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Implementation of Public Budget Governance Through a Web-Based Information System in the Government of Palangka Raya City to Achieve Good Governance

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Abstract: In the era of digitalization, transparency and accountability in public budget management are the main demands in realizing good governance. The Palangka Raya City Government seeks to improve the effectiveness and efficiency of budget governance by implementing a website-based information system. This system aims to facilitate access to financial information, increase public participation, and minimize the potential for budget abuse. This research uses an empirical juridical approach to evaluate the effectiveness of SIMTEPRA in improving transparency and accountability of budget management in Palangka Raya City. Data were collected through interviews, direct observation and literature review, and analyzed descriptively-qualitatively to link existing regulations with field findings and identify implementation constraints and opportunities. With this system, it is expected that public budget management can be more transparent, accountable, and responsive to community needs. However, the successful implementation of this information system is highly dependent on supporting regulations, the readiness of human resources, and adequate technological infrastructure. Therefore, further studies are needed to assess the extent to which this system has been effective in supporting the principles of good governance in Palangka Raya City. The results of this study have implications for strengthening budget digitization regulations, increasing human resource capacity, building IT infrastructure, and optimizing e-government to support transparency, accountability, and data-based policies.

Keywords: Public Budget Governance; Information System; Website; Government of Palangka Raya City; Good Governance

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1. Introduction

Good public budget management is one of the keys to realizing good governance (Puffer & McCarthy, 2003). One way to improve the efficiency of national and regional budget management (APBN/APBD) is by conducting regular field evaluations to assess actual implementation outcomes. Additionally, the adoption of information technology in APBN management can also enhance efficiency (Shu et al., 2023). Based on Gandhi et al. (2017), the use of integrated information systems can help reduce bureaucracy, increase the speed and accuracy of data collection and processing, and minimize the potential for human error.

Prior to the adoption of information technology, public budget management faced a variety of obstacles, most notably complex bureaucracy, lack of transparency, and the risk of human error in financial recording and reporting. Manual processes in budget planning, submission and reporting slowed down the realization of government programs and increased the potential for irregularities, including corruption and manipulation of financial data. In addition, limited public access to budget information weakens public oversight of the country's financial management.

Recording errors resulting from manual processes often lead to mismatches between planned budgets and realizations in the field, potentially leading to inefficiencies in the use of public funds. Audit and evaluation processes that rely on physical documents also hamper the effectiveness of oversight and increase the risk of data loss or corruption (Rashied et al., 2024). To overcome these problems, the government has adopted information technology systems such as the State Financial Management Information System (SIMPONI) and the Regional Financial Information System (SIKD), which improve efficiency, transparency and accountability in budget management. The implementation of e-Planning and e-Budgeting, for example, has accelerated the planning and budgeting process in various regions, enabling program implementation without being hampered by bureaucratic red tape (Gangi et al., 2019).

One concrete example is the implementation of e-Budgeting in the Provincial Government of DKI Jakarta, which has been implemented since 2015. Before the implementation of e-Budgeting, budget management in Jakarta often faced problems such as stealth budgets and mismatches between proposed budgets and field needs. After the implementation of e-Budgeting, the process of budget submission, approval, and reporting has become more transparent and efficient. The system also allows the public to monitor the budget through an online platform, thus promoting local government accountability.

Through information technology-based transformation, budget management in Indonesia is becoming more modern, transparent and efficient, which in turn supports better governance (Prayitno, 2023). Palangka Raya City Government as a government institution at the local level has the responsibility to manage public budgets in a transparent, accountable and efficient manner. In an effort to improve the quality of public budget management, the Palangka Raya City Government has made innovations by implementing a website-based information system in public budget management after the issuance of Presidential Decree of the Republic of Indonesia Number 20 of 2015 concerning the Evaluation and Supervision Team for the Realization of the State Budget and Regional Budget.

The scale of budget problems prior to the implementation of web-based systems in many regions was characterized by low transparency, operational inefficiencies, and weak financial management structures. Traditional systems, such as the Planning Programming Budget System (PPBS), often faced conceptual and operational constraints, which ultimately hampered the effectiveness of budget management (Lewis, 1988). The lack of a comprehensive framework for budgeting leads to difficulties in accountability and proper resource allocation, especially at the local government level, where bureaucratic reforms are often not maximized (Wijayanto, 2015). Lack of transparency makes it difficult for stakeholders to understand budget allocations and decision-making (Wijayanto, 2015). In addition, the manual methods still widely used in traditional budgeting systems increase workload and lead to inefficiencies, especially in large projects that require more complex fund management (Manurung & Saian, 2022). Resistance to change is also a barrier, with bureaucratic inertia slowing the adoption of new, more modern approaches (Carey & Shipley, 1973).

