

## Application of Fishbone Diagrams in Developing Budget Implementation and Reporting Systems in the Accounting Department, State Polytechnic of Malang

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### ABSTRACT

This research aims to identify the root of the problems in the accounting information system for budget implementation and reporting at the Accounting Department, State Polytechnic of Malang. This research uses a qualitative method with a Root Cause Analysis approach. Problems that occur in companies are analyzed using a fishbone diagram. The method of collecting data in this research is in-depth interviews. The results of this research explain that some problems occur in the company as budget implementation and reporting procedures are still being done manually. This research provides a solution for the Accounting Department to create a website that can be used to process budget implementation and reporting in real time, which can increase the effectiveness and efficiency of business processes.

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## **INTRODUCTION**

Technological developments and advances require all government and private companies to produce information quickly, precisely, and accurately. One of the most essential information for a company is finance. A company needs an accounting information system to create excellent financial information when managing finances. One financial aspect that must be managed well is the budget. In government, the budget is a guideline for actions that the government will implement, including plans for income, expenditure, transfers, and financing measured in rupiah units, which are arranged according to certain classifications systematically over a period (Anggraina, 2016).

State Polytechnic of Malang is one of Indonesia's public sectors or Public Service Agency (BLU) that operates in the education sector. The State Polytechnic of Malang uses the public sector budget to carry out its activities. According to Mardiasmo (2021), the public sector budget is financial planning regarding estimates of expenditure and revenues expected to occur in the future by looking at data obtained from the past as a reference for budget determination. The budget that has been implemented must be accounted for by applicable regulations.

The Accounting Department is one of the work units at Malang State Polytechnic. Overall, the budget at the Malang State Polytechnic is managed using the SIMKEU application. However, in managing finances related to budgets, the Malang State Polytechnic Accounting Department still uses a manual system that needs to be integrated. This causes various problems. This problem must be found at the root of the problem so that it can be dealt with immediately. What can be done is to analyze the root of the problem. Root problem analysis can be done in various ways, one of which is by using a fishbone diagram.

Previous research that applied fishbone diagram analysis explained the root of the problems based on the selected events/topics. Sakdiyah, Eltivia, and Afandi (2022) explain the root of the problem of hampered management decision-making based on four factors: Man, Machine, Material, and Measurement. This research helps management find solutions to problems that occur to fulfill expectations and minimize obstacles to decision-making. Ardha, Riwijanti, and Haris (2023) explain six key factors that cause poor internal audit planning at J Corp: policies, processes, people, factories, programs, and products. Suarta and Handriani (2020) explained that several companies need help managing employee data collection, attendance, and payroll. This research provides a solution for creating a Human Capital system to overcome these problems.

This research uses the Root Cause Analysis (RCA) approach to analyze the root of the problem. This research maps the problems in companies' budget implementation and reporting process. RCA is used to identify the "root cause" of a problem or event and carry out a design process to respond to it (Khoeriyah, 2024). In this research, the tool used for RCA is the Fishbone Diagram, which describes the categorization of the causes of a problem and determines the root cause of the problem. Previous research has yet to use a root cause approach in

analyzing problems related to budget accounting information systems so that the problems that occur are not explained in detail.

## **LITERATURE REVIEW**

### ***Public Sector Budgets***

In Government, the budget is a guideline for actions that the Government will implement plans for income, expenditure, transfers, and financing measured in rupiah units, which are arranged according to certain classifications systematically over a period (Anggraina, 2016). A budget is a tool for the Government's national economic development, ensures sustainability, and improves the community's quality of life. The legal basis for State Finance itself is regulated in Chapter VIII of the 1945 Constitution as a result of amendments regarding Financial Matters, Article 23, which reads the state revenue and expenditure budget as a form of state financial management is determined every year by law and implemented openly and responsibly to the extent of -great prosperity of the people (Handayani, 2019). The public sector budget has several primary functions, namely: (1) as a planning tool, (2) control tool, (3) fiscal policy tool, (4) political tool, (5) coordination and communication tool, (6) performance assessment tool, and (7) motivation tools (Khusaini, 2019).

Public sector budgets are regulated based on public sector accounting. The public sector accounting recording method carried out regarding the budget is budget accounting. Budget accounting is a collection of accounting data on the distribution of a budget and the interpretation of income in the context of implementing the APBN and the APBD. The main objective of budget accounting is monitoring a budget. Budget accounting provides valuable information for monitoring and reviewing the budget so that later, it can be seen in terms of the implementation of budget absorption, economics, efficiency, and effectiveness of the budget, as well as the financial condition of the budget owned by the Government.

