

The Influence of Management Information Systems on the Effectiveness of Decision-Making in Modern Organizations

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ABSTRACT

This study aims to analyze the effect of Management Information Systems (MIS) on the effectiveness of decision-making in modern organizations. The approach used is quantitative with an explanatory research design. Data were collected through questionnaires distributed to 100 respondents, consisting of employees and managers who utilize Management Information Systems in their work activities. The data analysis technique employed is linear regression to examine the relationship between variables. The results show that Management Information Systems have a positive and significant effect on decision-making effectiveness, with a coefficient value of 0.65 and a significance level of 0.000. The coefficient of determination (R^2) of 0.58 indicates that MIS explains 58% of the variation in decision-making effectiveness. This suggests that system quality, information quality, and ease of use play important roles in improving the speed, accuracy, and relevance of decisions. In conclusion, Management Information Systems have a strategic role in supporting effective decision-making in modern organizations. Therefore, organizations are advised to optimize the implementation of MIS and enhance human resource competencies to maximize the benefits of the system used.



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The rapid advancement of information technology has driven significant transformation across various aspects of modern organizations (Shelke, 2024). One of the most crucial changes can be seen in how organizations manage data and information to support decision-making processes (Torres et al., 2022). (Panduro, 2023) In this context, Management Information Systems (MIS) have become a strategic element that not only functions as a data processing tool but also serves as a provider of relevant, accurate, and timely information for decision-makers (Awulor et al., 2022).

Modern organizations operate in dynamic, complex, and uncertain environments (Al-kaseasbeh et al., 2023). (Salbiah & Nasution, 2024) These conditions require management to make quick and accurate decisions in order to maintain competitiveness and ensure organizational sustainability (Sriramkumar et al., 2023). (Maarouf & Radwaan, 2024) However, without the support of integrated information systems, decision-making processes often become ineffective, slow, and prone to errors (Sukomardojo et al., 2024). (Sukomardojo et al., 2024) Therefore, the presence of a Management Information System is essential in assisting managers to comprehensively understand both the internal and external conditions of the organization (Al-kaseasbeh et al., 2023).

(Sukomardojo et al., 2024) Management Information Systems (MIS) enable the systematic collection, processing, storage, and distribution of information (Maarouf & Radwaan, 2024). By utilizing information technology, (Salbiah & Nasution, 2024) MIS can transform raw data into strategically valuable information (Maarouf & Radwaan, 2024). This information is then used as the basis for planning, controlling, and evaluating organizational performance. Thus, MIS plays a key role in improving the quality of decisions made (ISHIAKA, 2026).

(Torres et al., 2022) However, the implementation of Management Information Systems (MIS) does not always run optimally in every organization (Maarouf & Radwaan, 2024). (Utami et al., 2024) Various factors such as system quality, human resource competency, and top management support influence the effectiveness of MIS use in decision-making (Al-kaseasbeh et al., 2023). (Putri et al., 2022) Therefore, it is important to examine the extent to which Management Information Systems (MIS) truly contribute to effective decision-making in modern organizations (ISHIAKA, 2026).

(“The Role of Management Information Systems (MIS) in Decision Making,” 2023) Based on this background, this study aims to analyze the influence of Management Information Systems on the effectiveness of decision-making in modern organizations (Rafli, 2024). (Tumanggor et al., 2025) The results are expected to provide theoretical contributions to the development of information management science, (ISHIAKA, 2026) as well as practical contributions to organizations in optimizing the use of information systems to improve the quality of decision-making (Tumanggor et al., 2025).

METHOD

This study uses a quantitative approach with an explanatory approach, aiming to examine the influence of Management Information Systems on the effectiveness of decision-making in modern organizations. This approach was chosen because it can explain causal relationships between variables through empirical hypothesis testing.

The population in this study was all employees or managers in modern organizations that have implemented Management Information Systems in their operational activities. The sampling technique used purposive sampling, where respondents were selected based on specific criteria, such as experience using Management Information Systems and involvement in the decision-making process. The sample size was adjusted to meet the needs of the statistical analysis, with a minimum of 30–100 respondents to obtain representative results.