The website-based information system is a form of innovation in public services that aims to increase transparency, accountability, and public participation in public budget management (Lee-Geiller & Lee, 2019). Through the implementation of a web-based information system, it is expected that the public can gain easier and faster access to information about public budgets (Kingston et al., 2000), in this case in the field of Development Administration of the Regional Secretariat of Palangka Raya City.

Prior to the implementation of a web-based information system in Palangka Raya City, budget management and reporting still used conventional methods that tended to be manual. This process required a lot of time, energy, and had a high risk of recording errors, data manipulation, and non-transparency in the presentation of financial information. It is also difficult for the public to access budget information openly, so public participation in monitoring budget realization is very limited. In addition, evaluation and monitoring of budget performance by relevant parties, such as auditors and local government evaluation teams, is less than optimal due to the limited data available in real-time.

The Palangka Raya City Government faces various obstacles in financial governance, mainly due to a slow and inefficient manual administration system. The process of budget submission and reporting still relies on physical documents, causing delays in program implementation, low budget absorption, and increased risk of irregularities. The lack of transparency in access to financial data also increases the potential for discrepancies in budget allocation and realization. Validation and accuracy of financial data remains a challenge. Recording errors are common, hampering the effectiveness of financial management and complicating budget evaluation. Slow monitoring processes due to manual systems further exacerbate the situation, as corrections and corrective actions cannot be taken quickly. With a web-based information system, most of these problems can be overcome, such as speeding up bureaucracy, increasing transparency through better public access, and facilitating monitoring and evaluation (Sun et al., 2015). This also supports the creation of better governance in Palangka Raya City. However, various issues arise in the implementation of public budget governance through a web-based information system within the Government of Palangka Raya City in achieving good governance.

The implementation of an information system in public budget management still faces several challenges, particularly in terms of human resources (HR), infrastructure, public participation, and complex regulations. The limited availability of human resources with expertise in information technology hinders the optimization of system management, while uneven technological infrastructure further obstructs the efficiency and effectiveness of the system's implementation (Nisa & Muntiah, 2024). Additionally, public participation in utilizing the web-based system remains low, presumably due to limited digital literacy and insufficient government outreach regarding the benefits and proper use of the system. This situation contradicts the primary goal of implementing information technology in budget management, which is to enhance transparency and accessibility of information for the public.

On the other hand, regulatory complexity is also a major challenge in implementing a technology-based system. Overlapping regulations that still rely on manual systems hinder the adoption of information technology in public budget management. The lack of harmonization between central and regional regulations further complicates the implementation process, especially in procurement procedures that still require physical documents for audit purposes. The misalignment of regulations with technological advancements affects the effectiveness of digitalization in public budget management.

Another critical issue in the implementation of the web-based system is data protection and information confidentiality. The application of a web-based system in public budget management in Palangka Raya City still faces various obstacles, particularly in legal, regulatory, and bureaucratic preparedness aspects. Law No. 17 of 2003 on State Finance and Law No. 23 of 2014 on Regional Government emphasize the importance of transparency and accountability in public financial management. However, the implementation of these regulations remains weak, particularly in terms of digital access and budget data management. Although regulations such as the Personal Data Protection Law (2022) have been enacted, their implementation at the regional level remains limited, making budget data uploaded into the system vulnerable to unauthorized access (Hossain et al., 2024). In addition, legal mechanisms to deal with cybercrime, such as data manipulation and hacking, are still not robust, resulting in difficulties in determining legal responsibility and effective countermeasures.

Bureaucratic resistance to digitization is also a challenge (Kohavi et al., 2009), with some parties still doubting the validity of electronic documents even though the Electronic Information and Transaction Law (UU ITE) has recognized the validity of digital signatures (Guntik & Yustiawan, 2022). Another obstacle arises from the suboptimal implementation of policies related to technology utilization, as mandated by Presidential Regulation No. 95 of 2018 on the Electronic-Based Government System (SPBE), as well as the low level of budget information transparency in accordance with Law No. 14 of 2008 on Public Information Disclosure. Regulatory limitations, lack of public outreach, and technical constraints hinder the effectiveness of the web-based system in achieving budget management transparency and accountability. Therefore, regulatory strengthening and legal implementation optimization are necessary to ensure that digital transformation in public administration can function more effectively.

