J-ENSISTEC (Journal of Engineering and Sustainable Technology)
Computer Science | Industrial Engineering | Mechanic Engineering | Civil Engineering
Vol. 12|No. 02, June 2026
ISSN : 2477-359X (Online)
ISSN: 2407-6007 (Print)
pp. 10452-10460

Analysis Of The Effectiveness Of The Use Of Local Government Information Systems (SIPD) In The Budget Preparation Process (APBD) At The National Unity And Political Agency Of South Sumatra Province

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ARTICLE INFO

Article history:
Received 27 December 2025
Revised 10 February 2026
Accepted 11 Marect 2026
Available online 25 June 2026

Keywords:
APBD;
Effectiveness;
E-Government;
Public Sector Information;
SIPD;
Systems;

IEEE style in citing this article:
D. Prayogi and N. Huda, "Analysis of the effectiveness of the use of local government information systems (SIPD) in the budget preparation process (APBD) at the National Unity and Political Agency of South Sumatra Province," *J-ENSITEC (Journal of Engineering and Sustainable Technology)*, vol. 12, no. 2, pp. 10452-10460, 2026,

DOI:
https://doi.org/10.31949/j-ensitec.v12i02.17559

ABSTRACT

The implementation of the Regional Government Information System (SIPD) represents a fundamental paradigm shift in the digital transformation of Indonesian local governance, specifically designed to enhance effectiveness, efficiency, and transparency in the management of the Regional Revenue and Expenditure Budget (APBD). This study aims to conduct a comprehensive analysis of the effectiveness of SIPD implementation in the APBD preparation process at the National Unity and Politics Agency (Badan Kesbangpol) of South Sumatra Province. Utilizing the DeLone and McLean Information Systems Success Model as the theoretical framework, this research evaluates six core dimensions: System Quality, Information Quality, System Use, User Satisfaction, Individual Impact, and Organizational Impact. A quantitative approach was employed using a survey method with 40 respondents comprising budget drafting staff, budget analysts, treasurers, and IT support teams. The data were analyzed using descriptive statistics to determine the level of effectiveness and identify inhibiting factors. The results indicate that the overall effectiveness of SIPD is categorized as "Effective Enough" with an average score of 3.22 on a Likert scale of 1-5. The System Use dimension achieved the highest score (3.48), reflecting a high level of user adoption due to mandatory regulations, while the System Quality dimension received the lowest score (2.93), highlighting significant challenges in IT infrastructure, system response time, and feature customization. The study concludes that while SIPD has been successfully integrated into the agency's workflow and positively impacts organizational accountability, urgent improvements are required in technical infrastructure, user training, and feature customization to optimize its potential.

1. INTRODUCTION

Digital transformation in the government sector, known as e-government, has become a national priority agenda in Indonesia in the past decade [1]. The paradigm shift from paper-based government management to electronic-based management is not just a technological trend, but an urgent need to respond to public demands for transparency, accountability, and speed of service. One of the most strategic and monumental initiatives within the framework of regional bureaucratic reform is the implementation of the Local Government Information System (SIPD). This system was designed by the Ministry of Home Affairs as an integrated platform that connects various local government functions, from development planning, regional financial management, to performance reporting, in one integrated and real-time database[2].

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The urgency of implementing SIPD is rooted in the pathological complexity in the management of the Regional Revenue and Expenditure Budget (APBD) which has been constrained by data fragmentation for many years. Prior to the unification of SIPD, local governments in Indonesia tended to use partial and stand-alone financial management applications (siloed applications). This condition resulted in data duplication, inconsistencies between planning documents (RPJMD/RKPD) and budgeting documents (KUA-PPAS/APBD), and difficulties in conducting fiscal consolidation nationally. The Ministry of Home Affairs of the Republic of Indonesia then mandated the use of SIPD through the Minister of Home Affairs Regulation Number 70 of 2019 concerning Regional Government Information Systems, which required all local governments to switch to this system to realize the vision of "One Data Indonesia".

