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Associations Between Internal Control Audit, Credit SOP Compliance, Credit Supervision, and Perceived Problematic Credit: The Moderating Role of Credit Risk Management

Billy Putra Sanjaya[1], Marsellisa Nindito[2], Adam Zakaria[3]
E-mail: billy.putra.sanjaya@gmail.com[1]
[123]Master of Accounting Program, Faculty of Economics, Universitas Negeri Jakarta, Jakarta, Indonesia

Abstract:
Problematic credit remains a significant concern for savings and loan cooperatives because it may affect financial stability and the sustainability of lending activities. This study aims to examine the relationships of Internal Control Audit, Credit Standard Operating Procedure (SOP) Compliance, and Credit Supervision with Problematic Credit, as well as to investigate the moderating role of Credit Risk Management in these relationships. This study employed a quantitative approach with a cross-sectional design. Data were collected through questionnaires from 135 respondents representing 27 Savings and Loan Cooperatives in East Jakarta, with each cooperative represented by a Chairperson, Administrator, Supervisor, Credit Officer, and Cooperative Member. The data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 4. The results show that Internal Control Audit and Credit Supervision are not significantly associated with Problematic Credit. Credit SOP Compliance is significantly and positively associated with Problematic Credit, which is contrary to the hypothesized negative relationship. Furthermore, Credit Risk Management does not significantly moderate the relationships of Internal Control Audit, Credit SOP Compliance, or Credit Supervision with Problematic Credit. These findings indicate that higher perceived compliance with credit procedures does not necessarily correspond to lower Problematic Credit and that Credit Risk Management has not demonstrated a significant moderating role in the relationships examined. This study contributes to the literature on credit management in savings and loan cooperatives and highlights the importance of strengthening the substantive implementation of credit procedures, credit supervision, and risk management practices to support more effective credit management.

Keywords: Internal Control Audit; Credit SOP Compliance; Credit Supervision; Credit Risk Management; Problematic Credit; Savings and Loan Cooperatives; PLS-SEM.

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BACKGROUND

Savings and Loan Cooperatives (SLCs) play an important role in providing financial services to their members through savings and lending activities. However, lending activities expose cooperatives to credit risk arising from borrowers' inability or unwillingness to meet their repayment obligations. Problematic credit may adversely affect financial stability and cooperative sustainability, making effective credit management essential. Its occurrence may be influenced by external factors, such as economic conditions and borrower characteristics, as well as internal factors, including Internal Control Audit, Credit Standard Operating Procedure (SOP) Compliance, Credit Supervision, and Credit Risk Management. Previous studies indicate that weaknesses in internal control, inconsistent credit procedures, and ineffective

supervision may contribute to problematic credit (Krismonika et al., 2026; Nuryani et al., 2025; Rony et al., 2025).

Internal Control Audit evaluates whether credit-related controls are implemented effectively and consistently while helping identify weaknesses and potential risks at an early stage. Effective internal control is expected to support objective and prudent lending decisions. Similarly, Credit SOP Compliance provides structured guidelines for credit applications, creditworthiness assessments, approvals, disbursements, documentation, and supervision. From the perspective of Compliance Theory, adherence to established procedures promotes discipline and accountability while reducing errors and irregularities (Foorthuis, 2012; Mökander & Floridi, 2021; Dubinina et al., 2021).

Credit Supervision is also essential after credit disbursement. Effective supervision enables cooperatives to monitor installment payments, evaluate credit quality, detect deterioration in borrowers' repayment capacity, and take corrective action. Previous studies indicate that continuous supervision supports early detection and timely corrective measures (Tefbana et al., 2024; Ulandari, 2024; Wahyuningsih, 2021). Therefore, Internal Control Audit, Credit SOP Compliance, and Credit Supervision represent important internal mechanisms for maintaining credit quality.