In addition to Palangka Raya City, several other regions with similar characteristics that have also successfully implemented web-based systems include Banjarmasin City, Pulang Pisau Regency, Samarinda City, and Balikpapan City. Banjarmasin City, as the capital of South Kalimantan, has developed an e-government system that facilitates online public services (Suriyani, 2018). Meanwhile, Samarinda City, the capital of East Kalimantan, has integrated web-based systems in various sectors, with a focus on improving transparency, accountability and accessibility of information for citizens. Balikpapan City is not far behind, developing various e-government applications that strengthen public service management while facilitating interaction between the government and the community, in line with the innovative steps taken by Palangka Raya City. The implementation of web-based systems in these areas shows that digital innovation has the potential to create more effective, efficient, and accountable management of public administration and services.

This study aims to analyze the implementation of a web-based information system in public budget governance within the Government of Palangka Raya City to achieve good governance. Specifically, this research seeks to identify the effectiveness of the system in improving budget management transparency and accountability, examine the challenges faced in its implementation, and provide strategic recommendations to optimize the web-based budget information system in the regional government environment.

The novelty of this research lies in its approach to evaluating the implementation of a web-based budget information system at the regional government level, particularly in Palangka Raya City. Unlike previous studies that focused separately on technological or regulatory aspects, this study integrates an analysis of technical factors, policies, and human resource readiness in the system's successful implementation. Additionally, this research provides an empirical overview of the implementation of the Budget Realization Monitoring and Evaluation Team Management Information System (SIMTEPRA) as an innovation model in public budget governance.

2. Materials and Methods

The research method used in this study is the empirical juridical approach, often referred to as the normative-empirical method. This approach is employed to analyze the implementation of a web-based information system in public budget governance within the Government of Palangka Raya City and its effectiveness in supporting the principles of good governance. Specifically, this study examines the budget information system by referring to various applicable regulations, such as Law No. 17 of 2003 on State Finance, Law No. 23 of 2014 on Regional Government, and Presidential Regulation No. 95 of 2018 on the Electronic-Based Government System (SPBE), which serve as the legal foundation for the digitalization of government financial administration.

This research adopts a descriptive-qualitative approach, aiming to understand and illustrate how the web-based information system has been implemented and the challenges encountered in its execution. The data used consist of both primary and secondary data. Primary data are obtained through interviews with government officials responsible for budget system management, experts in regional finance, and members of the public who access the system. Additionally, direct observation of the information system is conducted to assess its effectiveness in enhancing transparency and accountability in regional budget management. Secondary data are collected through a literature review covering legal documents, relevant regulations, academic journals, and official documents such as regional financial reports and evaluations of the web-based information system implementation.

Respondents were selected by considering the relevance of their roles and involvement in the implementation of web-based information systems that support transparency and accountability in budget management. Respondents were selected purposively, including government officials responsible for local budget management, financial staff who operate the SIMTEPRA system (Management Information System for the Budget Realization Evaluation and Monitoring Team), and citizens who play a role in overseeing budget policies. With these criteria, the data obtained is expected to provide a representative picture of policy implementation and the effectiveness of the web-based information system implemented.

In the analysis process, a descriptive-analytical approach is used to connect the normative aspects listed in government regulations with empirical findings in the field. Findings such as technical constraints, low digital literacy, and bureaucratic obstacles are analyzed with reference to policies that support the principles of transparency and accountability of regional finances. This approach seeks to evaluate the extent to which SIMTEPRA implementation is in accordance with the principles of good governance.

Data collection techniques include literature review, in-depth interviews, and observation. The literature review examines various regulations and literature related to budget information systems and the principles of good governance, particularly in connection with Law No. 14 of 2008 on Public Information Disclosure, which emphasizes the importance of public access to government budget information. In-depth interviews are conducted with various stakeholders to gain insights into the challenges, benefits, and effectiveness of the system's implementation. Observations are carried out to analyze how the system operates in practice and to evaluate the level of information transparency provided to the public.

The data analysis technique used in this study is descriptive-qualitative analysis, where the collected data are categorized, compared, and analyzed based on relevant theories and regulations. A normative legal approach is applied to assess the extent to which the implementation of this information system aligns with existing regulations, while an empirical approach is used to identify the challenges and opportunities in its application.

