Modeling and Implementation of the Village Secretary Accounting Information System based on BPMN

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Keywords: Village Financial Management, Internal Control, Village Financial Management Accountability, Business Process Modeling Notation (BPMN)

Abstract: This research is applied research that aims to improve the internal control of village financial management by implementing the modeling of the Village Secretary Accounting Information System based on the Business Process Modeling Notation (BPMN). Clean, effective, transparent, and accountable village financial management in Indonesia is currently not guaranteed because the Electronic-Based Government System has not been fully implemented. Village financial management accountability is the main topic discussed today because it relates to global development goals to achieve prosperity. The Village SDGs are a sustainable development goal that must be achieved by 2030. The Minister of Home Affairs Regulation Number 20 of 2018 concerning village financial management encourages villages to implement internal control in village financial management. This research uses the policy research method. The results showed what could apply the policy of using the Village Secretary Accounting Information System modeling based on the Business Process Modeling Notation (BPMN) in Wajak Lor Village. This research is limited to implementing the Village Secretary Accounting Information System modeling based on the Minister of Home Affairs Regulation Number 20 of 2018 concerning village financial management. Suggestions for further research are expected to be able to develop an Accounting Information System for village financial management based on Business Process Modeling Notation and develop village financial management applications that can be operated by the Village Secretary and integrated.
Introduction

A village is a community group with territorial boundaries and government powers to be managed independently to achieve the community's goals and be respected according to the governance of the Unitary State of the Republic of Indonesia (NKRI) (Sutrepti et al., 2022). The village is the lowest unit at the government level and is part of the government that interacts directly with the diversity of community problems (Setiawan & Yusoff, 2022). The Village Government is the central part of serving the community and is the first part of realizing the success of all programs (Daraba et al., 2018; Taufiqi & Ariani, 2022). Clean, effective, transparent, and accountable village financial management can also be Indonesia's main road to economic recovery after the COVID-19 pandemic (Susetyo et al., 2022).

Villages have sustainable development goals or Village SDGs to realize the welfare of rural communities independently (Fitriana et al., 2022). Villages have large enough funds to manage alone and creatively (Setiawan, 2016). Accountability for village financial management with current technology has not been able to guarantee the governance of village financial management in a clean, effective, transparent, and accountable manner so that village independence allows for procedural deviations to occur (Natalia, 2019).

Village financial management accountability is the main topic discussed at this time. The transparency and accountability of village finances have recently attracted public attention (Rakhmawati et al., 2021). Data from Indonesia Corruption Watch (ICW) in 2018 stated that there were 68 acts in East Java Province involving regional heads and village heads with a nominal value of 90.2 billion rupiahs (Sari et al., 2020). According to ICW, the highest cases of misuse of state money in 2019 were prosecuted by law enforcement officers according to ICW in the village budget sector (Hidayat et al., 2022).

Indonesia is a member of the Organization for Economic Co-operation and Development (OECD), so it has started making efforts to implement more independent and creative village financial management (Setiawan, 2016). Law number 6 of 2014 concerning Villages provides the foremost opportunity for villages to manage village finances independently (Temenggung, 2016). Village Governments are given their trust to realize the welfare of the community, the village, the environment, and the economy. Clean, effective, transparent, and accountable village financial management can bring prosperity to the village because the village is given a large number of funds. From 2015 to 2017, 74,954 villages in Indonesia received Village Funds from the State Budget (APBN) of 127.6 trillion Rupiah (Jamaluddin et al., 2018).

Previous research in Central Java Province showed that in 2019 there was a 3.5-fold increase in village funds and the results of the study with regression analysis showed that changes in the amount of the Village Fund budget had no significant effect on changes in village status in Central Java Province (Yulitasari & Tyas, 2020). Previous research in Cibuaya Village, Karawang Regency, revealed that there were obstacles to understanding and implementing regulations, and an error occurred in examining the allocation of funding sources in the implementation of Direct Cash Assistance (BLT) during the Covid-19 Pandemic (Noviyanti et al., 2022).
Minister of Home Affairs Regulation Number 20 of 2018 concerning Village financial management regulates that the Village Government can implement an internal control system for Village financial management (Husein & Latue, 2022). Weak internal control of an organization can cause adverse deviations such as loss of asset security guarantees, unreliable accounting information, efficiency not being guaranteed, and management policies cannot be complied with so that the financial statements issued by the organization become unreliable (Dewi, 2017). Understanding the Minister of Home Affairs Regulation Number 20 of 2018 concerning Village financial management is very important for all layers involved in the internal control of Village financial management. Participation significantly impacts village financial management (Susetyo et al., 2022).

