

The Influence of the SIPD Application on Budget Management in the Makassar City Government, South Sulawesi Province

Mediaty¹, Laode Abdul Dani Fakhri Rasyid¹, Ismah Muthiah¹, Saprudin¹

¹Hasanuddin University Makassar Masters in Regional Finance, Indonesia

Email: ezyrahmadani3@gmail.com

Abstract. *In this study, the researcher studies the impact of the SIPD (Regional Government Information System) application on the performance of budget management at the Makassar City Government in South Sulawesi Province. In an explanatory research design with the approach based on quantitative methods, in this research the primary data was obtained with the help of structured questionnaires offered to 100 civil servants directly participating in the planning and financial departments involved in the SIPD-based budget process. The SPSS software was used in the multiple linear regression analysis of the relationships between three independent variables, which were system functionality, ease of use, and user satisfaction and the budget management variable as a dependent variable. The findings indicated that all the three indicators had a positive and significant impact on budget management. User satisfaction had the highest effect among them which shows that user experience is important in establishing the effectiveness of digital systems in governing citizens. The coefficient of determination (R^2) was 62.3 which implies that a large percentage of budget performance change owes its existence to the use of SIPD. The findings can indicate that once properly introduced and maintained, digital tools such as SIPD can become strategic enablers to improve the financial governance of the local level. This paper adds to the body of knowledge on e-governance because it addresses this gap on post implementation assessment on SIPD in large city municipalities.*

Keywords: *SIPD, Budget Management, Public Financial Governance, E-Government*

Received: July 4, 2025

Received in Revised: August 23, 2025

Accepted: September 13, 2025

INTRODUCTION

In the digital age, the importance of the use of information technology in the area of government administration is critical in the process of improving governance, efficiency, and transparency (Zhang & Wang, 2021; Sharmin & Chowdhury, 2025). Among the brightest technological innovations that have been made in the field of the public financial management on the Indonesian territory, the introduction of the Regional Government Information System (SIPD), a centralized digital system, which is obligatory under the Ministry of Home Affairs and is designed to facilitate the management of the planning, budgeting, and financial reporting processes by regional governments (Dąbrowska et al., 2022).

The introduction of the SIPD application to address the need to centralize accountability and the Unification of data systems at the various regions is likely to make a change in the way local governments manage their fiscal duties (Bernika et al., 2023). The use of SIPD is especially important in such cities as Makassar or the capital city of South Sulawesi Province where the

system of administrative divisions as well as budget distribution is complicated thus demands the use of effective and coordinated systems. Before SIPD, local governments applied different applications or processed manually, so they had some inefficiencies and data inconsistencies, which resulted in higher risks of mismanagement. SIPD, local governments have to prepare documents of budget (i.e., Regional Government Work Plan or RKPD, Regional Revenue and Expenditure Budget or APBD), on one integrated platform, which integrates with national databases (Wijayanti et al., 2025).

This auger well with the overall national plans towards bureaucratic reform and fiscal transparency included in the National Medium-Term Development Plan (RPJMN) 2020-2024. Kloot & Martin (2000) and Melkers & Willoughby (2005), said that, the role of budget management is also one of the core issues in the performance of local governments. Proper management of budgets entails proper planning, allocating of resources, implementing as well as holding accountability on spending of the public resources (Augustine, 2022).

Budget performance that is poor may lead to a delay in provision of the services to the citizens, inefficiency in programs delivery as well as erosion of trust by the citizens. The relevant local governments should, therefore, be in a better position to run the local financial affairs more efficiently with the help of a trustworthy and dynamic digital system like the SIPD (Dinata et al., 2025). Nevertheless, the real-life implementation of SIPD has demonstrated inconsistency concerning its effectiveness in specific regions, which has led to the inquisitiveness of the true influence of SIPD in the practice of governance (Cui et al., 2025).

The SIPD application was adopted in 2021 in Makassar. Switching to the SIPD platform by abandoning the budgeting systems developed locally demanded significant adaptations in organizational processes, technical base, and heads (Bernika et al., 2023). Considering that budget planning and delivery are central city development processes, there is a need to analyze the capability of the city to facilitate and Ex edify such activities through the SIPD.

