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The Effect of Management Information Systems and Business Assistant Mentoring on Performance through Cooperative Governance

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Abstract

The establishment of the Merah Putih Village/Sub-District Cooperative aims to strengthen local economic development through improved governance and sustainable cooperative performance. This study examines the effects of the management information system and business assistant mentoring on cooperative performance, with cooperative governance as a mediating variable. A quantitative explanatory approach was employed using survey data collected from 150 cooperative administrators and members in North Sumatra Province. Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings reveal that management information systems and business assistant mentoring have positive and significant effects on cooperative governance and cooperative performance. Business assistant mentoring demonstrates the strongest influence on cooperative governance, while cooperative governance significantly enhances cooperative performance and mediates the relationships between management information systems, business assistant mentoring, and performance. These findings indicate that digital systems and managerial mentoring generate greater organizational benefits when integrated with effective governance practices. This study contributes to the cooperative management literature by integrating digital transformation, managerial capacity development, and governance into a unified analytical framework. It provides practical recommendations for policymakers to strengthen cooperative sustainability through coordinated digitalization, continuous mentoring, and governance improvement.

Keywords

Business Assistant Mentoring, Cooperative Governance, Cooperative Performance, Management Systems Information.

1. Introduction

Cooperatives play a strategic role in Indonesia's economic development by supporting inclusive economic growth, strengthening local enterprises, and improving community welfare (Masyhuri, 2024). As member-based economic organizations, cooperatives emphasize collective participation, shared ownership, and member-oriented services as fundamental principles in achieving sustainable economic development (Erstiawan & Soebijono, 2018). In the context of village economic development, the establishment of the Merah Putih Village/Sub-district Cooperative (*Koperasi Desa/Kelurahan Merah Putih/KDKMP*) represents an institutional initiative to strengthen local economic potential, expand community economic services, and encourage cooperatives to become more modern, transparent, and accountable organizations (Sunaryo et al., 2023; Setyabudi, 2025). However, achieving these objectives requires effective management systems, adequate human resource capacity, and strong governance mechanisms to ensure sustainable cooperative performance.

Digital transformation has become an important factor in improving organizational effectiveness, including cooperative management. The implementation of the Merah Putih Village/Sub-district Cooperative Management Information System (*Sistem Informasi Manajemen Koperasi Desa/Kelurahan Merah Putih/SIMKOPDES*) as a management information system for cooperation is expected to strengthen administrative processes, information management, operational monitoring, and managerial decision-making. A management information system integrates technology, data, procedures, and organizational resources to provide relevant information that supports efficiency and strategic decisions (Laudon & Laudon, 2004; Stair et al., 2015). Furthermore, according to DeLone and McLean (2003), the information systems success model explains that system quality, information quality, user satisfaction, and net benefits determine the effectiveness of information system implementation. Empirical evidence by Aldhaban (2024) also indicates that management information system quality contributes positively to organizational performance by improving information accuracy, operational control, and decision-making effectiveness.

Despite these expectations, KDKMP implementation in North Sumatra Province still faces challenges related to operational readiness and management effectiveness. Although the establishment of KDKMP continues to expand, the utilization of information systems, administrative management, business development, and institutional governance practices requires further strengthening. These conditions indicate that the availability of digital systems alone does not automatically improve cooperative performance. Information technology can generate organizational value only when it is integrated with appropriate business processes, managerial capabilities, and organizational transformation (Brynjolfsson & Hitt, 2000; Melville et al., 2004). Therefore, effective SIMKOPDES utilization requires not only technological infrastructure but also governance mechanisms that enable cooperatives to translate information into meaningful managerial actions.

In addition to digital capability, business assistant represents another important mechanism for strengthening KDKMP capacity. Business assistant mentoring focuses on improving administrators' competencies in business planning, institutional administration, licensing procedures, financing preparation, and operational management. Training and mentoring effectiveness depends on the quality of learning processes, behavioral changes, and the ability of participants to apply acquired knowledge in organizational practices (Bates, 2004; Kirkpatrick & Kirkpatrick, 2006). Previous studies also demonstrate that mentoring, training, and managerial assistance contribute to improving organizational capabilities and business outcomes (Rahmawati, 2020; Rahmiyanti & Sari, 2022).

