

Implementation of The Digitalization of The Accounting Information System Based On Microsoft Access

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ABSTRACT

Technological developments in the current digital era have had a significant impact on business development. However, the adoption of digitalization in the agribusiness sector—particularly among cooperatives—remains limited. This study aims to develop a Microsoft Access-based Smart Farm Accounting System software focused on digital bookkeeping and record-keeping on KPT Maju Sejahtera. The Smart Farm Accounting System software can be applied to businesses in the livestock sector, taking into account the uniqueness of the agribusiness sector in accounting applications. This study is applied research through user interviews to tailor the system development to system needs. The method employed in this study is the qualitative method. Data collection was conducted through interviews and a literature review. Interviews were held with the cooperative's treasurer and finance staff, while the literature review was based on the cooperative's annual financial reports. The results of the system implementation prove that digitalization through Smart Farm Accounting improves efficiency and data accuracy.

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1. INTRODUCTION

Indonesia, as an agricultural country, has significant potential for development, particularly in the agricultural sector. One of the leading agricultural subsectors capable of driving economic growth is the livestock subsector [1]. Therefore, the livestock subsector is focused on improving production quality, increasing income, expanding new job opportunities, and providing opportunities for entrepreneurship, particularly for rural communities. Cattle farming, particularly beef cattle, has long been

a popular livestock business among rural communities. This is because beef cattle have a high economic value and are a popular source of food, especially meat. However, the business management of beef cattle farming in Indonesia remains traditional [2].

In the current era of globalization, the application of accounting information systems in financial institutions is growing rapidly, not only in banking but also in other financial institutions such as cooperatives. The accounting information systems used by cooperatives are simpler than those used by banks [3]. Every cooperative must have a

vision and mission aimed at improving the cooperative. To realize the vision and mission of each cooperative, a strategy is needed to support employee performance within each cooperative. However, after an interview with the cooperative chairman, it was found that KPT Maju Sejahtera has not yet implemented an accounting information system.

Therefore, a system is certainly essential to support a company's resilience. A system is a series of two or more interconnected components that interact to achieve a goal. One important function of an accounting information system is internal control. One of the objects of internal control is company performance and the performance of individuals within it [4].

Furthermore, internal control is crucial for cooperatives and MSMEs to implement. A lack of effective internal control systems within cooperatives will disrupt operational activities and the achievement of cooperative goals [5]. Meanwhile, achieving success in an organization requires a strong foundation encompassing human resource competencies, including leadership, managerial, and employee competencies, as well as organizational competencies that can build the organization in the long term against the external environment. Based on Law Number 17 of 2012, cooperative development should be directed at institutions and businesses so that cooperatives become healthy, strong, independent, resilient, and thriving. Cooperative development can be achieved by increasing cooperation and the economic capabilities of members, business potential, and increasing their role in the national and global economy [6].

One characteristic of modern business is digital transformation, combining software and hardware through digital information [7]. Efforts to advance the livestock sector toward a digital-based approach include smart farm accounting. Furthermore, agricultural digitalization is a potential key to contribute to the transformation of traditional agriculture into modern digital agriculture. Key factors in agricultural digitalization include telecommunications infrastructure, data

collection status, and data sharing, all of which are driven by the need for and availability of information [8]. The use of technology in financial management, particularly in the agribusiness sector, is still rare [9]. Therefore, this research develops Smart Farm Accounting System software that can be applied to livestock businesses, thus facilitating the digitization of livestock farming, making it easier for farmers to manage their business activities and monitor their business activities in real time, such as livestock age, sex, disease history, purchases, sales, and stocktaking.

2. LITERATURE REVIEW

2.1 Contingency Theory

Contingency theory argues that control design and systems are dependent on the organizational context in which they are implemented. Contingency theory in accounting, on the other hand, attempts to identify the most appropriate accounting-based control system for a given situation [10]. In principle, business actors will always strive to adapt their systems to be more useful under certain conditions. Therefore, efforts to identify the most important contingency variables and predict their effects on control system design are essential. Contingency theory argues that the design and use of control systems are contingent on the organizational context in which the controls operate [11]. Contingency theory, according to this theory, aims to form an idea of how context influences operations and contingent outcomes in organizational performance. It argues that for every contextual condition, there is a management control system response that will maximize performance in that situation [12].

The foundation of contingency theory is the idea that every organization has unique traits and challenges. The contingency approach to accounting systems is predicated on the idea that no accounting system is suitable for every company in every situation and that accounting systems also rely on

organizational situational considerations. The contingency approach can ascertain whether or not an accounting system's dependability will always have the same impact in all circumstances. According to contingency theory, in order for performance measurement systems and socialization processes to be utilized successfully in businesses, they must be generalized by taking organizational and situational elements like individual behavior (cooperation/interdependence). An attempt to choose the best control system in a particular circumstance is described by contingency theory in accounting systems [13]. In theory, practitioners of management accounting constantly strive to modify the system to make it more practical in every circumstance. Identifying the most significant contingency variables and evaluating their influence on control system design are examples of such endeavors.