The effectiveness of these mechanisms may also depend on Credit Risk Management, which involves identifying, measuring, monitoring, and controlling credit risk. Previous studies emphasize its role in supporting effective credit management and suggest that it may strengthen internal mechanisms for reducing problematic credit (Purba & Arifin, 2025; Saffana, 2025; Safitri et al., 2025; Sutarip, 2022). Accordingly, this study positions Credit Risk Management as a moderating variable.

Despite the growing literature on credit management, several research gaps remain. Previous studies have predominantly examined the direct relationships of internal control, procedural compliance, supervision, and risk management with problematic credit while studies positioning Credit Risk Management as a moderating variable remain limited. Moreover, existing research has frequently focused on banks and other formal financial institutions, whereas empirical studies on Savings and Loan Cooperatives, particularly in East Jakarta, remain relatively limited.

Based on data from the DKI Jakarta Provincial Office of Industry, Trade, Cooperatives, Small and Medium Enterprises (PPKUKM) in 2025, 69 Savings and Loan Cooperatives in East Jakarta were initially identified as active and had operated for at least five years. Field verification subsequently identified 27 cooperatives that remained operational, conducted lending activities, met the research criteria, and agreed to participate. This setting provides a relevant context for examining internal credit management mechanisms and problematic credit.

Accordingly, this study examines the relationships between Internal Control Audit, Credit SOP Compliance, and Credit Supervision and perceived Problematic Credit in Savings and Loan Cooperatives in East Jakarta and investigates the moderating role of Credit Risk Management. The study is expected to contribute empirical evidence to the literature on cooperative credit management and provide practical insights for strengthening credit control, supervision, and risk management practices.

THEORETICAL FRAMEWORK

This study is primarily grounded in Agency Theory, Risk Management Theory, Compliance Theory, and the COSO Internal Control Framework. Agency Theory explains the potential conflicts of interest and information asymmetry between cooperative management and members, which may affect the objectivity and quality of credit decisions. Internal control mechanisms, procedural compliance, and credit supervision are therefore necessary to ensure that lending activities are conducted in accordance with the interests of the cooperative and its members. Risk Management Theory emphasizes the systematic identification, measurement, monitoring, and control of risks to minimize potential losses. In the context of savings and loan cooperatives, Credit Risk Management is particularly important because credit risk arises from borrowers' inability to fulfill their repayment obligations. Compliance Theory emphasizes adherence to established policies, procedures, and standards, while the COSO Internal Control Framework highlights the integration of the control environment, risk assessment, control activities, information and communication, and monitoring in establishing effective internal control.

Internal Control Audit

Internal Control Audit evaluates the effectiveness and consistency of internal controls in credit activities based on five COSO dimensions: control environment, risk assessment, control activities, information and communication, and monitoring. It serves both evaluative and preventive functions by identifying weaknesses, assessing compliance with credit procedures, ensuring reliable information, and supporting corrective actions. From Agency Theory and Risk Management Theory perspectives, effective internal control can reduce information asymmetry and strengthen credit risk management. Therefore, stronger Internal Control Audit is theoretically expected to be associated with lower Problematic Credit.

Credit SOP Compliance

Credit Standard Operating Procedure (SOP) Compliance refers to adherence to established procedures throughout the lending process, including credit applications, creditworthiness assessments, approvals, disbursements, documentation, and supervision. According to Compliance Theory and Risk Management Theory, consistent compliance promotes disciplined credit decisions, reduces errors and irregularities, and supports the assessment and control of credit risk. The COSO Internal Control Framework further emphasizes procedural compliance as part of effective control activities and monitoring. Therefore, higher Credit SOP Compliance is theoretically expected to be associated with lower Problematic Credit.

Credit Supervision

Credit Supervision refers to post-disbursement activities that monitor installment payments, evaluate credit quality, detect potential deterioration, follow up on delayed payments, and initiate corrective actions. Unlike Internal Control Audit, which evaluates the overall control system, Credit Supervision focuses on continuous monitoring of granted credit. From an Agency Theory perspective, effective supervision reduces information asymmetry and supports early detection of repayment problems. Previous studies indicate that continuous supervision facilitates timely corrective action (Tefbana et al., 2022; Ulandari, 2024; Wahyuningsih, 2021). Therefore, stronger Credit Supervision is theoretically expected to be associated with lower Problematic Credit.