Furthermore, cooperative governance plays a central role in determining how technological resources and managerial assistance influence organizational performance. Cooperative governance reflects principles of transparency, accountability, responsibility, and fairness that guide organizational decision-making and management practices (Komite Nasional Kebijakan Governansi, 2024). Effective governance enables cooperatives to optimize resources, strengthen internal control, and improve member trust and organizational sustainability (Jamaluddin et al., 2023; Sunaryo et al., 2023). However, previous studies have generally examined information systems, mentoring, and governance as separate factors, while limited research has investigated their integrated influence on cooperative performance through a mediating mechanism. Moreover, empirical studies examining KDKMP as a newly established village-based cooperative institution remain limited, particularly in North Sumatra Province.

To address this research gap, this study develops an integrated model examining the effects of SIMKOPDES as a management information system and business assistant mentoring on KDKMP performance, with cooperative governance as a mediating variable. The novelty of this research lies in integrating digital transformation, managerial capacity development, and governance perspectives within a single analytical framework. This approach provides a more comprehensive explanation of how technological systems and institutional support contribute to cooperative performance through governance improvement.

This study aims to analyze the influence of a management information system and business assistant mentoring on cooperative performance and examine the mediating role of cooperative governance. This research contributes to cooperative management literature by extending understanding of how digital systems and mentoring mechanisms enhance organizational performance. The findings provide implications for policymakers, cooperative managers, and stakeholders in strengthening cooperative sustainability through effective digital utilization, continuous mentoring, and improved governance practices.

2. Literature Review and Hypothesis Development

2.1. The Effect on Cooperative Governance

Management information systems represent an organizational mechanism that integrates technology, information, procedures, and human resources to support effective management processes. In cooperative organizations, the availability of accurate and timely information is essential for strengthening transparency, accountability, and managerial control. According to DeLone and McLean's (2003) information systems success model, the effectiveness of information systems is determined by system quality, information quality, service quality, user satisfaction, and the resulting organizational benefits. Furthermore, management information systems enable organizations to improve operational coordination, reduce information asymmetry, and support evidence-based decision-making (Laudon & Laudon, 2004; Aldhaban, 2024). Within KDKMP, the implementation of SIMKOPDES is expected to strengthen cooperative governance by providing structured information regarding administration, reporting, business activities, and organizational performance. Therefore, effective utilization of SIMKOPDES can enhance governance practices through improved transparency, monitoring mechanisms, and managerial accountability.

In addition to technological capability, strengthening cooperative governance requires continuous improvement of managerial competence through business assistant mentoring. Mentoring activities provide guidance, knowledge transfer, and managerial support to help cooperative administrators improve their ability to manage organizational resources effectively. The Kirkpatrick evaluation framework

explains that effective training and mentoring should generate improvements in participant knowledge, behavioral changes, and organizational outcomes (Kirkpatrick & Kirkpatrick, 2006). In the cooperative context, mentoring assistance can improve administrative discipline, managerial skills, and institutional capacity, which are important elements of good governance (Rahmawati, 2020; Rahmiyanti & Sari, 2022). Thus, business assistant mentoring is expected to strengthen cooperative governance by improving the capability of administrators to implement transparency, accountability, responsibility, and effective management practices.

H1: Management information systems have a positive and significant effect on cooperative governance.

H2: Business assistant mentoring has a positive and significant effect on cooperative governance.

2.2. The Effect on Cooperative Performance

Cooperative performance refers to the extent to which cooperatives achieve their organizational objectives through effective resource management, operational efficiency, member service quality, and sustainable business development. Cooperative performance is a multidimensional concept that cannot be assessed solely through financial indicators but also requires evaluation of internal processes, stakeholder benefits, and organizational learning capacity. The balanced scorecard approach explains that organizational performance consists of financial, beneficiary, internal process, and learning and growth perspectives, which provide a comprehensive framework for assessing organizational effectiveness (Kaplan & Norton, 2000). In this context, management information systems play an important role in improving cooperative performance by providing accurate information, supporting operational control, and facilitating strategic decision-making. Information technology contributes to organizational performance when it is effectively integrated with business processes and managerial practices (Brynjolfsson & Hitt, 2000; Melville et al., 2004). Therefore, the implementation of SIMKOPDES is expected to improve cooperative performance through better administrative management, monitoring processes, and data-driven decision-making.