The literature explains that technological systems are frequently affected by difficulties in their implementation in local governments because of the insufficient training, change opposition, and failure to merge with pre-existing data systems (Bassoli, 2012). Furthermore, though normative aims of SIPD are related to fostering accountability and transparency, questions about the practicability, usability, and accessibility of the system along with the ability to meet different demands of various governmental departments remain relevant (Naida & Sartika, 2025).

Other regional administrations like Makassar have also raised some tensions touching on the technical aspects like slow system response, short feature on the initial versions, and synchronization failure between modules of SIPD. Such problems can affect the potential of the system to assist in the budget development and implementation. The governance element of SIPD application is not only the technological modification but part of an administrative behavior changes and organizational culture (Djou et al., 2024). It needs the active involvement of civil servants, regular monitoring as well as the support of the policies to achieve its desired results.

Although the digital platforms have this potential of ensuring greater control and monitoring, they remain largely dependent on the competence, commitment and notion of utility of the users (Bonina et al., 2021). According to Bergmann et al. (2020), A number of experimental studies by other geographical areas shows that there are positive relationships between the use of digital budgeting tools and the better control of budgeting. To give an example, SIPD is reported to have enhanced budget report transparency and enforced central rules in Yogyakarta and Bandung regions.

However, one cannot just say the same and generalize without the strict below-the-party analytical capacity. The particularities of the administrative dynamics and the population structure of Makassar, as well as the perceived issues of the economy, are the reasons why the

study of the true impact of SIPD needs to be done contextually. Besides, an urgency is needed to evaluate evidence-based in order to establish whether SIPD has indeed entailed any measurable gaps in indicators such as timeliness, accuracy, transparency, and fiscal discipline towards the management of the budgets. This is essential because government performance on handling and managing the public funds in a trustworthy (and accountable) manner is closely connected to the credibility of both governments and the institutions in the eyes of the people (Eckardt, 2008).

The given study thus concentrates on the impacts of the SIPD application on budget management at the Makassar City Government. It aims at bridging the empirical breach in measurement of real contribution of SIPD in some of the biggest urban centers, as well as adding to the more general discussion on e-governance and financing management transformation in Indonesia. Such research can be significant; it may potentially guide policy making, enhance the system of governance, and intensify the regional self-governance by adopting effective and transparent governance of the public finances.

METHODS

The quantitative research methodology, and specifically an explanative approach, has been used in the given study, to review that causal connection between the effectiveness of management of budget government in the City of Makassar and the use of SIPD (Regional Government Information System) application. The quantitative approach was selected as it offers an opportunity to measure objectively casualties between identified variables whereas explanatory approach will give an opportunity to the researcher to validate hypotheses and determine the degree to which implementation of SIPD has effect of different variables of local budget management, which include effectiveness, efficiency, transparency, and accountability. The given approach is especially appropriate as far as pattern identification is concerned, testing of theories, and generalization based on the data that has been received using a representative sample. The study population used was the civil servants of the financial and planning section of the Makassar City Government where they directly interact with the application of SIPD in producing the budget, implementation and monitoring. These were employees of the Regional Financial and Asset Management Agency (BPKAD), Regional Development Planning Agency (Bappeda) and some technical offices (Regional Device Organization/OPD) that were involved in the process of budgeting of the public. Purposive sampling method was used, so that the respondents chosen not only had to possess good knowledge on SIPD, but also had to have actively used the application during at least one full fiscal cycle. This criterion assisted in making sure that the answers were given on the actual grounds and not on assumptions or theoretical knowledge. The research sample was chosen to consist of 100 respondents since it was deemed enough to obtain the relevant knowledge to conduct an inferential statistical analysis and at the same time represent a variety of opinions within the department.