The degree of fit between contextual circumstances (contingency) that will allow managers to enhance business performance is indicated by the application of the notion of fit in contingency theory. A company's management control system may have a number of contingency variables that fall into five categories [14]. The first group includes variables that are associated with uncertainty, such as task and environmental uncertainty. Contingency factors pertaining to the company's reliance on technology make up the second group. The company's industry and business unit factors, including size, diversity, and structure, make up the third category. Competitive strategy and mission are included in the fourth category. The monitoring factor is the last category that was examined in the control literature [15]. In order to give information that businesses may utilize for a variety of objectives and to contend with competition, the author of this paper employs contingency theory to assess the design and accounting system.

2.2 Technology Acceptance Model Theory

In order to explain how consumers can accept technology in information systems, Davis (1989) established the TAM theory [16]. TAM also describes the variables that may affect the information system's adoption of technology. TAM is a model for forecasting computer application adoption and the variables that are directly associated with it. The goal of TAM is to forecast and explain how consumers will react to the elements that affect an organization's adoption of technology. According to prior research, TAM explains the causal relationship between beliefs and actions, goals, needs, and users' actual use of information systems [7].

The TAM theory is a theory of behavioral information system model that aims to explain how technology users' interest in accepting and using the technology [17]. This model provides an empirically proven picture of the behavioral aspects of computer users, and many users respond to their desires so they can use the Internet without problems. In the TAM model, there are two main constructs: Perceived Ease of Use (perceived ease of use) and Perceived Usefulness [18]. There is also an Attitude Towards Using construct or attitude in using in the TAM model that can be used to predict interest, but this construct is still rarely used. Perceived ease of use is a state where someone believes that using the system/technology does not require any effort. Perceived usefulness is a state where someone believes that using the system/technology can provide benefits for its users.

2.3 Accounting Information System

Financial and non-financial transaction procedures that directly impact the financial transaction process make up the Accounting Information System (AIS) subsystem. A transaction processing system, a financial reporting system, and a management reporting system make up the AIS subsystem [19].

A collection of resources, including personnel and equipment, that are intended to convert financial and other data into information that will be shared with different decision-making parties is known as an accounting information system. According to prior research, an accounting information system is a system designed to gather, process, and report data pertaining to financial transactions [20].

Cost-effectiveness, proper documentation, suitable security measures, independent internal and external audits, separation of other operations from accounting, and efficient internal controls are the standards or indicators that any accounting information system should have in order to be effective in any organization. Incomplete and erroneous data can make a business less competitive. Decision-making can be adversely affected by subpar accounting information systems. One of an accounting information system's goals is to protect business assets [21]. These assets include cash, merchandise inventory, and fixed assets; to produce a variety of information for decision-making; to produce information for external parties; to produce information for performance evaluations of employees or divisions; to produce historical data for audit purposes; to produce information for the creation and assessment of business budgets; and to produce information required for planning and control activities [22]. An accounting information system consists of the following six components: Users of the system; Data about the organization and its business activities; Procedures and instructions used to collect, process, and store data; Software used to process data; Information technology infrastructure, including computers, peripheral devices, and communication network devices

used in the accounting information system; and Internal controls and security measures that store accounting information system data [3].

3. METHODS

3.1 *Research Design*

The type of research used is field research, which is research in which data and information are obtained directly from the research object. This research is applied research by developing Microsoft Access in KPT Maju Sejahtera. The object of this research is KPT Maju Sejahtera. KPT Maju Sejahtera is a cooperative that operates in the agribusiness sector through the breeding and sale of the largest cattle in South Lampung. The method used is qualitative, which is research that does not use numbers or statistical calculations, but provides descriptive results.

3.2 *Data Collection Techniques*

The type of research data used is primary data, meaning that the data source is obtained directly from the results of interviews with respondents based on the research problem. Respondents are subjects in the form of people who will be interviewed to provide information to the researcher. Data collection was conducted through interviews and a literature review. Interviews were held with the cooperative's treasurer and finance staff. Product development was based on interviews with cooperative treasurers and finance staff as system users. The interviews were conducted in a semi-structured manner to identify the features required for the system. Literature review was based on the cooperative's annual financial reports to align features with financial reporting requirements.

The stages of system creation can be seen in the following image.