Credit Risk Management

Credit Risk Management refers to the systematic identification, assessment, monitoring, and control of risks arising from lending activities to minimize potential credit losses. In this study, it is positioned as a moderating variable that may strengthen or weaken the relationships between Internal Control Audit, Credit SOP Compliance, Credit Supervision, and Problematic

Credit. Effective Credit Risk Management is theoretically expected to enhance these internal mechanisms through systematic risk assessment, monitoring, and mitigation.

Problematic Credit

Problematic Credit refers to a condition in which borrowers experience difficulties in meeting their credit obligations, including payment delays and potential default. In this study, Problematic Credit is measured through respondents' perceptions because objective data on actual problematic-credit ratios were unavailable. Therefore, the construct represents perceived problematic-credit conditions rather than actual financial ratios. As the dependent variable, it captures the perceived severity of repayment problems that may affect the financial performance and sustainability of savings and loan cooperatives.

Hypothesis Development

Based on Agency Theory, Risk Management Theory, Compliance Theory, and the COSO Internal Control Framework, Internal Control Audit, Credit SOP Compliance, and Credit Supervision are expected to be associated with lower levels of Problematic Credit. Internal Control Audit provides evaluative and preventive mechanisms for identifying weaknesses in the credit control system, improving the reliability of credit information, and supporting timely corrective action. Previous studies indicate that weaknesses in internal control and inconsistent credit procedures may increase exposure to problematic credit (Krismonika & Hasibuan, 2026; Nuryani et al., 2025), whereas effective internal control and audit-related mechanisms are associated with improved credit-risk outcomes (Akwaa-Sekyi & Moreno Gené, 2017; Sutarip, 2023). Accordingly, stronger Internal Control Audit is expected to be negatively associated with Problematic Credit.

H1: Internal Control Audit is negatively associated with Problematic Credit.

Credit SOP Compliance ensures that lending activities are conducted systematically and in accordance with established procedures. Greater compliance is expected to improve creditworthiness assessments, document verification, approval processes, and the assessment of borrowers' repayment capacity, thereby reducing the possibility of problematic credit.

H2: Credit SOP Compliance is negatively associated with Problematic Credit.

Credit Supervision enables cooperatives to continuously monitor credit conditions after disbursement, detect potential repayment problems at an early stage, and implement corrective measures. Consequently, more effective supervision is expected to reduce Problematic Credit.

H3: Credit Supervision is negatively associated with Problematic Credit.

The moderating role of Credit Risk Management is based on the assumption that internal control mechanisms become more effective when supported by systematic risk identification, measurement, monitoring, and control. Effective Credit Risk Management is therefore expected to strengthen the negative relationship between Internal Control Audit and Problematic Credit.

H4: Credit Risk Management strengthens the negative association between Internal Control Audit and Problematic Credit.

Similarly, Credit Risk Management is expected to enhance the effectiveness of Credit SOP Compliance by integrating risk considerations into credit assessment and decision-making. When credit procedures are consistently implemented alongside effective risk management, the cooperative is expected to identify potential credit risks more accurately and reduce the likelihood of problematic credit.

H5: Credit Risk Management strengthens the negative association between Credit SOP Compliance and Problematic Credit.

Finally, Credit Risk Management is expected to strengthen Credit Supervision by supporting continuous risk monitoring and facilitating the early identification of potential default. The

integration of credit supervision and risk management is therefore expected to improve the cooperative's ability to respond to deteriorating credit conditions.

H6: Credit Risk Management strengthens the negative association between Credit Supervision and Problematic Credit.