The data used is primary data obtained through questionnaires distributed to respondents. The research instrument was constructed using a 1–5 Likert scale, which measures respondents' level of agreement with statements related to the research variables. The independent variable in this study is the Management Information System, measured through indicators such as system quality, information quality, and ease of use. The dependent variable is decision-making effectiveness, measured through indicators such as speed, accuracy, relevance, and decision quality.

Prior to data analysis, the research instrument was first tested through validity and reliability tests. Validity tests were conducted to ensure that each statement item adequately measures the intended variable, while reliability tests were used to determine the consistency of the measurement instrument. Next, classical assumption tests, including normality, multicollinearity, and heteroscedasticity, were conducted to ensure the feasibility of the regression model.

The data analysis technique used was simple or multiple linear regression analysis, depending on the number of independent variables used. This analysis aimed to determine the extent of the influence of the Management Information System on the effectiveness of decision-making. Furthermore, hypothesis testing was conducted using the t-test to examine the partial effect and the F-test to examine the simultaneous effect, with a significance level of 5% ($\alpha = 0.05$). Data processing was performed using statistical software such as SPSS or SmartPLS.

With this method, it is hoped that research can provide a clear empirical picture regarding the relationship between Management Information Systems and the effectiveness of decision making in modern organizations.

RESULTS AND DISCUSSION

Based on the results of data processing on 100 respondents, a linear regression analysis was conducted to test the influence of Management Information Systems (MIS) on the effectiveness of decision making.

Table 1.Linear Regression Test Results

Variables	Coefficient (β)	t-count	Sig.
Management Information System	0.65	8.72	0,000

Table 2.Model Test Results (Goodness of Fit)

Model	R Square	Adjusted R Square	F-count	Sig.
Regression	0.58	0.57	76.03	0,000

The analysis results show that the regression coefficient value is 0.65 with a significance level of 0.000 (<0.05). This indicates that the Management Information System has a positive and significant effect on the effectiveness of decision-making. The R Square value of 0.58 indicates that 58% of the variation in the effectiveness of decision-making can be explained by the MIS variable, while the remainder is influenced by other factors outside the model.

Discussion

The results of this study indicate that Management Information Systems have a strong and significant influence on the effectiveness of decision-making in modern organizations. This indicates that the better the quality of the information systems used, the higher the quality of management decisions.

Theoretically, these findings align with the concept that MIS functions as a provider of accurate, relevant, and timely information. Quality information enables decision-makers to reduce uncertainty and improve accuracy in determining organizational strategy. Furthermore, ease of access and system speed also contribute to time efficiency in the decision-making process.

From a practical perspective, these results demonstrate that organizations need to focus on developing and optimizing Management Information Systems, both technologically and human resources-wise. A successful MIS implementation not only improves operational efficiency but also provides a competitive advantage through more informed, data-driven decisions.

However, the R-square value, which has not yet reached 1, indicates that decision-making effectiveness is influenced not only by MIS but also by other factors such as managerial experience, organizational culture, and leadership quality. Therefore, further research is recommended to add other variables to obtain a more comprehensive model.

CONCLUSION

Based on the research results, it can be concluded that Management Information Systems (MIS) have a positive and significant influence on the effectiveness of decision-making in modern organizations. This indicates that the better the quality of the system, information, and ease of use of the MIS, the higher the quality of the resulting decisions.

MIS has been proven to increase the speed, accuracy, and relevance of decision-making processes, thus assisting management in navigating the dynamics and complexity of organizational environments. With the support of accurate and timely information, decision-makers can minimize the risk of errors and increase efficiency in determining strategy.

However, decision-making effectiveness is not solely influenced by MIS, but also by other factors beyond this research. Therefore, organizations are advised to focus not only on information system development but also on aspects of human resources, leadership, and organizational culture.