Besides technological capability, business assistant mentoring is an important factor in improving cooperative performance, particularly for newly established cooperatives requiring managerial support to develop sustainable operations. This mentoring provides guidance, knowledge transfer, and problem-solving assistance to strengthen administrators' competencies in business planning, administration, financial management, and operational strategies. Effective mentoring depends on facilitation quality, material relevance, and the implementation of acquired knowledge in organizational practices (Kirkpatrick & Kirkpatrick, 2006). Previous studies by Tharenou et al. (2007) show that mentoring and training programs enhance organizational performance by improving managerial capabilities and operational effectiveness. Therefore, continuous mentoring is expected to strengthen cooperative capacity and contribute positively to cooperative performance (Rahmawati, 2020; Rahmiyanti & Sari, 2022).

H3: Management information systems have a positive and significant effect on cooperative performance.

H4: Business assistant mentoring has a positive and significant effect on cooperative performance.

2.3. The Effect of Cooperative Governance on Cooperative Performance

Cooperative governance represents a management framework that regulates organizational structures, decision-making processes, and relationships among cooperative members, administrators, and supervisory bodies to ensure effective and sustainable operations (Jamaluddin et al., 2023). In cooperative organizations, governance is essential because cooperatives have a unique ownership structure in which members act as both owners and users of services. Therefore, effective governance requires transparency, accountability, responsibility, and fairness to maintain member trust and organizational legitimacy. The stewardship theory perspective explains that managers can act as responsible stewards who prioritize organizational goals and stakeholder interests when supported by appropriate governance mechanisms (Davis et al., 1997). In this context, cooperative governance provides a foundation for aligning managerial actions with cooperative principles and ensuring that organizational resources are managed effectively. According to Jamaluddin et al. (2023) and Sunaryo et al. (2023), strong governance practices contribute to improved cooperative effectiveness by strengthening internal control, decision-making processes, and managerial accountability.

Within KDKMP, cooperative governance is essential because newly established cooperatives require structured management practices to achieve sustainable performance. Effective governance mechanisms improve operational efficiency, strengthen accountability, and optimize organizational resources through transparency, clear role distribution, supervision, and responsible management practices. Strong governance also enables cooperatives to maximize the benefits of digital systems and managerial assistance by integrating these resources into effective organizational processes (Erstiawan & Soebijono, 2018). Previous studies by Jamaluddin et al. (2023) and Savitri et al. (2025) confirm that cooperative governance positively influences performance by improving management quality, accountability, and organizational sustainability. Therefore, stronger cooperative governance is expected to enhance cooperative performance through a more accountable and efficient management system.

H5: Cooperative governance has a positive and significant effect on cooperative performance.

2.4. The Effect of Cooperative Governance as a Mediator

Cooperative governance serves as a mediating mechanism that explains how technological resources are transformed into improved organizational performance. The implementation of management information systems does not automatically enhance performance unless supported by effective governance capabilities in utilizing information. Based on DeLone and McLean (2003), the information systems success model, information systems generate organizational benefits when information is effectively used to support management processes and decision-making. In KDKMP, SIMKOPDES provides structured data, reporting systems, and operational information; however, its effectiveness depends on governance practices that ensure transparency, accountability, and responsible information management. Strong cooperative governance enables administrators to utilize digital information strategically, strengthen internal control, and improve organizational performance (Erstiawan & Soebijono, 2018; Jamaluddin et al., 2023). Therefore, cooperative governance is expected to bridge the relationship between SIMKOPDES implementation and cooperative performance.

Similarly, business assistant mentoring may contribute to cooperative performance of improving cooperative governance mechanisms. Mentoring programs provide knowledge, guidance, and managerial support that can strengthen administrators' capabilities in implementing effective organizational practices.

However, the impact of mentoring is not limited to individual competency improvement but also extends to institutional development through improved accountability, management procedures, and decision-making processes. From a training evaluation perspective, mentoring effectiveness is reflected in the extent to which acquired knowledge produces behavioral changes and organizational outcomes (Bates, 2004; Kirkpatrick & Kirkpatrick, 2006). In cooperative organizations, strengthened managerial capacity through mentoring can encourage the implementation of better governance practices, which subsequently contribute to improved performance (Rahmawati, 2020; Savitri et al., 2025). Thus, cooperative governance is positioned as an essential mechanism that explains the relationship between business assistant mentoring and cooperative performance.

H6: Cooperative governance mediates the effect of management information systems on cooperative performance.

H7: Cooperative governance mediates the effect of business assistant mentoring on cooperative performance.