Business Process Modeling Notation is a model diagram describing the flow of an activity's process (Yusmita et al., 2020). Business Process Modeling Notation makes it easy for users to understand the process flow of movement and to perform analysis (Riwaajanti et al., 2022; Sulthan et al., 2021). Business Process Modeling Notation (BPMN) is a graphic notation that presents a way of thinking about the steps of a process or activity that is easy to understand for everyone (Brian Pratama et al., 2022).

The Village Secretary, based on the Minister of Home Affairs Regulation (Permendagri), number 20 of 2018, concerning village financial management, is a Village apparatus that is domiciled as an element of the Village secretariat leadership which carries out duties as the coordinator of the Village Financial Management Implementation (PPKD). The Village Secretary has a role that regulates the overall technical management of village finances according to established regulations. Village financial management based on Permendagri, number 20 of 2018 concerning village financial management, consists of the stages of Planning, Implementation, Administration, Reporting, and Accountability (Novitasari et al., 2022).

The planning stage of village financial management is to prepare the Village Medium-Term Development Plan (RPJM Desa) until the Village Revenue and Expenditure Budget (APB Desa) is completed (Amalia & Sugiarsono, 2021). The implementation of village financial management is a series of activities to implement the Village Budget within one fiscal year, starting on January 1 and ending on December 31 (Zulaifah & Marwata, 2020). The administrative stage in village financial management is recording financial transactions in one fiscal year to produce factual information (Zulaifah & Marwata, 2020). Administrative activities include recording, journalizing, summarizing, collecting transaction evidence, and storing documents related to village finances by the village treasurer using the general cash book, tax assistant cash book, and bank book (Lestyowati, 2019). The reporting stage in village financial management is submitting reports on the implementation and realization of Village APB activities (Zulaifah & Marwata, 2020). The accountability stage for village financial management is the submission of a Village Budget realization report at the end of each year (Zulaifah & Marwata, 2020).

Village financial management in each stage has rules that must be understood and implemented according to the time limit set. The village government must have a financial
management organizational structure, job descriptions, flowcharts, and reference criteria for management activities in village financial management (Temenggung, 2016). Village financial management based on the Minister of Home Affairs Regulation Number 20 of 2018 concerning village financial management consists of the Planning, Implementation, Administration, Reporting, and Accountability stages which are carried out in a participatory, transparent, accountable, orderly and budgetary discipline (Novitasari et al., 2022; Sufi, 2022; Zholaikah, 2022). Minister of Home Affairs Regulation Number 20 of 2018 concerning Village financial management stipulates that village financial management can be carried out in a transparent, participatory, orderly manner, with budget discipline, and high-quality accountability (Zholaikah, 2022).

Electronic-based village financial management and using technology will increase village financial management accountability. The Siskeudes application is currently available for village financial management in Indonesia. Siskeudes is an application developed by the Ministry of Home Affairs and the Financial and Development Supervisory Agency (BPKP) to support the development of village government (Permana & Mudiyanti, 2021). The Village Secretary has an essential role in Village Financial Management, and problems will arise in Village Financial Management if the Village Secretary does not move Village financial management according to regulations (Walangitan et al., 2018). Previous research in Bondowoso Regency, East Java, involving 187 respondents, showed that organizational commitment and human resources significantly positively affected village financial management (Rulyanti et al., 2017). Village financial management in Wajak Lor Village faces obstacles related to Human Resources in the operation of the Village Financial System because the Village Financial System Application is an application that is still relatively new (Muharsono & Asyifah, 2021).