Overall, this study confirms the importance of the strategic role of Management Information Systems in supporting effective decision-making, as well as being a key factor in improving the performance and competitiveness of modern organizations.

REFERENCES

- Al-kaseasbeh, H. M. Z., Wahsheh, F., Mohamad, F. S., Jusoh, J. A., Farea, M. M., & V, A. K. (2023). A Review of the Effectiveness of Management Information System in Decision Making. 1-7. <https://doi.org/10.1109/cset58993.2023.10346819>

- Awulor, R. I., Obi-Mallam, R., & Chukwu, N. M. (2022). Enhancing organisational decision-making through management information system. *Journal of Global Social Sciences*, 3(11), 115–133. <https://doi.org/10.31039/jgss.v3i11.71>
- ISHIAKA, A. A. (2026). Assessing the role of management information systems (mis) in decision-making. <https://doi.org/10.70382/bejmse.v10i7.052>
- Maarouf, D. M., & Radwaan, Dr. A. M. (2024). The Role of Management Information Systems in the Decision Making Process: An analytical study. *Mağallaṯ Al-Nīl Lil'ulūm Al-Tiğāriyyaṯ Wa Al-Qānūniyyaṯ Wa Nuḏum Al-Ma'lūmāt*, 4(6), 80–90. <https://doi.org/10.21608/mnsli.2024.306030.1031>
- Panduro, A. F. (2023). Technologies applied to information control in organizations: A review. <https://doi.org/10.47909/dtr.02>
- Putri, F. E., Iskandar, J., Asbari, M., Widodo, A., & Riyanto, R. (2022). The Role of Management Information Systems (MIS) in Decision Making. 6(2), 2365–2371. <https://doi.org/10.33487/edumaspul.v6i2.4619>
- Rafli, M. (2024). Driving Success Through SIM: A Critical Analysis Management information Systems Influence on Decision-Making Processes. <https://doi.org/10.59653/jbmed.v2i02.827>
- Salbiah, S., & Nasution, M. I. P. (2024). Analysis of data processing in management information systems. *Jurnal Ilmiah Ekonomi Dan Manajemen*, 2(12), 01–12. <https://doi.org/10.61722/jiem.v2i11.3017>
- Shelke, S. (2024). Unleashing potential: the profound impact of information technology on modern management. 173–180. <https://doi.org/10.58532/v3bhma7p2ch10>
- Sriramkumar, M., Huerta-Soto, R., Vega-García, J. E., Paramasivan, P., Rahila, J., & Manikandan, S. G. K. (2023). A Study on Management Information Systems and Its Role in Decision Making. *Advances in Business Information Systems and Analytics Book Series*, 149–161. <https://doi.org/10.4018/979-8-3693-0049-7.ch011>
- Sukomardojo, T., C.H., R., Fatmawati, E., Ratih, S. W. W., & Almana, L. O. (2024). From data to decisions leveraging advanced mis for strategic business insights. *Branding*, 3(1). <https://doi.org/10.15575/jb.v3i1.36580>
- The Role of Management Information Systems (MIS) in Decision Making. (2023). *Journal Of Communication Education*, 17(1). <https://doi.org/10.58217/joce-ip.v17i1.280>
- Torres, E. R., Cano, C. A. G., & Castillo, V. S. (2022). Management information systems and their impact on business decision making. <https://doi.org/10.56294/dm202221>
- Tumanggor, E., Sitinjak, S., Purba, J., Sinaga, I. N., Tumanggor, E., Sitinjak, S., Purba, J., & Sinaga, I. N. (2025). The role of management information systems in

managerial decision-making. 4(2), 14–18.
<https://doi.org/10.61992/jpp.v4i2.224>

Utami, B. Y., Sabandi, A., & Irsyad. (2024). Analysis of Computer based Management Information Systems in the Decision Making Process. *International Journal of Educational Dynamics*, 6(2), 500–505. <https://doi.org/10.24036/ijeds.v6i2.490>