METHOD

This quantitative, cross-sectional survey examined the relationships among Internal Control Audit, Credit SOP Compliance, Credit Supervision, Credit Risk Management, and Problematic Credit, with Credit Risk Management as a moderator.

The 2025 PPKUKM records initially identified 69 Savings and Loan Cooperatives in East Jakarta, of which 27 met the research criteria after field verification. Purposive sampling selected a Chairperson, Administrator, Supervisor, Credit Officer, and Cooperative Member from each cooperative, yielding 135 respondents. Because respondents were nested within cooperatives, the individual served as the unit of analysis; therefore, the findings represent individual perceptions rather than organization-level effects. Data from 16 preliminary-test respondents were excluded.

Data were collected from June to July 2026 using a structured Google Forms questionnaire. Respondents were informed about the study's purpose and confidentiality. The five-point Likert-scale instrument contained 39 indicators: 12 for Internal Control Audit, 7 each for Credit SOP Compliance, Credit Supervision, and Credit Risk Management, and 6 for Problematic Credit.

PLS-SEM analysis was conducted using SmartPLS 4. The measurement model was assessed using outer loadings, AVE, HTMT, composite reliability, and Cronbach's alpha, while the structural model was evaluated using inner VIF, R^2, Adjusted R^2, and f^2. Hypotheses were tested using 5,000 bootstrap subsamples at a two-tailed 5% significance level. Moderation was examined using the Two-Stage approach through MRK × API, MRK × SOP, and MRK × PK. The moderator's direct effect was included but not hypothesized separately.

RESULT

Respondent Characteristics

The study included 135 respondents from 27 Savings and Loan Cooperatives in East Jakarta. Each cooperative was represented by a Chairperson, Administrator, Supervisor, Credit Officer, and Cooperative Member, resulting in 27 respondents per position. The 39-indicator instrument generated 5,265 responses across five constructs.

Table 1. Respondent Characteristics

Characteristic	Category	Frequency	Percentage
Gender	Male	63	46.67%
	Female	72	53.33%
Age	< 25 years	7	5.19%
	25–35 years	45	33.33%
	36–45 years	42	31.11%
	46–55 years	38	28.15%
	> 55 years	3	2.22%
Education	Junior High School	2	1.48%
	Senior High School	20	14.81%
	Diploma	50	37.04%
	Bachelor's Degree	46	34.07%
	Master's Degree	17	12.59%

Length of Employment	< 1 year	8	5.93%
	1–5 years	63	46.67%
	6–10 years	38	28.15%
	> 10 years	26	19.26%
Position	Chairperson	27	20.00%
	Administrator	27	20.00%
	Supervisor	27	20.00%
	Credit Officer	27	20.00%
	Cooperative Member	27	20.00%
Total		135	100.00%

Source: Primary data processed by the researcher (2026).

The respondent profile indicates relatively balanced representation across several demographic categories. Female respondents accounted for 53.33% of the sample, while male respondents represented 46.67%. Most respondents were between 25 and 55 years old, with the largest group aged 25–35 years (33.33%). In terms of educational background, Diploma and Bachelor's Degree holders constituted the majority of the sample. Regarding employment duration, 46.67% of respondents had worked for one to five years. Furthermore, each position category represented exactly 20% of the sample, ensuring equal representation among Chairpersons, Administrators, Supervisors, Credit Officers, and Cooperative Members.

Measurement Model Evaluation

The measurement model was evaluated using outer loadings, Average Variance Extracted (AVE), Heterotrait-Monotrait Ratio (HTMT), Composite Reliability, and Cronbach's Alpha. Of the 39 indicators, 37 had outer loading values above 0.70. Two indicators of Credit SOP Compliance, namely SOP1 and SOP7, had outer loadings of 0.691 and 0.682, respectively. These indicators were retained because the Credit SOP Compliance construct continued to satisfy convergent validity and construct reliability requirements, with an AVE of 0.528 and Composite Reliability of 0.886. Consequently, none of the 39 indicators were eliminated from the final measurement model.