In South Sumatra Province, the National and Political Unity Agency (Kesbangpol) plays a very vital and strategic role in maintaining political stability, security, and national resilience at the regional level. As a Regional Apparatus Organization (OPD), the Kesbangpol Agency has a constitutional and administrative obligation to compile and manage the APBD to support the operation of its strategic programs. These programs include the development of Pancasila ideology, handling social conflicts, monitoring foreigners, and facilitating financial assistance for political parties. Given the sensitivity and urgency of the main tasks and functions (Tupoksi), the process of preparing the APBD at the Kesbangpol Agency requires a high level of accuracy and speed. Delays or errors in budget preparation can have implications for hampered early detection of conflicts or failures in maintaining regional political conduciveness.

The process of preparing the APBD at the Kesbangpol Agency is a very crucial activity and involves a diverse ecosystem of users, ranging from budgeting staff who input technical data, budget analysts who verify the suitability of programs, to treasurers who manage the structure of expenditure accounts. The effectiveness of the use of SIPD in this process is the main determinant for the quality of budget planning and accountability for the use of public funds within the Kesbangpol Agency. If this system runs effectively, then the budget preparation workflow will be efficient, transparent, and accountable. On the other hand, if this system experiences obstacles, the risk of inefficiency and maladministration will increase[3].

However, the transition to a comprehensive digital system such as SIPD cannot be separated from various fundamental challenges. Empirical phenomena in the field show that although the adoption of the system has been carried out mandatorily, the level of effectiveness of its use still varies and often encounters obstacles. Several previous studies indicate that there are technical and non-technical obstacles in the implementation of SIPD in various regions[4]. In his research, it was found that the main obstacles to the implementation of SIPD are often related to the lack of effective socialization, the limitation of information technology infrastructure in the regions, and the resistance to change of users who are accustomed to the old system. On the other hand[5]. highlights system quality issues, such as slow access speeds during peak loads and the completeness of features that do not fully accommodate the specifications of regional needs.

Similar problems are also indicated to occur in the South Sumatra Provincial Kesbangpol Agency. Although the SIPD has been implemented, there has been no comprehensive and measurable evaluation that measures the extent to which this system is effective in supporting the APBD preparation process. The fundamental question that arises is: Does this system really speed up the bureaucratic work process or does it actually add a new administrative burden? Is the information generated by the SIPD accurate, timely, and relevant for managerial decision-making? And to what extent does this system have a positive impact on the performance of individual employees and the performance of the organization as a whole?

The main purpose of this study is to analyze and evaluate the effectiveness of the use of SIPD in the process of preparing the APBD at the South Sumatra Provincial Kesbangpol Agency in depth. This study uses a quantitative approach by adopting the theoretical framework of the DeLone and McLean Information System Success Model. This model was chosen because of its proven comprehensiveness in measuring the success of information systems through six dimensions that are causally interrelated: System Quality, Information Quality, Use, User Satisfaction, Individual Impact, and Organizational Impact[6].

This research has a high urgency, not only as an academic evaluation, but also as a basis for practical policy-making. For the Kesbangpol Agency, the results of this study can map weak points in the implementation of the system, both in terms of infrastructure and human resources. For the South

Sumatra Provincial Government, this finding can be a barometer of the success of digital transformation at the OPD level and serve as a reference for improving SIPD implementation strategies in the future. In addition, this research also contributes to the literature on e-government in developing countries, especially in the context of the transition of a centralistic regional financial management system.
In the reporting systematics, this study will describe in detail the methodology used, the profile of the research object to provide organizational context, the analysis of statistical data from user responses, as well as an in-depth discussion that relates the data findings to theory and practice in the field. The final part of the report will present concrete conclusions and recommendations that can be implemented to improve the effectiveness of SIPD[7].

2. METHOD

This research is carried out through a series of systematic stages to ensure that the data collected is valid, reliable, and can be processed effectively. The research stages are designed to follow a logical flow from preparation, data collection, data processing, to analysis of results. The following are the stages of research carried out:
Stage 1: Research Preparation At this stage, researchers conduct:

a. Identify Research Problems
   Conducting initial observations at the South Sumatra Provincial Health Agency to understand the context of the use of SIPD in the APBD preparation process. Problem identification was carried out through informal discussions with SIPD users and direct observation of the budget preparation work process.
b. Studi Literature
   Review the literature related to the DeLone and McLean Model, local government information systems (SIPD), information system effectiveness, and previous studies relevant to the research topic.
c. Determination of the Theoretical Framework
   Chose the DeLone and McLean Models as the primary theoretical framework for measuring the effectiveness of SIPD. This model was chosen because it is comprehensive in evaluating the success of information systems through six dimensions: System Quality, Information Quality, System Utilization, User Satisfaction, Individual Impact, and Organizational Impact.
d. Preparation of Questionnaire Instruments
   Designed a questionnaire based on the six dimensions of the DeLone and McLean Models. The questionnaire consisted of 27 question items on a Likert scale of 1-5. Each dimension had 4-5 question items designed to dig deep into user perception.
e. Validasi Instrumen
   Conducting a test of the validity and reliability of the questionnaire instrument through a pilot test to 5 respondents to ensure that each question item can be understood well and measure the construct in question

Stage 2: Data Collection, After the instrument is declared valid and reliable, the data collection stage is carried out with the following steps:

a. Determination of Research Sample Using the purposive sampling method, 40 respondents were selected who met the following criteria:
   - Actively use SIPD in daily work
   - Have been using SIPD for at least 6 months
   - Distributed in four position groups: APBD Compiler Staff (15 people), APBD Analysis (12 people), Treasurer (8 people), and IT Support Team (5 people)
b. Questionnaire Distribution
   The questionnaire was distributed directly (offline) to respondents at the South Sumatra Provincial Kesbanpol Agency office. The offline method was chosen to ensure a high return rate and provide an opportunity for the researcher to explain the purpose of the question if there is ambiguity.

c. Participatory Observation
In addition to the questionnaire, the researcher also made direct observations on:
- User interaction with the SIPD interface
- The condition of the network infrastructure and hardware
- Technical issues that arise in real-time during operational working hours

d. Documentation Studies
Review supporting documents such as:
- Final Internship Report
- Organizational structure of the Kesbanpol Agency
- SIPD usage guide
- SIPD usage historical data

Stage 3: Data Processing and Analysis. The data that has been collected is then processed and analyzed through the following stages:

a. Data Validation and Verification
Check the completeness of the answers on each questionnaire. Questionnaires that are incomplete or do not meet the criteria will be excluded from the analysis.

b. Data Tabulation
Enter respondent answer scores into a data matrix (row=respondent, column=question item) using Microsoft Excel. Each respondent is uniquely coded (R1, R2, ..., R40) and each question item is coded (Q1, Q2, ..., Q27).

c. Descriptive Statistical Calculation
Calculate the mean and standard deviation for:
- Each question item (Q1 - Q27)
- Each dimension (System Quality, Information Quality, System Usage, User Satisfaction, Individual Impact, Organizational Impact)
- Overall effectiveness score

d. Categorization of Results
Convert the average value into an effectiveness category based on the class interval:
- 1.00 - 1.80: Very Ineffective
- 1.81 - 2.60: Ineffective
- 2.61 - 3.40: Quite Effective
- 3.41 - 4.20: Effective
- 4.21 - 5.00: Highly Effective

e. Data Interpretation
Conduct an in-depth analysis of statistical figures by linking them to:
- Context of the main duties and functions of the Kesbanpol Agency
- Information systems theory (DeLone and McLean Model)
- Previous studies
- Findings from observations and documentation studies

Stage 4: Preparation of Reports and Recommendations, The final stage of research includes:

a. Preparation of Research Reports
Compile a systematic research report with the following structure: Introduction, Literature Review, Object Profile, Results and Discussion, and Conclusions and Suggestions.

b. Formulation of Recommendations
Based on the findings of the study, formulating concrete recommendations that can be implemented to improve the effectiveness of the use of SIPD, including the following aspects:

- Improvement of IT infrastructure
- Strengthening human resource capacity
- System feature and performance optimization
- Improved technical support

c. Validation of Findings

Discuss the results of the research with the supervisor and the Kesbanpol Agency to ensure that the findings and recommendations are relevant and can be implemented.