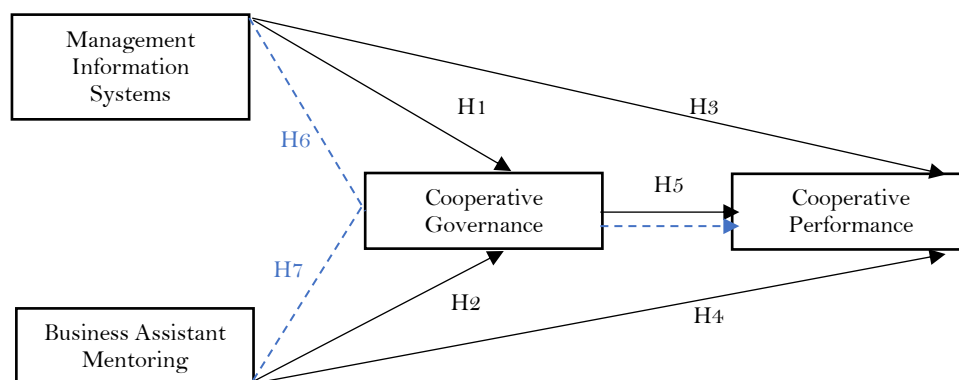


Figure 1. Research Framework

Figure 1 presents the proposed research framework, where management information systems and business assistant mentoring are hypothesized to influence cooperative performance both directly and indirectly through cooperative governance. This framework highlights the mediating role of cooperative governance in strengthening the effects of the two independent variables on cooperative performance.

3. Methods

This study employed a quantitative approach with an explanatory research design. This design was selected because the study aims to examine causal relationships among variables, namely management information systems, business assistant mentoring, cooperative governance, and cooperative performance. The explanatory approach enables the researcher to test the proposed hypotheses and analyze the direct and indirect relationships among constructs using an empirical model.

The population of this study consisted of KDKMP operating in North Sumatra Province. Based on SIMKOPDES data screening conducted on February 23, 2026, a total of 1,028 KDKMP met the research criteria and were identified as the target population. The sampling technique used was purposive sampling with the following criteria: (1) KDKMP has an active SIMKOPDES account, (2) KDKMP owns and manages at least one business outlet, and (3) KDKMP has received or is currently receiving business assistant mentoring. The unit of analysis was individuals who served as KDKMP administrators and/or members. The study involved 150

respondents, which fulfilled the minimum requirement for multivariate analysis, namely a sample size of at least five times the number of empirical indicators (Hair et al., 2019). Data were collected through a structured questionnaire using a five-point Likert scale ranging from strongly disagree (1) to strongly agree (5). The questionnaire was distributed online through Google Forms with support from the North Sumatra Province Cooperatives and SMEs Service, Provincial Project Management Office (PMO), business assistants, and KDKMP representatives.

The measurement of research variables was adapted from relevant theoretical frameworks and previous studies. Management information systems were measured through system quality, information quality, and user satisfaction dimensions, with indicators including ease of use, access speed, data security, accuracy, completeness, report availability, and feature suitability (DeLone & McLean, 2003; Aldhaban, 2024). Business assistant mentoring was measured using the Kirkpatrick evaluation framework consisting of reaction, learning, and behavior dimensions, represented by material suitability, facilitator communication, understanding of SOPs and management practices, application of knowledge, and changes in work ethic (Kirkpatrick & Kirkpatrick, 2006). Furthermore, cooperative governance was measured through the dimensions of transparency, accountability, responsibility, and fairness, using indicators such as information access, task distribution, supervision, compliance, social responsibility, and service equality (Jamaluddin et al., 2023). Meanwhile, cooperative performance was measured using the balanced scorecard approach, covering financial, beneficiary, internal process, and learning and growth perspectives. The indicators included cost efficiency, revenue growth, member satisfaction and participation, program planning, administration, human resource training, technology utilization, and innovation capability (Kaplan & Norton, 2000; Siahaan et al., 2024).

Data analysis was performed using Structural Equation Modeling-Partial Least Squares (SEM-PLS) with SmartPLS software. The measurement model was evaluated through loading factors, Average Variance Extracted (AVE), Cronbach's Alpha, and Composite Reliability to assess validity and reliability. The structural model was evaluated using Variance Inflation Factor (VIF), R-Square (R^2), F-Square (F^2), Q-Square (Q^2), and hypothesis testing through bootstrapping procedures. Since the hypotheses were directional, the statistical test applied a one-tailed significance level of 5% with a t-statistic threshold greater than 1.645.

4. Results

Before evaluating the measurement and structural models, descriptive statistics were analyzed to provide an overview of the respondents' perceptions of each research variable. The analysis summarizes the distribution of the data using the total score, mean, minimum value, maximum value, and standard deviation for each construct. The descriptive statistics for all variables are presented in Table 1.