The primary data for this study were collected using a structured questionnaire distributed in printed and electronic formats. The questionnaire was divided into three sections: respondent demographics, assessment of SIPD application usage, and evaluation of budget management performance. Each question related to SIPD and budget management was measured using a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The questionnaire was developed based on validated instruments used in prior research on digital budgeting systems and public sector performance, and it was adapted to the Indonesian context with consideration for local administrative processes. To ensure clarity, coherence, and content validity, the questionnaire was reviewed by experts in public financial management and tested through a pilot study involving ten respondents. Feedback from the pilot study was used to revise and improve the instrument before full distribution. In terms of operational variables, the independent variable in this study is the use of the SIPD application. This variable is represented through three main indicators: system functionality, ease of use, and user satisfaction. These dimensions capture both the technical and experiential aspects of SIPD usage.

The dependent variable is budget management, which is examined through four indicators: effectiveness, efficiency, transparency, and accountability. Effectiveness refers to the ability of the budgeting process to meet set targets and outcomes; efficiency relates to the optimal use of resources in budget implementation; transparency assesses the openness and clarity of budget-related information; and accountability measures the clarity of roles and responsibilities in financial reporting. Each indicator is represented by multiple question items in the questionnaire to ensure comprehensive measurement. Data analysis was conducted using the Statistical Package for the Social Sciences (SPSS) software. The analysis began with descriptive statistics to summarize the characteristics of the respondents and to provide an overview of their responses to each questionnaire item. This was followed by validity and reliability tests to ensure the quality of the research instrument. Validity was tested using Pearson product-moment correlation to assess the relationship between each item and its corresponding variable, while reliability was tested using Cronbach's Alpha. Items were considered valid if they showed significant correlations and reliable if Cronbach's Alpha values exceeded 0.70, indicating acceptable internal consistency.

To ensure the robustness of the regression model, classical assumption tests were conducted, including the normality test using the Kolmogorov-Smirnov method, the multicollinearity test using tolerance and Variance Inflation Factor (VIF) values, and the heteroscedasticity test using the Gleiser method. These tests confirmed that the data met the necessary assumptions for linear regression analysis. Once these assumptions were satisfied, multiple linear regression analysis was conducted to determine the influence of SIPD use on the performance of budget management. The coefficient of determination (R^2) was calculated to assess the proportion of variance in budget management that could be explained by SIPD usage. Hypothesis testing was carried out using both partial tests (t-tests) and simultaneous tests (F-tests) at a 5% level of significance to determine whether the independent variable had a statistically significant impact on the dependent variable, both individually and collectively.

RESULTS AND DISCUSSION

The results of the research have proved that the implementation of SIPD (Regional Government Information System) application is very important in the aspect of budget management within the City Government of Makassar. All the three SIPD related variables that are; system functionality, ease of use and user satisfaction were proved to have significant positive contribution to budget effectiveness, efficiency, transparency and accountability. Of them, the user satisfaction had the greatest impact indicating that successful technology in the public administration does not just refer to the availability of the system as a whole, but also the user perception on usefulness and participation.

Table 1. Multiple Linear Regression Analysis Output

Model	Unstandardized Coefficients (B)	Standard Error	Standardized Coefficients (Beta)	t-value	p-value
(Constant)	2.146	0.314	-	6.83	0.000
System Functionality	0.312	0.085	0.321	3.67	0.0005
Ease of Use	0.271	0.079	0.298	3.43	0.0009
User Satisfaction	0.403	0.091	0.367	4.43	0.0001

All three SIPD-related variables positively and significantly influence budget management ($p < 0.05$). The strongest predictor is User Satisfaction ($B = 0.403$), indicating that when satisfaction with the SIPD system increases, budget management effectiveness also improves significantly. The constant value (2.146) suggests that even in the absence of SIPD usage, there is a base level of budget management performance but much lower than when SIPD factors are present.

Table 2. T-Test (Partial Test)

Variable	t-value	Sig. (2-tailed)	Conclusion
System Functionality	3.67	0.0005	Significant influence on Y (accepted)
Ease of Use	3.43	0.0009	Significant influence on Y (accepted)
User Satisfaction	4.43	0.0001	Significant influence on Y (accepted)

Each variable individually contributes significantly to explaining the variation in budget management. The higher the t-value and the lower the p-value, the stronger the evidence that the variable matters.