The results of previous research stated that regulations and Human Resources (HR) had an important influence on village financial management (Fitria & Wibisono, 2019). Law has a significant role in village financial management (Rulyanti et al., 2017). The Village Financial System or Siskeudes is an application created by the Minister of Home Affairs Regulation number 20 of 2018 concerning Village Financial Management (Muharsono & Asyifah, 2021).

Previous research shows that there are still obstacles that the Wajak Lor Village Government must face in implementing the Siskeudes application. Constraints from the Siskeudes application include version changes. When you want to make an entry for budget changes as outlined in the Village Head Regulation, you have to wait for the month of change. Still, you can't go back to see the previous budget after making the entry, and when you enter the end of reporting time, errors are often made from the central server because of the high usage by Siskeudes Operators (Muharsono & Asyifah, 2021).

Previous research conducted in Sukolilo Village, Pati Regency, showed that increasing internal control affected the increase in village financial management accountability (Amaliya & Maryono, 2020). Previous research in Limpung Subdistrict, Batang Regency, showed that organizational culture directly affects the performance of village officials (S et al., 2022). Previous research in West Pasaman Regency, West Sumatra, conducted direct observations,
and the results showed that internal control affected the timeliness of reporting the Village Budget (Rafsanjani & Cheisviyanny, 2021). Previous research in Sumorame Village, Candi District, and Sidoarjo Regency showed that the community still did not realize the importance of transparency for public welfare, and transparency by the Village Government only served to achieve specific formality goals based on implementing applicable regulations (Ardelia & Handayani, 2022). A previous study entitled "Exploring the roots of local government corruption practices in rural Java: An anthropological analysis" provides clues that deviations related to village financial management are caused by non-value factors such as the loyalty of the followers of the Village Head, vital harmony, and the ability of the Village Head to manifest himself as an ideal leader (Setiadi et al., 2022).

There has been no previous research to create and implement a Village Secretary Accounting Information System modeling based on Business Process Modeling Notation. The purpose of this study is to model the Village Secretary Accounting Information System based on Business Process Modeling Notation and implement the model to increase the role of the community and the Village Consultative Body in internal control of village financial management. This research hypothesizes that the Village Secretary’s Accounting Information System Modeling and Implementation can improve internal control in village financial management.

Research Method

This research is a type of applied research. This applied research aims to have practical benefits in increasing village financial management accountability (Soeherman, 2013). Applied research is research that extends the benefits of basic research (Nana & Elin, 2018). This study chose to use the policy research method. Policy research is a research method whose results are in the form of policy recommendations to be given to decision-makers to act practically in solving a problem (Nana & Elin, 2018).

This research was conducted in 2022 in Wajak Lor Village, Boyolangu District, Tulungagung Regency. The research subject is the Wajak Lor Village Government. The systematics of this research is as follows:

Figure 1. Systematic Research

Analysis of village financial management problems in this study uses Fishbone Diagram analysis. The advantage of Fishbone Diagrams for analyzing problems is that Fishbone Diagrams can be used as a basis for finding solutions and can help find facts about the problems being analyzed (Saputri et al., 2022). Fishbone diagrams are as familiar as causal diagrams (Pradesa et al., 2021). Fishbone Diagram has a function to show the factors that influence the occurrence of problems in the concept of cause and effect (Endrekson, 2021). Fishbone Diagram can serve to get an idea of the root of the problem (Malabay et al., 2022; Sutomo et al., 2022).
Result and Discussion

Village independence has a goal to realize prosperity for its people. The beginning of village independence was marked by Law Number 6 of 2014 concerning villages. The enactment of the village law leads every village in Indonesia to realize the welfare of rural communities based on the global development goals contained in the Village SDGs.

The problem of this research departs from Village SDGs information in 2020, which still shows the percentage of Independent Villages is less than 5 percent of the total 74,957 villages in Indonesia, while what must achieve the Village SDGs goals no later than 2030. Village SDGs are a global action agreed upon by world leaders to eliminate poverty, reduce inequality, and protect the environment (Linggarwati et al., 2021). The Village SDGs contain 17 Goals and 169 Targets to be achieved by 2030 (Linggarwati et al., 2021).