Table 1. Descriptive Statistics of Variable

Variable	Sum	Mean	Min	Max	Standard Deviation
Management Information System	5,060	3.748	1	5	1.060
Business Assistant Mentoring	4,600	3.833	1	5	1.050
Cooperative Governance	6,332	3.838	1	5	1.042
Cooperative Performance	5,973	3.620	1	5	1.161

Table 1 presents the descriptive statistics of the study variables. Among the four constructs, cooperative governance has the highest mean score (3.838), followed closely by business assistant mentoring (3.833), management information system (3.748), and cooperative performance (3.620). The mean values, all exceeding 3.50

on a five-point Likert scale, indicate that respondents generally reported favorable perceptions of all constructs. The standard deviation values, ranging from 1.042 to 1.161, suggest a moderate level of response variability, while the minimum and maximum scores of 1 and 5 confirm that the full range of response categories was utilized. These findings indicate that the respondents perceived the implementation of management information systems, business assistance, cooperative governance, and cooperative performance to be relatively high.

Table 2. Reliability and Convergent Validity

Construct	Cronbach's Alpha	rho_A	Composite Reliability	AVE
Cooperative Performance	0.952	0.955	0.958	0.678
Business Assistant Mentoring	0.931	0.936	0.943	0.676
Management Information System	0.938	0.943	0.948	0.670
Cooperative Governance	0.945	0.947	0.952	0.645

Based on Table 2, the reliability and convergent validity assessment of the measurement model. All constructs demonstrate excellent internal consistency, with Cronbach's alpha values ranging from 0.931 to 0.952, rho_A values between 0.936 and 0.955, and composite reliability values ranging from 0.943 to 0.958, all exceeding the recommended threshold of 0.70. In addition, the AVE values range from 0.645 to 0.678, surpassing the minimum criterion of 0.50, indicating satisfactory convergent validity. These results confirm that the measurement model is both reliable and valid, suggesting that all indicators consistently and adequately represent their respective latent constructs.

Table 3. Structural Model Evaluation

Path/Endogenous Variable	VIF	F-Square (f^2)	R-Square (R^2)	Q-Square (Q^2)
Business Assistant Mentoring → Cooperative Performance	2.219	0.078	–	–
Business Assistant Mentoring → Cooperative Governance	1.752	0.267	–	–
Management Information System → Cooperative Performance	1.992	0.062	–	–
Management Information System → Cooperative Governance	1.752	0.137	–	–
Cooperative Governance → Cooperative Performance	2.146	0.205	–	–
Cooperative Performance	–	–	0.616	0.509
Cooperative Governance	–	–	0.534	0.511

Table 3 shows the evaluation of the structural model, indicating that all predictor variables have VIF values ranging from 1.752 to 2.219, which are below the recommended threshold of 5.0, confirming the absence of multicollinearity. The effect size (f^2) results show that business assistant mentoring has a moderate effect on cooperative governance ($f^2 = 0.267$) and a small effect on cooperative performance ($f^2 = 0.078$), while the management information system exhibits a small effect on cooperative governance ($f^2 = 0.137$) and cooperative performance ($f^2 = 0.062$). Cooperative governance also has a moderate effect on cooperative performance ($f^2 = 0.205$). Furthermore, the model explains 53.4% of the variance in cooperative governance ($R^2 = 0.534$) and 61.6% of the variance in cooperative performance ($R^2 = 0.616$), indicating moderate explanatory power. The Q^2 values of 0.511 for cooperative governance and 0.509 for cooperative performance further demonstrate that the model has strong predictive relevance.

Table 4. Hypothesis Testing

Path	Original Sample	t-statistics	Decision
Management Information System → Cooperative Governance	0.334	3.247	Accepted
Business Assistant Mentoring → Cooperative Governance	0.467	4.439	Accepted
Management Information System → Cooperative Performance	0.218	2.047	Accepted
Business Assistant Mentoring → Cooperative Performance	0.258	2.170	Accepted
Cooperative Governance → Cooperative Performance	0.411	3.086	Accepted
Management Information System → Cooperative Governance → Cooperative Performance	0.137	2.203	Accepted
Business Assistant Mentoring → Cooperative Governance → Cooperative Performance	0.192	2.294	Accepted