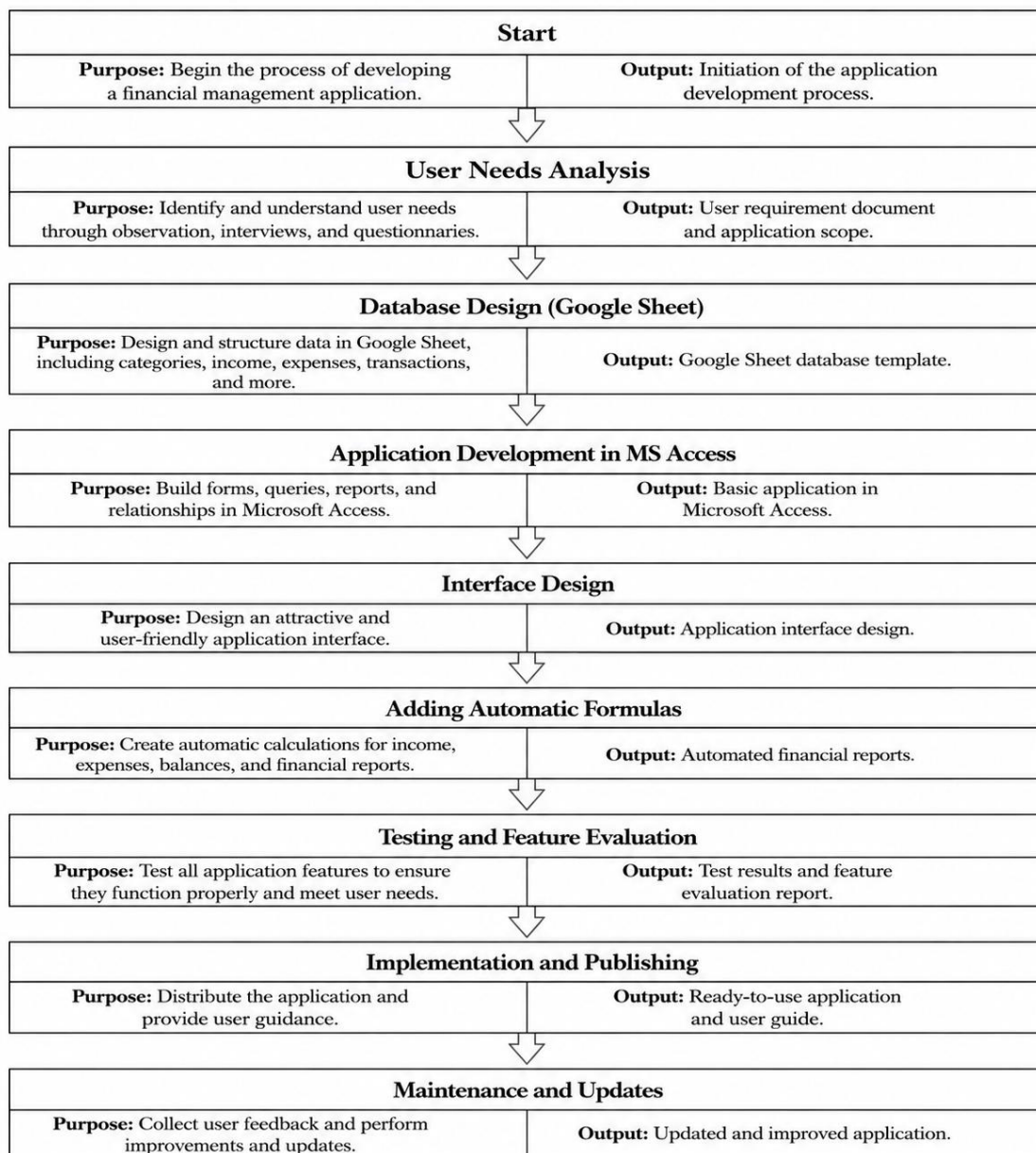


Figure 1. System Creation Stages

a. Planning and Needs Analysis

At this stage, information is gathered regarding user needs and the challenges faced in financial record-keeping, and an analysis is conducted of the features required by users, such as transaction recording, asset management, and the preparation of financial reports.

b. Structural Design and Engineering

Designing tables, data relationships, input forms, and queries to automate financial data processing. The design prioritizes

ease of use, data security, and the efficiency of information processing.

c. Testing

A testing phase was conducted after the Rent Sense application was developed to ensure that all functions operate correctly without system errors.

d. Implementation

Application development is carried out based on the established design, utilizing the form, query, and report features in Microsoft Access.

e. Program Launch

Once all stages are complete, System will be launched to users, accompanied by training on simple usage, backup procedures, and data maintenance to ensure optimal application performance.

f. Maintenance

Program improvements and refinements will be carried out if the user identifies any shortcomings in the Microsoft Access application during the trial period.

3.3 Data Analysis Techniques

The data analysis technique employs the theory of Miles and Huberman, involving three stages of qualitative analysis. The first activity is data reduction—a process of selection and focusing on the simplification, abstraction, and transformation of raw data derived from written field notes. Reducing data entails summarizing, selecting key elements, focusing on important aspects, and identifying themes and patterns. The second stage is data presentation, an activity in which information is organized to facilitate drawing conclusions and taking action. The subsequent step in the qualitative data analysis process is drawing conclusions based on the findings to be developed.