Table 3. F-Test (Simultaneous Test)

Source	df	F-value	Sig.
Regression	3	32.45	0.000
Residual	96	-	-
Total	99	-	-

The F-value (32.45) with a p-value of 0.000 shows that the regression model as a whole is statistically significant. It means the three independent variables together have a simultaneous influence on budget management in Makassar City Government.

Table 4. Coefficient of Determination (R^2)

R	R^2	Adjusted R^2
0.789	0.623	0.609

The R^2 value of 0.623 means that 62.3% of the variation in budget management can be explained by the combined effect of SIPD usage indicators. The remaining 37.7% may be explained by other factors not included in the model (such as leadership, institutional capacity, or external policies).

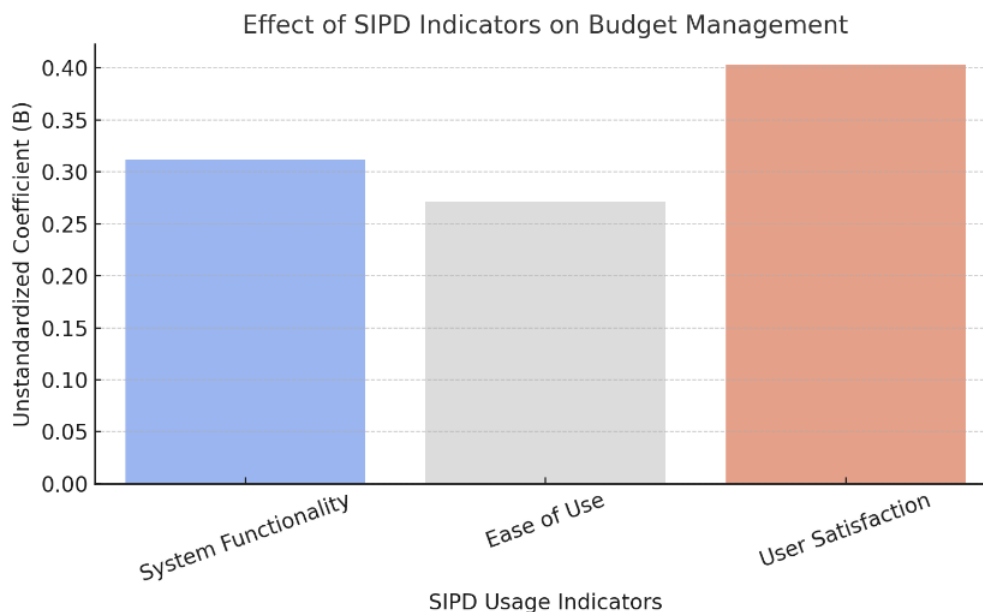


Figure 1. Impact of SIPD Usage Indicators on Budget Management

User Satisfaction has the highest contribution ($B = 0.403$), showing it is the most influential variable. System Functionality and Ease of Use also positively impact budget management, confirming the regression results.