Table 4 presents the results of the hypothesis testing, showing that all proposed relationships are statistically significant and supported. The management information system has a positive and significant effect on cooperative governance ($\beta = 0.334$; $t = 3.247$) and cooperative performance ($\beta = 0.218$; $t = 2.047$). Likewise, the business assistant mentoring demonstrates a stronger positive influence on cooperative governance ($\beta = 0.467$; $t = 4.439$) and also significantly improves cooperative performance ($\beta = 0.258$; $t = 2.170$). Furthermore, cooperative governance positively affects cooperative performance ($\beta = 0.411$; $t = 3.086$), indicating that better governance contributes to higher organizational performance. The mediation analysis also confirms that cooperative governance significantly mediates the effects of the management information system ($\beta = 0.137$; $t = 2.203$) and the business assistant mentoring ($\beta = 0.192$; $t = 2.294$) on cooperative performance. These findings suggest that strengthening management information systems and business assistance enhances cooperative performance both directly and indirectly through improved cooperative governance.

5. Discussion

The findings indicate that the management information system has a positive and significant effect on cooperative governance. This suggests that implementing SIMKOPDES improves governance by providing more accurate information, enhancing reporting transparency, and supporting evidence-based decision-making. Digitalized administrative processes also strengthen accountability and internal control within cooperatives. These findings are consistent with Wibowo (2025) and Faried et al. (2025), who reported that digital information systems improve governance quality by increasing transparency, administrative efficiency, and organizational accountability. They also support Laudon and Laudon (2004), who argued that information systems are strategic organizational resources that facilitate effective governance through timely and reliable information.

The results further show that business assistant mentoring has a positive and significant effect on cooperative governance, representing the strongest relationship in the structural model. This finding implies that continuous mentoring plays a critical role in improving governance by strengthening managers' understanding of standard operating procedures, financial administration, business planning, reporting, and internal supervision. Business assistants mentoring therefore act as a bridge between government policy and its practical implementation at the

cooperative level. This finding is consistent with Mardiantoro et al. (2026), who emphasized that institutional support and capacity-building programs are essential for strengthening cooperative governance. Similarly, the International Cooperative Alliance in 2021 highlighted managerial mentoring as a key driver of sustainable cooperative development.

The study also reveals that both the management information system and business assistant mentoring have positive and significant effects on cooperative performance. These findings indicate that digital systems and mentoring improve operational efficiency, information management, and service quality within cooperatives. However, their direct effects on performance are relatively smaller than their effects on governance, suggesting that performance improvements are achieved primarily through better managerial practices rather than through technology or mentoring alone. This result is in line with Neto et al. (2012), who found that digital transformation enhances organizational performance by improving business processes and decision quality. Likewise, Alfinuri (2025) reported that managerial assistance and capacity-building programs significantly improve cooperative productivity and institutional performance.

Furthermore, cooperative governance has a positive and significant effect on cooperative performance. This finding demonstrates that cooperatives implementing transparency, accountability, regulatory compliance, clear role allocation, and effective internal control are more likely to achieve higher organizational performance. Good governance enables more efficient resource management and supports sustainable institutional development. These findings are consistent with Sari et al. (2025), who identified governance quality as a key determinant of cooperative effectiveness. They also support Marta et al. (2025), who concluded that sound governance practices contribute directly to the long-term sustainability and performance of cooperative organizations.

The mediation analysis confirms that cooperative governance significantly mediates the effects of both the management information system and business assistant mentoring on cooperative performance. These findings suggest that digitalization and mentoring generate greater performance improvements when they strengthen governance mechanisms. In other words, governance serves as the pathway through which technological and managerial resources are translated into organizational performance. This finding is consistent with Sebayang et al. (2025), who demonstrated that governance is the primary mechanism linking digital transformation to organizational performance. It also supports the Resource-Based View (RBV), which argues that technological resources and managerial capabilities create sustainable competitive advantages only when they are effectively integrated into organizational processes and governance systems.

6. Conclusion

This study demonstrates that the management information system and business assistant mentoring positively and significantly influence both cooperative governance and cooperative performance. Among the proposed relationships, business assistant mentoring exerts the strongest effect on cooperative governance, while cooperative governance has a substantial impact on cooperative performance. Furthermore, cooperative governance significantly mediates the effects of management information systems and business assistant mentoring on cooperative performance, indicating that digitalization and mentoring contribute more effectively to organizational performance when supported by sound governance practices. These findings highlight that strengthening governance is essential for maximizing the benefits of digital transformation and managerial assistance in village cooperatives.