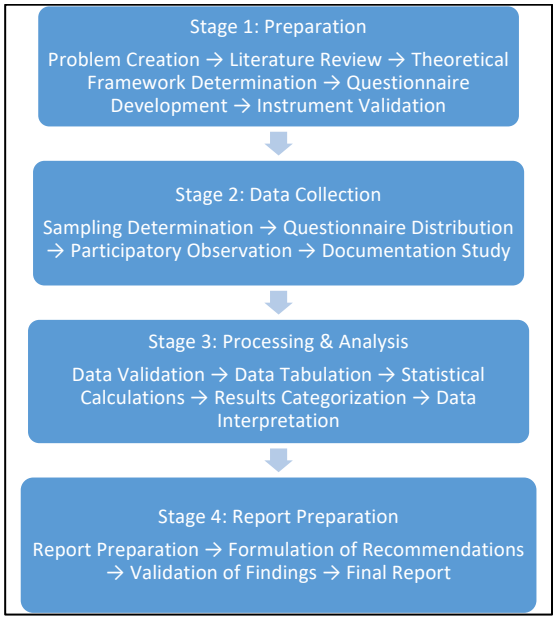

Figure 1. Stage Flow Diagram

All stages of this research were carried out in a period of 4 months (August - November 2024) involving 40 respondents from various work units at the South Sumatra Provincial Health and Social Welfare Agency.

3. RESULTS AND DISCUSSION

3.1 Respondent Demographic Profile

The analysis of the respondents' profiles provides important insights into the background of SIPD users at the Kesbangpol Agency. Based on the data collected, the majority of respondents (75%) are in the productive age range between 25 and 45 years old. This age group is generally categorized as digital immigrants who are quite adaptive or even digital natives, who have an adequate level of technological literacy. The educational background of the respondents is dominated by Bachelor (S1) and Diploma (D3) graduates from the disciplines of administration, economics/accounting, and informatics engineering. This composition shows that in terms of basic competencies, employees of the Kesbangpol Agency have sufficient modalities to operate complex management information systems[9].

In terms of experience of use, the average respondent has been using SIPD for 3-4 years. This indicates that they have passed the initial adaptation phase (learning curve) and are now in the stage of regular use. However, this considerable experience also means that their assessment of the system is based on valid long-term interactions, not just first impressions.

3.2 Descriptive Statistical Analysis of the Effectiveness of SIPD

Table 1. Summary of Descriptive Statistics per Question Item

Item	Dimensions	Quick Questions	Mean	Std Dev	Min	Max	Category
Q1	System Quality	Ease of navigation	2.75	0.82	1	4	Quite Effective
Q2	System Quality	Access speed	2.85	0.88	1	5	Quite Effective
Q3	System Quality	System reliability	2.80	0.75	2	4	Quite Effective
Q4	System Quality	Feature integration	3.30	0.92	1	5	Quite Effective
Q5	Quality of Information	Data completeness	3.50	0.76	2	5	Effective
Q6	Quality of Information	Data accuracy	3.20	0.65	2	4	Quite Effective
Q7	Quality of Information	Punctuality	2.95	0.85	2	4	Quite Effective
Q8	Quality of Information	Report format	3.10	0.78	2	4	Quite Effective
...	...	...	...	...	...	...	...
Q27	Organizational Impact	Planning fit	3.60	0.67	2	5	Effective

The table above shows descriptive statistics for each question item, providing a more detailed picture of respondents' perceptions. Some key findings:

a. Items with the highest score: Q27 (Planning-budgeting suitability, score 3.60) and Q5 (Data completeness, score 3.50)
b. Items with the lowest score: Q1 (Ease of navigation, score 2.75) and Q3 (System reliability, score 2.80)
c. Highest standard deviation: Q4 (Feature integration, SD 0.92), showing the most diverse perceptions between respondents
d. Lowest standard deviation: Q6 (Data accuracy, SD 0.65), indicating a relatively high consensus among respondents

These findings confirm that technical issues (ease of navigation, system reliability, speed of access) are areas that need the most immediate improvement. The evaluation of the effectiveness of SIPD was carried out by analyzing the average scores of 40 respondents' answers to 27 question items. The results of the descriptive statistical calculation for each dimension are presented concisely in Table 2 below.