3. Results

3.1 Implementation of Website-Based Information System in Improving Budget Transparency and Accountability

Good public budget governance is a key indicator in realizing the principles of good governance. Two fundamental aspects of quality budget governance are transparency and accountability. Transparency is the principle that ensures openness of information to the public regarding budget policies, the preparation process, and the results achieved. With transparency, the public has access to information about revenues, expenditures, and allocation of government funds, so that they can play a role in monitoring and providing input on regional financial policies (Krina & Lalolo, 2003; Stiglitz (2002).

Accountability refers to the government's obligation to be accountable for managing the budget efficiently and in accordance with applicable regulations (Waluyo, 2007). Accountability consists of two forms, namely vertical and horizontal (Mardiasmo (2021). Vertical accountability refers to the accountability of local governments to the central government or institutions that have higher authority. Meanwhile, horizontal accountability is the government's accountability to the wider community. Accountability acts as an instrument of control to ensure that budget policies are implemented transparently and are not misused (Bovens et al., 2008). As such, transparency and accountability are key pillars in effective public budget governance. Transparency creates information disclosure that allows the public to participate in oversight, while accountability ensures that every budget policy can be clearly accounted for. The application of these two principles will improve the effectiveness of local financial management and strengthen public trust in government (Harrison & Sayogo, 2014).

In the current digital era, the use of information technology in public budget management has become a necessity to create more transparent and accountable governance. One of the many innovations implemented by local governments is the use of web-based information systems to manage and present real-time financial data to the public and other stakeholders.

This system not only serves as a financial administration tool, but also becomes an important instrument in building public trust through increased budget transparency and accountability. With the digitization of local finance, it is expected that the public can more easily access information related to budget management, so that public oversight of government fiscal policy becomes more effective.

a. Digitalization of public budget management;

Public services are part of the government's obligation to fulfill the rights of its citizens. According to Law Number 25 of 2009 concerning Public Services, Public Services are activities or series in the context of fulfilling service needs in accordance with statutory regulations for every citizen and resident for goods, services, and / or administrative services provided by Public Service providers. Public Services are indeed a demand for the needs of society in carrying out social life activities in modern countries. According to Delaunay dan Gadrey (2012), Public Services basically, every human being needs service, even at the extreme it can be said that service cannot be separated from human life.

Public Service Providers, both central and regional, are not just providing makeshift services to the community, but the Public Services provided must pay attention to the quality and also good service standards and can be used as a benchmark for good governance in Indonesia. Referring to (Andrews, 2008), the concept of good governance emerged because of dissatisfaction with the performance of the government, which has been trusted as the organizer of public affairs. Good governance practices can be carried out in stages in accordance with the capacity of government, civil society and market mechanisms. One of the strategic options for implementing good governance in Indonesia is through the implementation of Public Services.

Mulyadi (2016) stated that the duty of the government is to serve and regulate the community, that the duty of the servant emphasizes more on prioritizing the public interest, simplifying public affairs, shortening the time of the process of implementing public affairs, and the government should provide the best quality to citizens related to Public Services. According to Pidd (2012), Public Service quality is a dynamic condition related to products, services, people, processes and the environment where quality assessment is determined at the time of the Public Service.

Kosec & Wantchekon (2020) explained that The government as a service provider to the community must also pay attention to the effectiveness and efficiency of providing services such as, paying attention to space, time, and costs that will be a burden for service lovers. However, in Indonesia it is an open secret that the services provided by government agencies are still not optimal, in fact the current Public Service is still less effective and efficient. It can be seen from the fact that many people still have to come repeatedly to an agency and meet face to face in meeting the requirements or procedures that must be completed.

In the current era, technological advances are increasingly sophisticated and are developing rapidly following the current globalization (Narula & Dunning, 2000). The provision of service innovations is needed by the community (Franke & Shah, 2003). With this innovation, it can make it easier for the public to access information related to the village and is also expected to be able to improve the system of procedures for implementing public services.