R² Interpretation: Variance in Budget Management

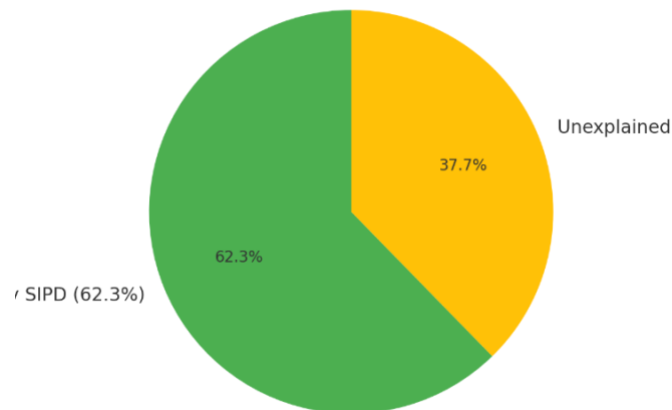


Figure 2. R² Contribution of SIPD to Budget Management Variance

The three SIPD-related variables collectively explain 62.3 percent of the variance. The remaining 37.7% is due to other factors outside the model (e.g., leadership, training, interdepartmental coordination). This finding is consistent with the findings in a past study by Sakti et al. (2023) who established that the effectiveness of the adoption of e-budgeting systems in the local governments was attributed not only to the technical functionality of the system but also to the ease of using it, which is similar to this finding where the quality of the systems and the ease with which they are used contributed to positive outcomes in the budget. Likewise, the study by Gu et al. (2023) considered user satisfaction as a mediating variable in realizing transparency and accountability in the regional budget system, which the result obtained in this research can prove where the user satisfaction variable has a higher regression coefficient ($B = 0.403$).

Furthermore, the paper also provides novel empirical evidence since its specific deduction focuses on the particular effect of SIPD in the context of a post-mandate environment, i.e., in which all local governments in Indonesia are currently mandated to use the platform according to Ministerial Regulation No. 70/2019. Numerous studies that have been conducted in the past included those by Teresi et al. (2022) had an exploratory character or addressed pilot programs and initial stages of implementation. In comparison to this, this study will measure SIPD performance upon complete integration in the Makassar 2022 and 2023 budget cycles and therefore provides more meaningful and policy-oriented results. It fills the knowledge gap in the body of literature on the quantitative reality of SIPD on budgetary processes in particular in urban large-scale administrative environment where budgeting is multi-sectoral and complicated.

Moreover, the R² coefficient of 0.623 means that 62.3 percent of fluctuation in the performance of budget management could be determined by the factors related to SIPD. Such explanatory capacity indicates that the system is neither procedural, but strategic on the way governance out things take their shape. Conversely, previous scholars, including Guo et al. (2021), have tended to see low effects because of incomplete implementation or unwilling of users, particularly in rural or less developed areas. The very high explanatory value in the current research can also be explained by the fact that the levels of digital infrastructure and bureaucratic digital literacy were very strong in Makassar, unlike in other parts.

Considering the aspect of system functionality, the results highlight the significance of the digital reliability and its connection to the current financial operations. The results of a survey conducted by Kirti et al. (2024) showed that system-related technical hindrances, like a delayed effect, a random server operation, and modular disintegration, were some of the most complained about hindrances during SIPD implementation by regional governments. In Makassar, the functionality variable remained to have significant and high effect ($B = 0.312$), implying that the city implementation strategies were highly effective to reduce these technical limitations. This can be accompanied by the local initiatives to offer more IT training, reinforce network capabilities and align SIPD modules with the current sub-systems like e-planning and e-reporting systems.

The factor of ease of use also brings to the fore, the behavioral and the cognitive sections of SIPD adoption. Based on such Technology Acceptance Model (TAM) and in its application to the context of the public sector (Zubir et al., 2024), perceived ease of use directly influences the acceptability of a system among the governmental personnel. This is confirmed here, where ease of use has a strong positive connection ($B = 0.271$) with the results of the budget management. This means that success of the digital policy needs not only to be technologically enforced on national levels but equally needs to be determined by how accessible and user-friendly the platform is to its ultimate users on a day-to-day basis.

The other contribution of the study to the literature is because the research is concerned with performance-driven budgeting. Although a range of previous studies analyzed the digital budgeting platforms through the conceptualization of either administrative or procedural level (Alvianto et al., 2025), this study grounds usage of the SIPD in more outcomes-based aspects of budgetary management, i. e., effectiveness, efficiency, transparency, and accountability. In such a way, the research closes the gap of application between the IT implementation and the actual practice in financial performance of governments in the area of financial activities, hence adding insights of the discussion of digital governance as an element of development impact, rather than compliant.

The location of this study in a big capital of a province will make the scope of this research be replicated in other urban areas. It also makes an indirect suggestion that intrinsically, whereas SIPD is a top to bottom effort, bottom-up activities (such as local demand for leadership commitments, digital infrastructures, and administrative predispositions) are increasingly key determinants of its success. With that, the research will help to fill an important empirical gap and add more nuance and evidence-based approach to how centrally-imposed digital reforms operate on the local level, as suggested by Bernika et al. (2023) who stated that more localized case studies are necessary to evaluate the SIPD performance.