The decision of the Director General Decision of the Director General of Village and Rural Development number 398.4.1 of 2021 concerning the fourth amendment to the decision of the Director General of Village Community Development and Empowerment number 30 of 2016 concerning the status of village progress and independence shows the Number of IDM Village Status using IDM status in 2020 is as following:

<table>
<thead>
<tr>
<th>IDM VILLAGE STATUS</th>
<th>NUMBER OF VILLAGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent</td>
<td>3,269</td>
</tr>
<tr>
<td>Advance</td>
<td>15,321</td>
</tr>
<tr>
<td>Mature</td>
<td>38,083</td>
</tr>
<tr>
<td>Abandoned</td>
<td>12,635</td>
</tr>
<tr>
<td>Very Backward</td>
<td>5,649</td>
</tr>
<tr>
<td>TOTAL</td>
<td>74,957</td>
</tr>
</tbody>
</table>

*Source: Keputusan Direktur Jenderal Pembangunan Desa dan Perdesaan nomor 398.4.1 tahun 2021 tentang perubahan keempat atas keputusan Direktur Jenderal Pembangunan dan Pemberdayaan Masyarakat Desa nomor 30 tahun 2016 tentang status kemajuan dan kemandirian desa*

IDM is a tool developed by the Ministry of Villages, Development of Disadvantaged Regions, and Transmigration to achieve the national SDGs Village plans (Fitriana et al., 2022). There are many frauds in village financial management today, and the role of the community in supervising village financial management can prevent fraud in village financial management (Chusanudin & Ramadhan, 2022).

Information technology is a tool used to achieve practical goals by producing, processing, and disseminating information in any form (Putri Primawanti & Ali, 2022). Information technology is identical to one of the main factors that shape the development of society (Olimov & Mamurova, 2022). Infrastructure, human resources, policies, finance, and application content are included in the group of factors that can influence technology in achieving its goals (Zahwa & Syafi’i, 2022). Based on the research background to improve village financial management accountability by using Business Process Modeling Notation modeling and implementation to improve internal control, the systematics of the research results are as follows:

1. Problem Analysis (Fishbone Diagram)
The data for making fishbone diagram analyses in this study were obtained from previous research carried out in Wajak Lor Village. Previous research in Wajak Lor Village revealed that the Siskeudes application was not yet fully effective in ensuring accountability for village financial management (Muharsono & Asyifah, 2021). The Siskeudes application is an application that is still relatively new (Muharsono & Asyifah, 2021). This study also seeks to obtain information from direct interviews with the Wajak Lor Village Government. Based on the results of this research interview, what received information that the problems or constraints expressed in previous studies were still the same. Analysis of village financial management problems in this study is outlined in the Fishbone Diagram as follows:

![Fishbone Diagram](image)

Figure 2. Analysis of a Fishbone Diagram

This study raises the main problem regarding current village financial management, namely that village independence is currently not supported by a complete Electronic-Based Government System (SPBE), so clean, effective, transparent, and accountable village financial management is not guaranteed with certainty. The Electronic-Based Government System is an effort made by the government to ensure a clean, effective, and efficient government. This is stated in Presidential Regulation Number 95 of 2018 concerning Electronic-Based Government Systems.

The role of the Village Secretary in village financial management is currently not technology-based, so the Village Secretary uses verbal communication to coordinate village financial management. In the current research, there is no applied research that discusses the design of the Village Secretary Accounting Information System or the design of the Village Secretariat application, especially in the Village. Wajak Lor. Verbal communication is one way that the Village Secretary can coordinate village financial management so that independence between village officials is less guaranteed because they have strong mutual trust.

The Village Financial System Application (Siskeudes) is an application that is still relatively new, and there are still many obstacles to realizing clean, effective, transparent, and accountable village financial management. The Village Financial System Application (Siskeudes) is the only financial management application provided to village governments.
There is no integration in the Siskeudes application that connects information for the Siskeudes Operator with the Village Secretary or to other Village Government officials.