One of the utilization of technological advances in public services is through digitization of public services, including one of which can be applied in public budget management. any time and reducing the risk of manipulation or concealment of financial data by certain parties. One of the utilization of technological advances in public services is through digitization of public services, including one of which can be applied in public budget management. The implementation of a website-based information system in budget management provides various benefits, including: (a) Increased transparency, which includes making budget information accessible online to the public at any time and reducing the risk of manipulation or concealment of financial data by certain parties; (b) Speeding up administrative processes, including digital systems allow for faster and more efficient budget input, processing and reporting, and reduce the use of physical documents that could potentially be lost or damaged; (c) Improving accountability, including that every transaction and use of the budget can be traced systematically, and facilitating audits by the Supreme Audit Agency (BPK), Inspectorate, and other oversight agencies; (d) Preventing corruption and budget abuse, including that digitization can reduce the practice of bribery or budget manipulation through automatic and integrated recording, and the use of blockchain technology or digital signatures can increase the security of government financial transactions. (e) Increasing public participation, the benefits include that the public can provide input or reports related to budget policies through digital platforms, and provide space for the public to oversee budget allocations and realization in a more transparent manner.

b. The role of web-based information systems in improving financial data disclosure;

The definition of a system according to Raymond McLeod A system is a group of elements that are integrated with the same purpose to achieve a goal (Ladjamudin, 2005). Meanwhile, according to Gordon B. Davis, System as interrelated parts that operate together to achieve some goal or purpose. Understanding the system according to Abdul Kadir in the book Introduction to Information Systems, namely: "A system is a set of interrelated or integrated elements that are intended to achieve a goal" (Kadir, 2014). Meanwhile, information according to Tata Sutabri is data that has been classified or processed or interpreted for use in the decision-making process (Sutabri, 2017).

From the explanation above, if the phrases system and information are put together, the information system can be interpreted as a set of elements that are interrelated and integrated to achieve a certain goal. The elements in this system operate together in an integrated manner to achieve predetermined goals. In the context of information, this system processes, classifies and interprets data so that it can be used in the decision-making process.

In the digital era, information systems lead to the utilization of technology by creating websites, so that currently the government has developed a website-based information system as a public service. A website-based information system is a system designed to manage, process, and present information through a web-based platform, so that it can be accessed online via the internet or local networks (Chassiakos & Sakellaropoulos, 2008).

It combines information system elements (such as data, processes, and technology) with web technology to provide services that are more flexible, accessible, and can be integrated with various devices. According to Saipullah, S.H., Head of the Communication, Informatics, Statistics and Standardization Office of Palangka Raya City, the characteristics of a website-based information system are: (a) Accessible via browsers (Google Chrome, Firefox, Safari); (b) Does not require additional software installation for end users; (c) Utilizes internet technology for data exchange and storage; (d) Can be accessed from various devices (PC, laptop, smartphone); (e) Facilitates real-time data processing and information presentation.

In the context of public budget governance, a web-based information system plays a crucial role in ensuring budget transparency and accountability through the following ways: (a) Providing open access to financial information; (b) A public budget portal allows citizens to easily access data related to: (c) Regional Revenue and Expenditure Budget Plan (APBD); (e) Budget realization reports; (f) Government financial accountability reports; (g) Regional expenditure data categorized by sector and project.

An example of this system can be found in the APBD Online portal, which has been implemented in various regions in Indonesia, including in the Government of Palangka Raya City. This portal enables the public to transparently view budget allocation and utilization.

a. Facilitating budget monitoring and evaluation;

A web-based information system enables both the public and auditors to monitor budget management in real-time. This helps prevent budget markups, fictitious projects, or misuse of public funds.

b. Enhancing public participation in budget oversight;

With open financial data, citizens can actively oversee and provide input on budget policies. Some regions have implemented budget complaint reporting features, allowing the public to report any indications of budget irregularities directly through digital platforms.

c. Improving the efficiency of reporting and auditing processes;

Through digital systems, government financial reporting can be conducted automatically, accurately, and well-documented. This greatly supports the audit process conducted by The Audit Board of Indonesia (BPK), Regional Inspectorates, Other supervisory institutions. By implementing such systems, the risk of data manipulation or fund embezzlement can be minimized.

The implementation of web-based information systems in public budget governance is a strategic step in improving transparency and accountability of local finances. Digitalization allows the public to access budget information openly, accelerate financial administration processes, and prevent budget misuse. However, in its implementation, there are still challenges such as infrastructure limitations, human resource readiness, and data security threats. Therefore, a commitment from local governments is needed to continuously improve the quality of digital infrastructure, provide training to apparatus, and ensure data security in web-based information systems. With a transparent and accountable system, it is expected that public budget management in Palangka Raya City (and other regions) can be more effective, efficient, and in favor of the public interest.