Table 2. Measurement Model Assessment

Construct	Outer Loading Range	AVE	Composite Reliability	Cronbach's Alpha	Assessment
Internal Control Audit (API)	0.715–0.792	0.562	0.939	0.929	Valid and Reliable
Problematic Credit (KB)	0.705–0.779	0.563	0.885	0.845	Valid and Reliable
Credit Risk Management (MRK)	0.701–0.779	0.543	0.892	0.862	Valid and Reliable
Credit Supervision (PK)	0.728–0.766	0.551	0.896	0.865	Valid and Reliable
Credit SOP Compliance (SOP)	0.682–0.773	0.528	0.886	0.851	Valid and Reliable

Source: Data processed by the researcher using SmartPLS 4 (2026).

All constructs had AVE values above the recommended threshold of 0.50, ranging from 0.528 to 0.563, indicating adequate convergent validity. Problematic Credit had the highest AVE

value of 0.563, followed by Internal Control Audit at 0.562, Credit Supervision at 0.551, Credit Risk Management at 0.543, and Credit SOP Compliance at 0.528.

Discriminant validity was also established. The HTMT values among the main constructs ranged from 0.658 to 0.867, while those involving the interaction constructs ranged from 0.248 to 0.775. All values were below the threshold of 0.90, indicating that the constructs were empirically distinguishable from one another.

Furthermore, Composite Reliability values ranged from 0.885 to 0.939, while Cronbach's Alpha values ranged from 0.845 to 0.929. All values exceeded the minimum threshold of 0.70. Therefore, the measurement model demonstrated satisfactory convergent validity, discriminant validity, and internal consistency reliability, and all 39 indicators were retained for the structural model analysis.

Structural Model Evaluation

The structural model was evaluated using the Inner Variance Inflation Factor (Inner VIF), coefficient of determination (R^2), Adjusted R^2, and effect size (f^2). All Inner VIF values were below the threshold of 5.00, indicating that no critical multicollinearity problems were present among the predictor constructs.

Table 3. Structural Model Assessment

Predictor/Relationship	Inner VIF	f^2	Effect Size
API → KB	3.547	0.017	No substantive effect
MRK → KB	3.473	0.032	Small
PK → KB	3.519	0.009	No substantive effect
SOP → KB	3.148	0.054	Small
MRK × API → KB	3.450	0.005	No substantive effect
MRK × SOP → KB	3.248	0.006	No substantive effect
MRK × PK → KB	3.361	0.000	No substantive effect

Source: Data processed by the researcher using SmartPLS 4 (2026).

The Inner VIF values ranged from 3.148 to 3.547. All values were below the adopted threshold of 5.00, indicating that no critical multicollinearity was identified among the main predictor constructs and interaction terms. The model explained 46.1% of the variance in Problematic Credit ($R^2 = 0.461$; Adjusted $R^2 = 0.431$), while the remaining 53.9% was not explained by the predictors included in the model. Based on the criteria adopted in this study, the model's explanatory power was categorized as weak. Credit SOP Compliance had the largest effect size ($f^2 = 0.054$), followed by Credit Risk Management ($f^2 = 0.032$), both of which represented small effects. Internal Control Audit ($f^2 = 0.017$), Credit Supervision ($f^2 = 0.009$), and all interaction terms ($f^2 = 0.000$–0.006) showed no substantive effects.

Direct Relationships and Bootstrapping Results

Hypothesis testing was conducted using a bootstrapping procedure with 5,000 subsamples. Statistical significance was determined using a t-statistic greater than 1.96 and a p-value below 0.05. The direction of the path coefficient was also considered when determining whether a hypothesis was supported.

Table 4. Direct Relationship Results

Relationship	Path Coefficient (O)	t-statistic	p-value	Statistical Result
API → KB	0.182	1.396	0.163	Not significant
MRK → KB	0.244	1.939	0.053	Not significant
PK → KB	0.131	0.946	0.344	Not significant
SOP → KB	0.304	2.678	0.007	Significant

Source: Data processed by the researcher using SmartPLS 4 (2026).