Table 2. Recapitulation of Questionnaire Analysis Results by Dimension

Variable Dimensions	Average score (*Mean*)	Standard Deviation	Effectiveness Category
System Quality	2.93	0.74	Quite Effective
Quality of Information	3.19	0.68	Quite Effective
System Usage	3.48	0.56	Effective
User Satisfaction	3.22	0.73	Quite Effective
Individual Impact	3.15	0.69	Quite Effective
Organizational Impact	3.32	0.66	Quite Effective
Overall Average	3.22		Quite Effective

In aggregate, the average effectiveness value of SIPD is 3.22, which places it in the "Quite Effective" category. This indicates that the implementation of SIPD in the Kesbangpol Agency has been running and provides basic benefits, but has not yet reached the optimal performance expected from a mature e-government system. There is significant variation between dimensions, where the "System Usage"

dimension achieves the highest score (Effective category), while the "System Quality" dimension is at the lowest score.

3.3 In-Depth Discussion Per Dimension

3.3.1 System Quality - The Main Weak Point

The System Quality Dimension recorded the lowest score of 2.93, making it a major bottleneck in the overall effectiveness of SIPD. An analysis of Q1 to Q4 question items reveals several critical issues:

a. Access Speed (Response Time): Respondents, especially from the APBD Drafting Staff group, consistently gave low scores on items related to system loading speed. This problem becomes particularly acute during the peak season, where all OPDs in Indonesia access the central servers of the Ministry of Home Affairs at the same time. The limited internet network infrastructure in the Kesbangpol Agency office also exacerbates this condition, causing high latency that hinders productivity.
b. System Reliability: There are still frequent technical errors, such as data storage failures (save errors) or sessions that end abruptly (session timeout). For users who are entering lengthy shopping details, this incident is very frustrating because it requires re-input
c. Flexibility of Features: Features in SIPD are considered rigid and less adaptive to the dynamics of specific regional needs. For example, the mechanism of budget shifts that have a very long procedure in the system is often not in line with the needs of handling urgent situations, such as social conflicts that require a quick budget response from the Kesbangpol Agency.
d. These findings are in line with the research of Samosir et al. (2023) which states that the centralization of government information systems often sacrifices flexibility and speed of access for the sake of data uniformity. In the context of Kesbangpol, the quality of this "mediocre" system is a real technical obstacle.

3.3.2 Information Quality - Quite Good but Needs to be Reformatted

With a score of 3.19, the quality of the information produced by SIPD is considered quite good.

a. Accuracy: The accuracy aspect of data is highly valued. The multi-level validation mechanism in the SIPD (starting from staff input, verification of the Head of Subdivision, to the validation of the Head of Agency) is effective in minimizing budget arithmetic errors.
b. Timeliness & Format: A major issue in this dimension is the format of the report. APBD analysts often complain that the default reports produced by SIPD are often incompatible with the internal managerial report format requested by regional leaders. As a result, analysts have to do a double job: download data from SIPD, and then manually reformat it in a spreadsheet. This reduces efficiency and increases the risk of human error at the secondary reporting stage.

3.3.3 System Use - Pseudo-Effectiveness?

The System Usage Dimension obtained the highest score of 3.48 and is the only dimension that is categorized as "Effective". However, this high number must be interpreted critically. In the context of a mandatory system, the high frequency of use does not necessarily reflect the user's voluntariness or love for the system. Employees of the Kesbangpol Agency use SIPD intensively (Q9-Q12) because this system is the only legal channel for submitting and disbursing budgets. There is no other alternative. If they do not use SIPD, the budget will not be disbursed and the work program cannot run. Therefore, this high usage score reflects compliance and lack of choice, rather than the success of the system in attracting user interest. However, the positive side is that SIPD has succeeded in becoming the backbone of operations and eliminating the use of unintegrated shadow systems.

3.3.4 User Satisfaction - Mirror of System Quality

A user satisfaction score of 3.22 indicates that users are "moderately satisfied", but not enthusiastic. There is a strong correlation between low system quality (slow speeds, errors) and this moderate level of satisfaction. Analysis of individual respondent data shows an interesting anomaly. IT Support teams (R36-R40) tend to give slightly higher satisfaction scores than Drafting Staff (R1-R15). This may be due to different self-efficacy; IT teams have the technical ability to troubleshoot independently, so their frustration is lower than administrative staff who feel helpless when the system is down. This underscores the importance of responsive technical support to maintain user satisfaction [13].