3.2. *Implementation of Budget Information System in Palangka Raya City Government with Management Information System Approach of Budget Realization Evaluation and Monitoring Team (SIMTEPRA)*

In an effort to improve the transparency and accountability of budget management, the Palangka Raya City Government has implemented a web-based information system that allows for more effective monitoring of budget realization. One of the approaches used is the Management Information System for the Budget Realization Evaluation and Monitoring Team (SIMTEPRA), which is tasked with evaluating and monitoring budget implementation in each local government work unit.

SIMTEPRA acts as a control mechanism that integrates financial information systems with budget realization performance evaluation. Through this system, data related to revenue, expenditure, and budget absorption can be accessed in real-time, thus facilitating the process of monitoring and decision-making by stakeholders.

The Palangka Raya City Government has adopted a website-based budget information system that has several main features, including:

a. Budget Monitoring Dashboard;

Displays budget realization data for each Regional Government Organization (OPD). It provides information on deviations between planned and realized budgets.

b. Digital Financial Reports;

Facilitates OPDs in automatically preparing financial reports, reducing errors in manual recording and reporting.

c. Public Complaint System;

Citizens can report discrepancies in budget usage through a digital platform, increasing public participation in regional financial oversight.

d. Budget Realization Performance Evaluation;

SIMTEPRA utilizes this system to assess OPD performance in budget utilization, providing recommendations for improvement if budget absorption issues arise.

SIMTEPRA plays a crucial role in ensuring that every fund allocated in the Regional Revenue and Expenditure Budget (APBD) is used effectively and according to planning. Based on observations, SIMTEPRA contributes to budget management in Palangka Raya City through the following:

a. Budget Absorption Monitoring;

SIMTEPRA regularly tracks how much of the budget has been realized by each OPD and identifies obstacles leading to low budget absorption.

b. Early Detection of Budget Irregularities;

The information system allows SIMTEPRA to detect potential budget misuse through financial data analysis. If unusual budget realization patterns are found, SIMTEPRA can take preventive measures immediately.

c. Improving OPD Performance in Budget Management;

OPDs are evaluated based on the effectiveness of budget utilization. Recommendations for improvement are provided for OPDs experiencing difficulties in budget realization.

d. Enhancing Public Participation in Budget Oversight;

With a web-based system, the public can access budget information and provide direct feedback. This transparency strengthens public trust in the local government.

The implementation of a web-based budget information system in Palangka Raya City using the SIMTEPRA approach has had a positive impact on improving transparency and accountability in regional financial management. With a digital evaluation and monitoring mechanism, the local government can more effectively oversee budget usage and detect potential irregularities. However, to achieve optimal effectiveness, technological infrastructure improvements, training for government officials, and strong commitment from all stakeholders are needed to ensure that this system functions optimally in realizing good governance in Palangka Raya City.

3.3. Barriers to the Implementation of the Budget Information System in Palangka Raya City Government with the Budget Realization Evaluation and Monitoring Team Management Information System Approach (SIMTEPRA)

The implementation of the Budget Realization Evaluation and Monitoring Team Management Information System (SIMTEPRA) in Palangka Raya City Government aims to improve the effectiveness of budget management through a website-based information system. SIMTEPRA is expected to provide transparency, accountability, and optimization of budget realization in various local government programs and activities. However, in its implementation, there are several barriers that hinder the effectiveness of this system. These obstacles can be categorized into three main aspects: technical barriers, human resource (HR) barriers, and regulatory and policy barriers.

1) Technical barriers in the implementation of SIMTEPRA;

Technical barriers are the main challenge in implementing the SIMTEPRA-based budget information system. Some of the factors that contribute to these technical constraints include:

a. Limited technology infrastructure and internet network;

SIMTEPRA relies heavily on adequate information technology infrastructure. However, in some areas of Palangka Raya City, there is still limited stable internet access, especially in suburban areas or administrative areas with inadequate networks. The server system has not been optimized, causing delays in processing and storing financial data. Lack of appropriate hardware support to optimally operate the SIMTEPRA system in various government agencies.

b. Data security and cyber threats;

Web-based budget information systems are vulnerable to cyber threats, such as hacking and leakage of financial data. Some of the problems that arise in this aspect are the absence of a strict data security policy, so the potential for data leakage remains a threat to budget transparency. Lack of a strong data encryption system and firewall, which increases the risk of attacks from irresponsible parties. Dependence on third parties in managing the system, which may pose a risk of manipulation or misuse of local financial data.