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Internal Control Audit had a positive path coefficient of 0.182, with a t-statistic of 1.396 and a p-value of 0.163. However, its relationship with Problematic Credit was not statistically significant, and the positive direction was contrary to the negative relationship proposed in H1. Therefore, H1 was not supported.

Credit SOP Compliance had a path coefficient of 0.304, a t-statistic of 2.678, and a p-value of 0.007, indicating a statistically significant positive association with Problematic Credit. Because H2 proposed a negative relationship, the hypothesis was not supported despite the statistical significance of the coefficient.

Credit Supervision had a positive path coefficient of 0.131, with a t-statistic of 0.946 and a p-value of 0.344. The relationship with Problematic Credit was not statistically significant and was inconsistent with the negative relationship proposed in H3. Therefore, H3 was not supported.

The direct relationship between Credit Risk Management and Problematic Credit had a coefficient of 0.244, a t-statistic of 1.939, and a p-value of 0.053. Although close to the 5% significance threshold, the relationship remained statistically nonsignificant. This path was retained as the moderator's main effect but was not formulated as a separate hypothesis.

Moderating Effect of Credit Risk Management

The moderating role of Credit Risk Management was examined through three interaction terms: MRK × API, MRK × SOP, and MRK × PK.

Table 5. Moderating Effect Results

Interaction	Path Coefficient (O)	t-statistic	p-value	Moderating Effect	Hypothesis
MRK × API → KB	0.096	0.700	0.484	Not significant	H4 Not Supported
MRK × SOP → KB	0.106	0.938	0.348	Not significant	H5 Not Supported
MRK × PK → KB	−0.003	0.023	0.982	Not significant	H6 Not Supported

Source: Data processed by the researcher using SmartPLS 4 (2026).

The interaction between Credit Risk Management and Internal Control Audit had a coefficient of 0.096, a t-statistic of 0.700, and a p-value of 0.484. The interaction with Credit SOP Compliance had a coefficient of 0.106, a t-statistic of 0.938, and a p-value of 0.348, while the interaction with Credit Supervision had a coefficient of -0.003, a t-statistic of 0.023, and a p-value of 0.982. None of the interaction effects were statistically significant. Therefore, Credit Risk Management did not significantly moderate the relationships of Internal Control Audit, Credit SOP Compliance, or Credit Supervision with Problematic Credit. Accordingly, H4, H5, and H6 were not supported. Because the interactions were not significant, their coefficient signs were not interpreted as evidence of strengthening or weakening the relationships.

Summary of Hypothesis Testing

Table 6. Summary of Hypothesis Testing

Hypothesis	Relationship	Coefficient	t-statistic	p-value	Result	Decision
H1	API → KB	0.182	1.396	0.163	Not significant	Not Supported
H2	SOP → KB	0.304	2.678	0.007	Significant, but opposite to the hypothesized direction	Not Supported

H3	PK → KB	0.131	0.946	0.344	Not significant	Not Supported
H4	MRK × API → KB	0.096	0.700	0.484	Moderating effect not significant	Not Supported
H5	MRK × SOP → KB	0.106	0.938	0.348	Moderating effect not significant	Not Supported
H6	MRK × PK → KB	−0.003	0.023	0.982	Moderating effect not significant	Not Supported

Source: Data processed by the researcher using SmartPLS 4 (2026).

Overall, none of the six hypotheses were supported. Internal Control Audit and Credit Supervision were not significantly associated with Problematic Credit. Credit SOP Compliance was the only independent variable significantly associated with Problematic Credit; however, the association was positive, whereas H2 proposed a negative relationship. Credit Risk Management did not significantly moderate any of the three relationships examined. These findings provide the basis for the subsequent Discussion, which interprets the results in relation to the theoretical framework, previous studies, and the characteristics of Savings and Loan Cooperatives in East Jakarta.