4. RESULTS AND DISCUSSION

The design of the financial and inventory reporting system in this study aims to improve the efficiency, effectiveness, and accuracy of financial reporting management and support better business decision-making. The design phase begins with identifying key needs related to transaction recording, monitoring biological asset inventory, and preparing financial reports, which were previously not structured. Based on observations and interviews, KPT Maju Sejahtera experienced difficulties in manual recording and time constraints in preparing financial reports, and no stocktaking of

biological asset availability was conducted. This indicates the need for KPT Maju Sejahtera to adopt a more systematic, efficient, and reliable financial recording system that is capable of automating the financial recording and reporting process more effectively, which directly supports the direction of system development.

The research team conducted the system design process over two months. The design process adapted the features required by KPT Maju Sejahtera. This approach is expected to deliver superior quality and greater effectiveness, as it has been directly adapted to the challenges faced by business owners. The system is designed with an integrated approach, allowing users to simply enter transaction data through a single feature: transaction input. This journal records all financial activities, such as sales, purchases, and operational expenses. The entered data is then automatically linked and processed into various financial reports without requiring repeated data input. This design aligns with the observation method employed, which identified the need for a more efficient and user-friendly transaction recording tool for the KPT Maju Sejahtera.

The system's interface is designed in a simple format, equipped with navigation between interconnected categories and the use of automatic formulas to simplify data processing. Informative filling instructions make the application easy to operate, even for users without a background in accounting or advanced technological skills. The system is designed so that treasurers can focus solely on recording daily journal entries without the need to manually compile reports. All required financial reports are automatically generated and updated by the system. In addition to the financial reporting system, researchers also designed an inventory system. This is because inventory in the agricultural sector has special characteristics, where the value of biological asset inventory can increase over time due to accretion (growth, childbirth). This certainly requires special features tailored to the characteristics

of biological asset inventory at KPT Maju Sejahtera.

Figure 2. MS Access Based Smart Farm Accounting Display

4.1 Post-Implementation Evaluation

The evaluation was conducted to assess the success of the implementation in supporting financial reporting management. This evaluation compared conditions before and after system implementation, focusing on three main aspects: efficiency, accuracy, and user-friendliness. Evaluation results were obtained through direct observation and user interviews. The evaluation results following the system's implementation focus on transaction recording efficiency, data accuracy, and user convenience.

a. Efficiency of Transaction Recording

Prior to the system's implementation, the recording and bookkeeping process was still performed manually, which took longer and increased the risk of errors. After the system's implementation, financial recording can be automated, making it more efficient and speeding up the financial reporting process. Users simply enter data once, and the system automatically groups and organizes transactions into relevant reports. This is supported by

previous research that suggests the use of information technology can improve work efficiency [23]. In addition, by implementing a system designed in accordance with accretion accounting, the account names are adjusted to the accretion accounting concept, such as biological assets, unrealized income, inventory of consumables, etc.

b. Data Accuracy

Before the system was implemented, errors often occurred because some unrecorded transactions were not recorded, reducing data accuracy. After the system's implementation, financial recording can be conducted more systematically, improving the accuracy of data in financial reports. This is because the system is equipped with data validation and automatically rejects input that is not formatted correctly or incomplete [24]. In addition, by implementing a system designed in accordance with accretion accounting, in the inventory feature, the value of inventory (biological assets) will automatically

increase every year adjusted to the estimated market price.

c. User Convenience

Before the system was implemented, treasurers struggled to manage financial reports due to the need to understand accounting fundamentals. After the system was implemented, financial record-keeping became simpler, easier to use, and helped treasurers prepare reports consistently and practically. The system's user-friendly and structured interface makes it easy for users without IT or accounting backgrounds to operate the system. This aligns with the TAM theory, which states that user-friendliness can increase system utilization [25].

5. CONCLUSION

This research successfully produced the design and implementation of a financial reporting system tailored to the needs of KPT Maju Sejahtera. This system includes key features such as a general journal, general ledger, income statement, balance sheet, cash flow statement, and statement of changes in

equity, all of which are automatically integrated and easy to use. The results of the system implementation indicate that the use of Microsoft Access can improve the efficiency of the recording process, the effectiveness of report preparation, and the accuracy of financial data. This research provides practical experience in designing and implementing a financial reporting management system. The system development in this study is limited to the basic features of financial statements. Further research could develop existing features to create a more complex system. Further research could utilize other technologies, such as cloud-based technology or mobile applications. Furthermore, the research could be expanded by comparing the effectiveness of various digital financial recording platforms in different business sectors.

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