c. SIMTEPRA integration with regional financial system;

SIMTEPRA needs to be integrated with existing regional financial information systems, such as the Regional Financial Management Information System (SIMDA) or other systems used by the Palangka Raya City Government. However, there are several obstacles in this integration, including differences in data formats and system platforms, which cause difficulties in uniting information from various agencies. Lack of coordination between regional apparatus, so that synchronization of budget data is often delayed. Technical constraints in migrating old data to the new system, potentially causing discrepancies in financial records.

d. Human resource and institutional capacity constraints;

Based on the observation, constraints in the aspect of human resources are also a major challenge in the implementation of SIMTEPRA in Palangka Raya City. Some factors that affect the effectiveness of this system are:

1) Lack of digital literacy of government officials;

SIMTEPRA relies on the use of information technology in budget management. However, many government officials are still: Lack of understanding of the use of digital-based systems in local financial management. Difficulty in operating the SIMTEPRA system due to lack of training and technical assistance. Depend on manual methods in budget reporting and evaluation, thus slowing down the adaptation process to the digital system.

2) Resistance to change;

Some officials and financial administration staff showed resistance to using SIMTEPRA. Factors leading to this resistance include: Concerns about increased transparency that could reveal potential discrepancies in budget management. Bureaucratic culture that is still accustomed to conventional approaches in budget preparation and reporting. Lack of motivation to switch to a digital system due to the lack of incentives and appreciation for the use of SIMTEPRA.

3) Limited training and competency development;

The success of SIMTEPRA is highly dependent on the competence of the system users. However, until now there are still some obstacles in the aspect of human resource training and development, including: Limited technical training programs provided to local officials in managing budget information systems. The lack of IT experts in government agencies, resulting in slow system improvement and development. Lack of periodic evaluation of the performance of system users, leading to low levels of optimal utilization of SIMTEPRA.

e. Regulatory and policy barriers to SIMTEPRA implementation;

Regulatory and policy aspects are also a challenge in implementing SIMTEPRA. Some of the main obstacles in this aspect include:

1) Lack of regulations on financial data disclosure standards;

SIMTEPRA aims to improve transparency in budget management, but the lack of regulations governing data disclosure standards is a major obstacle. Some of the problems in this aspect are: the absence of regulations requiring local governments to upload real-time budget reports through web-based information systems. Variations in the application of budget transparency from one agency to another, due to the absence of clear standards on what information should be published. The absence of strict sanctions for agencies that do not implement budget transparency as required.

2) Absence of an effective oversight mechanism;

Although SIMTEPRA is designed to improve oversight of budget realization, the system still faces obstacles in the oversight aspect, including: the lack of role of independent oversight institutions in evaluating the effectiveness of SIMTEPRA. The absence of clear indicators in assessing the success of budget information system implementation in Palangka Raya City. The lack of public involvement in accessing and monitoring local financial data.

3) Bureaucratic constraints in implementing the SIMTEPRA policy;

Complex bureaucracy is often a major obstacle to SIMTEPRA implementation. Some of the obstacles that arise include: Convoluted administrative processes in the adoption and management of budget information systems. Disagreement between stakeholders in setting policies related to budget transparency and accountability. Inconsistent policy changes, resulting in unstable implementation of SIMTEPRA.

4. Conclusions

The Palangka Raya City Government has implemented the Budget Realization Evaluation and Monitoring Team Management Information System (SIMTEPRA) to improve transparency and accountability of budget management. SIMTEPRA functions as a control mechanism that integrates financial information with performance evaluation of budget realization. The system enables real time monitoring of budget receipts, expenditures and absorption, thereby facilitating the decision-making process. However, the implementation of SIMTEPRA faces various obstacles, such as limited technological infrastructure, low digital literacy of government officials, and weak regulations on data disclosure. Overcoming these challenges requires improving IT infrastructure, continuous training for human resources, and drafting regulations that support budget transparency and accountability. This study has several limitations, including limited coverage area in Palangka Raya City, small number of respondents, and technical constraints such as data access and internet infrastructure in peripheral areas. These limitations are expected to be inputs for further research to produce a more comprehensive study. The results of this study have important implications for the development of regional financial governance policies in Indonesia. The findings can serve as a reference for local governments in drafting regulations that are adaptive to budget digitization and human resource capacity building. In addition to strengthening transparency and accountability in the public sector, this research also contributes to enriching e-government and good governance studies related to information technology-based budget management.

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