DISCUSSION

The findings provide several insights into the relationships among Internal Control Audit, Credit SOP Compliance, Credit Supervision, Credit Risk Management, and Problematic Credit in Savings and Loan Cooperatives in East Jakarta. Overall, none of the six hypotheses were supported. Internal Control Audit and Credit Supervision were not significantly associated with Problematic Credit, while Credit SOP Compliance was significantly and positively associated with Problematic Credit, contrary to the hypothesized negative relationship. Credit Risk Management did not significantly moderate any of the three relationships. Because the study used a cross-sectional design and perception-based measures, these findings should not be interpreted as evidence of causal relationships.

Internal Control Audit and Problematic Credit

Internal Control Audit had a positive but statistically nonsignificant relationship with Problematic Credit ($\beta = 0.182$; $t = 1.396$; $p = 0.163$; $f^2 = 0.017$). Therefore, H1 was not supported. Descriptively, API11, representing routine reviews of credit implementation, had the lowest mean (4.170), suggesting that routine reviews and follow-up were less strongly implemented than other internal control activities.

The nonsignificant relationship suggests that stronger perceived internal control did not necessarily correspond to lower Problematic Credit. Routine reviews, timely information, and corrective action may be necessary for internal control mechanisms to operate effectively. Credit outcomes may also be associated with borrowers' changing financial conditions and repayment behavior, which are not fully controlled by cooperatives.

Credit SOP Compliance and Problematic Credit

Credit SOP Compliance was significantly and positively associated with Problematic Credit ($\beta = 0.304$; $t = 2.678$; $p = 0.007$), contrary to the negative relationship proposed in H2. Therefore, H2 was not supported. Given the cross-sectional design, this result represents an association and does not indicate that stronger SOP compliance causes higher Problematic Credit.

Descriptively, Credit SOP Compliance had an overall mean of 4.294. SOP3 had the highest mean (4.356), while SOP4, related to borrower information verification, had the lowest (4.148). This suggests that formal credit procedures may be implemented more strongly than substantive verification. Credit procedures may also have been strengthened after credit problems emerged, although this cannot be confirmed from the study design.

This finding is contextually consistent with Mukarramah et al. (2025) and Rony et al. (2025), indicating that credit procedures and verification do not necessarily eliminate problematic credit. Therefore, SOP compliance should extend beyond administrative fulfillment to substantive verification of repayment capacity and potential credit risks.

Credit Supervision and Problematic Credit

Credit Supervision had a positive but statistically nonsignificant relationship with Problematic Credit ($\beta = 0.131$; $t = 0.946$; $p = 0.344$), contrary to the negative relationship proposed in H3. Therefore, H3 was not supported. Descriptively, follow-up on delayed payments (PK6) had the highest mean (4.296), while corrective action for problematic credit (PK7) had the lowest mean (4.148), suggesting that initial monitoring was stronger than comprehensive corrective action. The nonsignificant relationship may reflect a greater emphasis on monitoring and responding to payment delays than on systematic corrective measures. However, the cross-sectional design cannot determine whether supervision preceded or intensified after credit problems emerged. Credit supervision should therefore integrate monitoring with repayment-capacity reassessment, borrower communication, and timely corrective action.

This finding is consistent with Nyayiera and Muchiri (2023), Rony et al. (2025), and Saffana (2025), which suggest that payment enforcement and reactive monitoring do not always prevent problematic credit. In contrast, Wahyuningsih (2021) and Ulandari (2024) emphasize the importance of continuous supervision, suggesting that differences in institutional characteristics and follow-up mechanisms may influence its effectiveness.