2. Implementation

The implementation of the Village Secretary Accounting Information System modeling is intended to improve the internal control of village financial management and provide stimulation to all parties to understand village financial management regulations, especially the regulation of the Minister of Home Affairs Number 20 of 2018 concerning village financial management.

The Village financial management internal control system involves layers of community elements as well as the Village Consultative Body (BPD) based on the principles of Village financial management and must be implemented in a transparent, accountable, participatory, and budgetary discipline. The quality of the financial reports produced depends on the implementation and principles of village financial management (Sagitariini et al., 2022). The internal control system must be in accordance with organizational conditions, which in this case is the condition of the Village Government because the internal control system can affect trust, and the internal control system cannot be separated from the Accounting Information System (Maruta et al., 2015).

A broad understanding of the internal control system includes all the tools management uses to supervise (Maruta et al., 2015). The design of a more effective internal control system can be done as an effort to suppress village financial management fraud (Rahayu et al., 2018). The community and the Village Consultative Body have a significant role in overseeing village financial management (Roza & S, 2017). Previous research conducted in the West Bandung district showed the results of study that the performance of village officials, internal control, and the use of information technology affected the accountability of fund management and the quality of financial reports (B. Hendaris & Romli, 2021).

Information has an important role in decision making (Soeherman, 2013). Information that has quality can be formed with a well-designed information system (Rusdi & Megawati, 2011). Information System is a combination of human resources (HR), facilities, technology, tools, procedures, and controls that aim to provide the main communication line results, process fixed routine transaction models, and provide signals for important internal and external events. external to management and others to make good decisions (Aqham et al., 2022). An accounting Information System is a system that collects, records, stores, and processes data to provide information results aimed at decision makers (Aqham et al., 2022).

Accounting Information Systems have a role in processing data presented to make appropriate decisions. A sound accounting information system not only acts as a corrective evaluation of past historical data but can also be a guide for predicting future steps (Soeherman, 2013). Previous research conducted in West Bandung Regency showed that the success of village financial management accountability was influenced by human resources (HR), the level of village financial system infrastructure, and internal control (R. B. Hendaris & Siraz, 2020).
Revolution 4.0 has an impact on increasing the use of technology in the public sector (Panduwinasar et al., 2021). Presidential Regulation Number 95 of 2018 concerning Electronic-Based Government Systems is the basis for using technology in government to realize public welfare (Khaidarmansyah & Saifuddin, 2022). There is no modeling of the Village Secretary Accounting Information System nor the Village Secretary application in Wajak Lor Village. This study makes the Village Secretary Accounting Information System Modeling based on the Business Process Modeling Notation based on the Minister of Home Affairs Regulation Number 20 of 2018 concerning village financial management, and documentation of the practical application of the Village Secretary Accounting Information System modeling based on the Business Process Modeling Notation in Wajak Lor Village on August 5, 2022, as follows:

Figure 3. Wajak Lor Village's implementation of BPMN-based Village Secretary Accounting Information System Modeling

The narrative to explain the implementation phase of the Village Secretary Accounting Information System modeling in order to improve village financial management accountability is as follows:

1. The Village Consultative Body (BPD) and the community can view the modeling of the Village Secretary's Accounting Information System based on the Business Process Modeling Notation on the Village Head's Office bulletin board.

2. The Village Consultative Body and the community together understand the stages of village financial management originating from the Minister of Home Affairs Regulation Number 20 of 2018 concerning village financial management.

3. The Village Consultative Body and the community carry out supervision by communicating verbally to the Village Secretary.

Conclusion

This research is a type of applied research. The result of this study is the implementation of the Village Secretary Accounting Information System modeling to improve the internal control of village financial management. This study chose Wajak Lor Village, Boyolangu.
District, Tulungagung Regency as the research subject. This study involved the Wajak Lor Village Government and the results showed that the Village Secretary Accounting Information System modeling could be implemented in Wajak Lor Village. Suggestions for further research are suggested to be able to develop a modeling of Village Financial Management Accounting Information System based on Business Process Modeling Notation.

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