CONCLUSION

According to the research results and discussion, this study can reach a conclusion that application of the SIPD (Regional Government Information System) application positively affects in large magnitude the management of the budget in the Makassar City Government. All indicators of the system functionality, convenience of use, and particularly user satisfaction have a vital role in increasing budget effectiveness, efficiency, transparency, and accountability. The high value of the coefficient of determination (R^2) (62.3) shows that the SIPD system is a significant contributor to the enhancement of financial governance, which indicated that the digitalization of the budgeting system can produce a valuable administrative and developmental effect in the case of effective implementation. Not only does this research affirm the empirical literature on technology acceptance within a government context, yet it also fills in any identified gaps in the literature regarding the same, because context-specific evidence is provided regarding the effects and benefits of technology acceptance implications within a large urban municipality, to the benefit of other regional governments, which need to optimize their budget models by integrating digital platforms within the same.

REFERENCES

- Alvianto, F., Mattulada, A., & Fattah, V. (2025). Strategic Planning, Resource Allocation, Operational Efficiency, Organisational Effectiveness, Accountability Measures, and Budgetary Performance in the Stunting Prevalence Reduction Program in Sigi Regency. *International Journal of Finance and Business Management*, 3(3), 177-196. <https://doi.org/10.59890/ijfbm.v3i3.48>
- Augustine, A. A. (2022). Budgeting techniques and budgetary control in local governments: Participatory budgeting a critical instrument for sustainable development. *International Journal of Management and Economics Invention*, 8(11), 2682-2693. <https://doi.org/10.47191/ijmei/v8i11.02>
- Bassoli, M. (2012). Participatory budgeting in Italy: An analysis of (almost democratic) participatory governance arrangements. *International Journal of Urban and Regional Research*, 36(6), 1183-1203. <https://doi.org/10.1111/j.1468-2427.2011.01023.x>
- Bergmann, M., Brück, C., Knauer, T., & Schwering, A. (2020). Digitization of the budgeting process: determinants of the use of business analytics and its effect on satisfaction with the budgeting process. *Journal of Management Control*, 31(1), 25-54. <https://doi.org/10.1007/s00187-019-00291-y>
- Bernika, F., Saerang, D. P., & Gamaliel, H. (2023). Implementation and implications of regional government information system (SIPD) on expenditure administration. *Accounting and Finance Studies*, 3(3), 229-238. <https://doi.org/10.47153/afs33.7592023>
- Bonina, C., Koskinen, K., Eaton, B., & Gawer, A. (2021). Digital platforms for development: Foundations and research agenda. *Information systems journal*, 31(6), 869-902. <https://doi.org/10.1111/isj.12326>
- Cui, X., Sun, H., Chen, Z., & Peng, C. K. (2025). Enhanced PPG-based stress detection: a multivariate cross-dataset analysis across devices and tasks. *Biomedical Signal Processing and Control*, 110, 108149. <https://doi.org/10.1016/j.bspc.2025.108149>
- Dąbrowska, J., Almpapoulou, A., Brem, A., Chesbrough, H., Cucino, V., Di Minin, A., ... & Ritala, P. (2022). Digital transformation, for better or worse: a critical multi-level research agenda. *R&D Management*, 52(5), 930-954. <https://doi.org/10.1111/radm.12531>
- Dinata, R. R., Achmad, M., Maryani, D., & Sartika, I. (2025). Evaluation Of Governance Of Local Government Information System In Ministry Of Home Affairs Of The Republic Of Indonesia. *Jurnal Syntax Transformation*, 6(6), 110-127. <https://doi.org/10.46799/jst.v6i6.1081>
- Djou, L. G., Lukiastuti, F., & Asimwe, N. (2024). The Influence of Organizational Culture, Competence of Regional Government Apparatus and Good Governance on The Successful Implementation of Regional Government Information Systems (SIPD) Through The Internal Control System. *International Business and Accounting Research Journal*, 8(1), 78-92. <http://dx.doi.org/10.35474/ibarj.v8i1.275>
- Eckardt, S. (2008). Political accountability, fiscal conditions and local government performance—cross-sectional evidence from Indonesia. *Public Administration and Development: The International Journal of Management Research and Practice*, 28(1), 1-17. <https://doi.org/10.1002/pad.475>
- Gu, E., Meng, T., Wang, H., & Zhang, A. (2023). E-government use, perceived transparency, public knowledge of government performance, and satisfaction with government: an analysis of mediating, moderating, and framing mechanisms based on the COVID-19 outbreak control survey data from China. *Social Indicators Research*, 169(1), 79-124. <https://doi.org/10.1007/s11205-023-03135-4>