The findings provide practical implications for policymakers and cooperative managers by emphasizing the need to integrate SIMKOPDES implementation, continuous business assistant mentoring, and governance improvement into a unified strategy for enhancing cooperative performance. However, this study has several limitations. First, the sample was limited to KDKMP in North Sumatra Province, restricting the generalizability of the findings to other regions. Second, the cross-sectional design does not capture changes in governance and performance over time. Future research should employ longitudinal designs, expand the study to multiple provinces or countries, and incorporate additional variables, such as digital literacy, organizational culture, leadership, or innovation capability, to provide a more comprehensive understanding of cooperative performance.

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References

- Aldhaban, F. (2024). The relationship between management information system quality and organizational performance: Extending the DeLone-McLean model. *Uncertain Supply Chain Management*, 12(4), 2373–2382. <https://doi.org/10.5267/j.uscm.2024.5.029>
- Alfinuri, N. (2025). Implementation of the KUR (People's Business Credit) guidance program in the City of Banjarmasin Micro Business and Manpower Cooperative Service. *International Journal of Administration, Business & Organization*, 6(1), 146–160. <https://doi.org/10.61242/ijabo.25.458>.
- Bates, R. (2004). A critical analysis of evaluation practice: The Kirkpatrick model and the principle of beneficence. *Evaluation and Program Planning*, 27(3), 341–347. <https://doi.org/10.1016/j.evalprogplan.2004.04.011>.
- Brynjolfsson, E., & Hitt, L. M. (2000). Beyond computation: Information technology, organizational transformation and business performance. *Journal of Economic Perspectives*, 14(4), 23–48. <https://doi.org/10.1257/jep.14.4.23>.
- Davis, J. H., Schoorman, F. D., & Donaldson, L. (1997). Toward an understanding of stewardship theory of management. *Academy of Management Review*, 22(1), 20–47. <https://doi.org/10.5465/amr.1997.9707180258>
- DeLone, W. H., & McLean, E. R. (2003). The DeLone and McLean model of information systems success: A ten-year update. *Journal of Management Information Systems*, 19(4), 9–30. <https://doi.org/10.1080/07421222.2003.11045748>
- Erstiawan, M. S., & Soebijono, T. (2018). Analisis good corporate governance pada koperasi (Pendekatan sistem informasi studi kasus Koperasi Setia Bhakti Wanita di Surabaya). *DEVELOP: Jurnal Program Studi Ekonomi Pembangunan*, 2(1), 21–34.
- Faried, A. I., Maisyarah, R., Sari, M. M., & Fitriana, Y. (2025). Regulatory policy for village cooperatives: The KDKMP model in regional development planning. In *Proceedings of the International Conference on Computer Science, Engineering, Social Science, and Multi-Disciplinary Studies* (Vol. 1, pp. 300–305). Paris: CESSMUDS. <https://doi.org/10.64803/cessmuds.v1.60>.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis*. Hampshire: Cengage Learning.
- Jamaluddin, F., Saleh, N. M., Abdullah, A., Hassan, M. S., Hamzah, N., Jaffar, R., Aziz, S. A. G., & Embong, Z. (2023). Cooperative governance and cooperative performance: A systematic literature review. *Sage Open*, 13(3), 88–98. <https://doi.org/10.1177/21582440231192944>.
- Kaplan, R. S., & Norton, D. P. (2000). *Balanced scorecard: Menerapkan strategi menjadi aksi*. Jakarta: Erlangga.