3.3.5 Individual Impact - The Productivity Paradox

A score of 3.15 on the individual impact dimension indicates the existence of a phenomenon of the "productivity paradox". On the one hand, SIPD makes it easy to search for historical data and supports the concept of paperless offices. However, on the other hand, complex input procedures and slow system performance make task completion time longer than the previous system. Some respondents (e.g. R9 and R14) gave a low score on productivity items (Q19), which implies the perception that this system actually adds to the administrative workload. For field employees at the Kesbangpol Agency who are used to working dynamically, having to sit for hours waiting for the system to load is considered counterproductive[10].

3.3.6 Organizational Impact - Increased Accountability

Although individual users face challenges, they recognize that SIPD has a significant positive impact on organizations with a score of 3.32. Transparency & Accountability: SIPD creates a complete digital audit trail. Any changes in budget figures are recorded by the system, minimizing the chance of "stealth budgeting" or unauthorized data manipulation. This is crucial for the Kesbangpol Agency which manages sensitive grant funds such as political party assistance[11]. Planning-Budgeting Integration: The SIPD forces consistency between the planning document (Renja) and the budget document (RKA). Activity programs that are not in the planning cannot suddenly appear in the budget. This improves planning discipline in the Kesbangpol Agency.

3.4 Analysis of Perception Variations Between Positions

The respondents' data showed an interesting variation in perception between groups of positions. The Treasurer group gave a relatively higher average score (3.29) than the APBD Analyst (3.15). This is likely due to the fact that the financial administration feature in the SIPD is more structured and helps the treasurer's duties in bookkeeping, while the analysis feature for budget analysts is still limited. The Compiling Staff has the most diverse perceptions, greatly influenced by the quality of the internet connection when they work. This variation shows that the improvement intervention strategy cannot be hit evenly, but must be adjusted to the specific needs of each user role[12].

4. CONCLUSION

Based on a comprehensive analysis of the effectiveness of the use of the Local Government Information System (SIPD) in the process of preparing the APBD at the South Sumatra Provincial Kesbangpol Agency, several strategic conclusions can be drawn:

a. Effectiveness Level: The implementation of SIPD is generally at the level of "Moderately Effective" (Score 3.22). This system has served as the main instrument of regional financial administration, but it still has significant room for improvement to achieve optimal effectiveness.
b. Infrastructure Gap: The System Quality Dimension (2.93) is the weakest point. The limitations of network infrastructure, central server response speed, and rigidity of system features are the main obstacles that erode productivity and user satisfaction.
c. Compliance vs Satisfaction: The high System Usage score (3.48) is driven more by regulatory mandates (obligations) than the quality of the user experience (User Experience). Users comply with the system despite facing technical constraints.
d. Positive Institutional Impact: Despite technical constraints at the individual level, SIPD has proven to be effective in improving the accountability, transparency, and discipline of budget planning at the organizational level of the Kesbangpol Agency. This system successfully mitigates the risk of budget irregularities.
e. Human Factors: The success of the current implementation depends heavily on the durability and adaptability of human resources who are willing to go the extra mile to overcome the system's shortcomings.

Suggestions and Recommendations:

To improve the effectiveness of SIPD in the future, the following steps are recommended:Bagi Manajemen Badan Kesbangpol:

a. IT Infrastructure Upgrades: Make priority investments in dedicated internet bandwidth upgrades and rejuvenation of operators' computer devices to address local latency issues.

b. Strengthening Internal Helpdesk: Establish a more responsive and proactive internal technical support team to assist non-technical employees when facing system constraints.

For Provincial/Central Governments (System Developers):

a. Server & Feature Optimization: It is necessary to optimize the capacity of the central server to handle peak loads. In addition, the development of more flexible custom report features is needed so that regions can produce managerial reports without manual work.
b. Continuous Training: Changing the training method from mass socialization to more in-depth and specific role-based technical training.

For future researchers:
It is recommended to conduct further qualitative research to delve deeper into the coping mechanisms of user adaptation strategies in dealing with SIPD technical constraints, as well as expand the scope of research to other OPDs to obtain a comparative picture.

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