

[13] J. F. Hair Jr, G. T. M. Hult, C. M. Ringle, M. Sarstedt, N. P. Danks, and S. Ray, *Partial least squares structural equation modeling (PLS-SEM) using R: A workbook*. Springer Nature, 2021.

[14] J. Barney, "Special theory forum the resource-based model of the firm: origins, implications, and prospects," *J. Manage.*, vol. 17, no. 1, pp. 97–98, 1991.

[15] W. R. Scott, "Financial Accounting Theory (Fifth Edit)," *PearsonPrentice Hall*, 2009.

[16] E. S. Sebayang, "Digital Economy and Financial Empowerment: The Mediating Role of Infrastructure, Innovation, and Competitive Advantage," *J. Ilm. Manaj. Kesatuan*, vol. 13, no. 6, pp. 5859–5872, 2025.

[17] N. Rohaeni, M. Meutia, I. Indriana, and Y. Januarsi, "Does FinTech adoption enhance MSME performance? The role of financial behaviour and digital financial literacy," *Shirkah J. Econ. Bus.*, vol. 11, no. 1, pp. 107–126, 2026.

[18] G. S. Becker, "Human capital and the economy," *Proc. Am. Philos. Soc.*, vol. 136, no. 1, pp. 85–92, 1992.

[19] C. Tandilino, G. T. Pontoh, D. Darmawati, and A. Indrijawati, "Digital financial inclusion as a mediator of digital financial literacy and government support in MSME performance," *Int. J. Financ. Stud.*, vol. 13, no. 4, p. 199, 2025.

[20] T. Beck, A. Demirgüç-Kunt, and V. Maksimovic, "Financing patterns around the world: Are small firms different?," *J. financ. econ.*, vol. 89, no. 3, pp. 467–487, 2008.

[21] J. Abor and P. Quartey, "Issues in SME development in Ghana and South Africa," *Int. Res. J. Financ. Econ.*, vol. 39, no. 6, pp. 215–228, 2010.

[22] F. O. Agyapong, A. Agyapong, and K. Poku, "Nexus between social capital and performance of micro and small firms in an emerging economy: The mediating role of innovation," *Cogent Bus. Manag.*, vol. 4, no. 1, p. 1309784, 2017.

[23] S. Korutaro Nkundabanyanga, D. Kasozi, I. Nalukenge, and V. Tauringana, "Lending terms, financial literacy and formal credit accessibility," *Int. J. Soc. Econ.*, vol. 41, no. 5, pp. 342–361, 2014.

[24] V. Venkatesh, M. G. Morris, G. B. Davis, and F. D. Davis, "User Acceptance of Information Technology: Toward a Unified View," *Inorg. Chem. Commun.*, vol. 27, no. 3, pp. 425–478, 2003, doi: 10.1016/j.inoche.2016.03.015.

[25] D. W. Arner, R. P. Buckley, D. A. Zetzsche, and R. Veidt, "Sustainability, FinTech and Financial Inclusion: DW Arner et al.," *Eur. Bus. Organ. Law Rev.*, vol. 21, no. 1, pp. 7–35, 2020.

[26] P. K. Ozili, "Theories of financial inclusion," *Uncertain. challenges Contemp. Econ. Behav. (pp. 89–115) Emerald Publ.*, 2020.

[27] A. Rauch, J. Wiklund, G. T. Lumpkin, and M. Frese, "Entrepreneurial orientation and business performance: An assessment of past research and suggestions for the future," *Entrep. theory*

Pract., vol. 33, no. 3, pp. 761–787, 2009.

[28] W. R. Scott, *Institutions and organizations: Ideas, interests, and identities*. Sage publications, 2013.

[29] D. C. North, "Institutions, institutional change and economic performance," *Cambridge Univ Pr*, 1990.

[30] J. B. Barney, "Firm Resources and Sustained Competitive Advantage," *J. Manage.*, vol. 17, no. 1, 1991.