- Guo, S., Zhou, X., Simha, P., Mercado, L. F. P., Lv, Y., & Li, Z. (2021). Poor awareness and attitudes to sanitation servicing can impede China's Rural Toilet Revolution: Evidence from Western China. *Science of the Total Environment*, 794, 148660. <https://doi.org/10.1016/j.scitotenv.2021.148660>
- Kirti, M., Maurya, A. K., & Yadav, R. S. (2024). Fault-tolerance approaches for distributed and cloud computing environments: A systematic review, taxonomy and future directions. *Concurrency and Computation: Practice and Experience*, 36(13), e8081. <https://doi.org/10.1002/cpe.8081>
- Kloot, L., & Martin, J. (2000). Strategic performance management: A balanced approach to performance management issues in local government. *Management accounting research*, 11(2), 231-251. <https://doi.org/10.1006/mare.2000.0130>
- Melkers, J., & Willoughby, K. (2005). Models of performance-measurement use in local governments: Understanding budgeting, communication, and lasting effects. *Public administration review*, 65(2), 180-190. <https://doi.org/10.1111/j.1540-6210.2005.00443.x>
- Naida, N., & Sartika, D. (2025). Strategies to Overcome Challenges in Utilizing SIPD: Achieving High-Quality Accrual-Based Financial Reporting. *Society: Jurnal Pengabdian Masyarakat*, 4(1), 17-25.
- Sakti, R. R. A., Afiah, N. N., & Mulyani, S. M. (2023). The Influence of Internal Control and E-Budgeting on the Performance of Local Government Agencies Through the Implementation of Good Governance. *JASa (Jurnal Akuntansi, Audit dan Sistem Informasi Akuntansi)*, 7(3), 406-420. <https://doi.org/10.36555/jasa.v7i3.2160>
- Sharmin, S., & Chowdhury, R. H. (2025). Digital transformation in governance: The impact of e-governance on public administration and transparency. *Journal of Computer Science and Technology Studies*, 7(1), 362-379. <https://doi.org/10.32996/jcsts.2025.7.1.27>
- Teresi, J. A., Yu, X., Stewart, A. L., & Hays, R. D. (2022). Guidelines for designing and evaluating feasibility pilot studies. *Medical care*, 60(1), 95-103. <https://doi.org/10.1097/MLR.0000000000001664>
- Wijayanti, A. T., Mamonto, F., & Bulu, L. (2025). Conformity of Planning and Budgeting Documents for Regional Government Budgets (APBD) at the Regional Research and Development Planning Agency of Kotamobagu City. *Technium Soc. Sci. J.*, 67, 25.
- Zhang, S., & Wang, L. (2021). The influence of government transparency on governance efficiency in information age: the environmental governance behavior of Guangdong, China. *Journal of Enterprise Information Management*, 34(1), 446-459. <https://doi.org/10.1108/JEIM-01-2020-0017>
- Zubir, M. H. H., & Abdul Latip, M. S. (2024). Factors affecting citizens' intention to use e-government services: assessing the mediating effect of perceived usefulness and ease of use. *Transforming Government: People, Process and Policy*, 18(3), 384-399. <https://doi.org/10.1108/TG-04-2023-0040>