- Kirkpatrick, D. L., & Kirkpatrick, J. D. (2006). *Evaluating training programs: The four levels*. San Francisco, CA: Berrett-Koehler Publishers.
- Komite Nasional Kebijakan Governansi. (2024). *Pedoman umum governansi koperasi Indonesia (PUG-KOPIN)*. Jakarta: Komite Nasional Kebijakan Governansi.
- Laudon, K. C., & Laudon, J. P. (2004). *Management information systems: Managing the digital firm*. New Jersey: Pearson Educación.
- Mardiantoro, E., Sari, F. P., Oktarina, Y., & Purnomowati, I. (2026). Development strategy for the Merah Putih village/sub-district cooperative in Ogan Komering Ulu Regency. *Jurnal Ekonomi, Manajemen, Bisnis, dan Akuntansi*, 3(1), 74–102. <https://doi.org/10.70895/jemba.v3i1.97>.
- Marta, A., Ariffin, M. Y. M., Febrina, R., Amin, R. M., Hadi, S., Ferlan, M., & Mento, M. E. (2025). Integrating inclusive environmental rural development in the KDMP cooperative model. In *E3S Web of Conferences* (Vol. 671, p. 05002). Paris: EDP Sciences. <https://doi.org/10.1051/e3sconf/202567105002>.
- Masyhuri, M. A. (2024). The urgency of cooperative development in rural areas of Indonesia. *Citizen: Jurnal Ilmiah Multidisiplin Indonesia*, 4(4), 266–276. <https://doi.org/10.53866/jimi.v4i4.636>.
- Melville, N., Kraemer, K., & Gurbaxani, V. (2004). Information technology and organizational performance: An integrative model of IT business value. *MIS Quarterly*, 28(2), 283–322. <https://doi.org/10.2307/25148636>.
- Neto, S. B., Barroso, M. F. G., & Rezende, A. J. (2012). Co-operative governance and management control systems: An agency costs theoretical approach. *Brazilian Business Review*, 9(2), 68–87. <http://dx.doi.org/10.15728/bbr.2012.9.2.4>.
- Rahmawati, S. (2020). Pengaruh kompetensi SDM dan pendampingan manajemen terhadap keberhasilan usaha koperasi wanita. *Jurnal Ilmiah Ekonomi Bisnis*, 25(3), 210–222.
- Rahmiyanti, D., & Sari, D. (2022). Pengaruh pelatihan, pendampingan, dan pembinaan pemerintah kota melalui Pusat Layanan Usaha Terpadu Koperasi Usaha Mikro Kecil Menengah (PLUT-KUMKM) terhadap peningkatan pendapatan UMKM di Kota Kupang. *Al-Buhuts*, 18(1), 151–168. <https://doi.org/10.30603/ab.v18i1.2366>.
- Sari, I. M., Nidar, S. R., & Komaladewi, R. (2025). Enhancing member welfare in cooperatives: The mediating effect of business development. *Jurnal Reviu Akuntansi dan Keuangan*, 15(4), 321–333. <https://doi.org/10.22219/jrak.v15i4.41780>.
- Savitri, S., Wijayanti, L., & Fauzi, I. S. (2025). The influence of good cooperative governance and cooperative management on cooperative performance through work motivation of women's cooperatives in East Java. In *Proceeding Economy of Asia International Conference* (pp. 201–210). Malang: Ecosia International Conference.
- Sebayang, S. A., Maisyarah, R., Faried, A. I., & Lubis, A. N. (2025). Strengthening governance of Merah Putih village/urban cooperatives (KDKMP) through structured lecturing and basic institutional training. In *Proceedings of the International Conference on Computer Science, Engineering, Social Science, and Multi-Disciplinary Studies* (Vol. 1, pp. 433–441). Paris: CESSMUDS. <https://doi.org/10.64803/cessmuds.v1.83>.
- Setyabudi, R. A. (2025). Implementasi prinsip-prinsip good cooperative governance dalam penyelesaian konflik Koperasi Merah Putih. *Jurnal Ilmu Multidisiplin*, 4(5), 3528–3536. <https://doi.org/10.38035/jim.v4i5.1477>.
- Siahaan, H. N., Varwasih, M. W., & Nofitasari, R. (2024). Performance analysis of the Village Unit Cooperative (KUD) “Suka Makmur” using the Balanced Score Card. *Agriecobis: Journal of Agricultural Socioeconomics and Business*, 7(2), 129–137. <https://doi.org/10.22219/agriecobis.v7i02.35333>.
- Stair, R., Reynolds, G., Aldcorn, J., & Neufeld, D. (2015). *Principles of information systems*. Ontario: Cengage Learning.
- Sunaryo, K., Zuhrohtun, Z., EK, S. H., Kusumawardhani, I., & Susanto, H. (2023). Implementation of good corporate governance in cooperatives: A study in Yogyakarta Indonesia. *Asian Journal of Social and Humanities*, 1(4), 177–191. <https://doi.org/10.59888/ajosh.v1i04.26>.
- Tharenou, P., Saks, A. M., & Moore, C. (2007). A review and critique of research on training and organizational-level outcomes. *Human Resource Management Review*, 17(3), 251–273. <https://doi.org/10.1016/j.hrmr.2007.07.004>.
- Wibowo, E. (2025). Implementasi kebijakan Koperasi Desa dan Kelurahan Merah Putih: Analisis kapasitas sumber daya manusia pengurus dalam perspektif Mazmanian dan Sabatier. *Jurnal Ekspos*, 3(2), 43–58.



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