Moderating Role of Credit Risk Management

Credit Risk Management did not significantly moderate any of the relationships examined. Its interactions with Internal Control Audit ($\beta = 0.096$; $p = 0.484$), Credit SOP Compliance ($\beta = 0.106$; $p = 0.348$), and Credit Supervision ($\beta = -0.003$; $p = 0.982$) were statistically nonsignificant. Therefore, H4, H5, and H6 were not supported. Because the interaction terms were nonsignificant, their coefficient directions were not interpreted as evidence that Credit Risk Management strengthened or weakened the relationships.

The absence of significant moderation suggests that Credit Risk Management may not yet function as an integrated mechanism connecting internal control, procedural compliance, and credit supervision with credit risk mitigation. Internal reviews and monitoring may not always be systematically translated into updated borrower risk assessments and corrective actions. Similarly, relatively lower evaluations of borrower information verification, repayment-capacity assessment, and creditworthiness guidelines suggest potential limitations in integrating credit procedures with risk management.

These findings are contextually consistent with Saffana (2025), Chairunnisa and Hartanti (2023), Nuryani et al. (2025), Nyayiera and Muchiri (2023), and Rony et al. (2025), which indicate limitations in risk management, monitoring, and credit control practices. In contrast, Sutarip (2022) found a significant moderating role of Credit Risk Management in rural banks, possibly reflecting differences in institutional structures, information systems, and risk management practices.

Overall, higher perceived levels of internal control, credit procedures, supervision, and risk management did not necessarily correspond to lower perceived Problematic Credit. Their effectiveness may depend on their integration into credit assessment, continuous monitoring, risk evaluation, and corrective action. The model explained 46.1% of the variance in Problematic Credit, while the remaining 53.9% remained unexplained by the predictors included in the model.

CONCLUSION

This study examined the relationships of Internal Control Audit, Credit SOP Compliance, and Credit Supervision with Problematic Credit as well as the moderating role of Credit Risk Management in 27 Savings and Loan Cooperatives in East Jakarta. Based on 135 respondents and PLS-SEM analysis using SmartPLS 4, none of the six hypotheses were supported. Internal Control Audit and Credit Supervision had positive but statistically nonsignificant relationships with Problematic Credit. Credit SOP Compliance was significantly and positively associated with Problematic Credit ($\beta = 0.304$; $p = 0.007$), contrary to the hypothesized negative relationship. Given the cross-sectional design, this finding indicates an association rather than a causal effect.

Credit Risk Management did not significantly moderate the relationships between Internal Control Audit, Credit SOP Compliance, Credit Supervision, and Problematic Credit. The model explained 46.1% of the variance in Problematic Credit ($R^2 = 0.461$; Adjusted $R^2 = 0.431$), indicating that 53.9% of the variance remained unexplained by the predictors included in the model.

The findings contribute to the literature on credit management in Savings and Loan Cooperatives by integrating internal control, SOP compliance, credit supervision, and Credit Risk Management within a moderating framework. Practically, cooperatives should move beyond administrative compliance by strengthening borrower information verification, repayment-capacity assessment, post-disbursement monitoring, risk evaluation, and timely corrective actions. Cooperative members should provide accurate financial information, while regulatory authorities may strengthen supervision of the substantive implementation of credit procedures.

This study has several limitations. The purposive sample of 27 cooperatives in East Jakarta limits the generalizability of the findings. All constructs were measured using self-reported questionnaires collected during the same period, creating potential common method bias. Moreover, five respondents were nested within each cooperative, while the individual-level PLS-SEM analysis did not account for within-cooperative clustering. Therefore, the findings should be interpreted as associations among individual perceptions rather than organization-level effects. Problematic Credit was also measured through perceptions rather than objective financial indicators. Finally, the cross-sectional design does not support causal conclusions.

Future research should include broader and more diverse cooperative samples, apply longitudinal or multilevel designs, and collect data from multiple sources or periods. Perception-based measures should be combined with objective data, such as non-performing loan ratios, arrears, collectibility records, loan restructuring data, and financial statements. Additional factors, including borrowers' economic conditions, income changes, loan utilization, collateral quality, business performance, and payment discipline, may also be examined.

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