### ***Budget Implementation and Reporting***

Budgeting issues cannot be separated from efficient budget absorption and achieving activity or program goals with budget support. So, budgeting practices must pay attention to a flexible budgeting pattern that accommodates the needs of performance and performance implementers (Biswan & Grafitanti, 2021). The quality of budget implementation in the public sector is achieved to achieve its service goals to the public (Handayani, 2019). Budget implementation is an effort to realize the budget planning that has been made, including problems that occur within the work unit internally, such as delays in determining financial management personnel's decision letters, the absence of rewards and punishments, and the habit of postponing work (Ferdinan et al., 2023).

The Ministry of Finance of the Republic of Indonesia stated that the Public Service Agency (BLU) must submit accountability reports as a government agency. BLU prepares and presents financial and performance reports as a form of accountability and transparency in financial management and service activities. The pattern of accountability in the public sector is vertical and horizontal. Vertical accountability is accountability for managing funds to a

higher authority, for example, regional government accountability to regional governments above it or to the central government. Horizontal accountability is accountability to the broader community. These two types of public sector accountability are essential elements of the public accountability process (Mardiasmo, 2021). Public sector accountability is a concrete effort to realize accountability and transparency within public sector organizations. Accountability is carried out by the community, constituents, and administrators at NGOs or foundations (Handayani, 2019).

### ***Root Cause Analysis***

According to Widhianingsih and Wahyuni (2024), Root Cause Analysis (RCA) is a tool for identifying and analyzing failures in a system and providing solutions to these failures. Langga, Sabri, Hamsi, and Abda (2019) also define RCA as a process in problem-solving that identifies problems, whether concerns or non-conformities, that have been found. RCA steps that can be taken include identifying incident risks, finding the root causes of incident risks by asking "why," and providing solutions to improve the incident risk (Rizki & Saputra, 2022).

Ishikawa, more commonly known as the fishbone diagram, is used for actions and steps to correct a problem whose root cause is known. The advantage of this fishbone diagram is that it is easy to read because it efficiently presents cause and effect (Hisprastin & Musfiroh, 2020). According to Murnawan (2014), some of the benefits of the fishbone diagram are as follows:

- a. Helps determine the root cause of the problem.
- b. Helps generate ideas to solve problems.
- c. Assist in further research or fact discovery.
- d. Define actions that determine how to create the desired outcome.
- e. Discuss the subject matter entirely and neatly.

The following are steps for solving problems using a fishbone diagram:

- a. Determine the problem that will be interpreted as a result.
- b. Determine the main categories of causes. In the manufacturing industry, there are 5M, namely man, methods, machine, materials, milieu/environment.

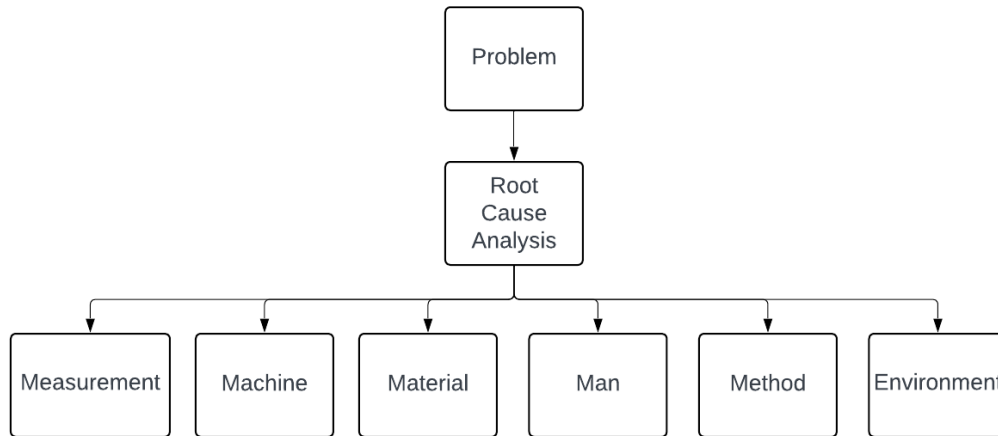


Figure 1. Conceptual Framework

## METHODOLOGY

This research uses a qualitative method with a Root Cause Analysis approach. Root Cause Analysis is usually a qualitative research analysis method that relies on arguments and the meaning of the phenomenon being studied to build empirical, logical, and ethical constructions based on the arguments and meaning of the phenomenon. This is done by using descriptions to form a comprehensive understanding. The tool used for RCA in this research is a fishbone diagram. Fishbone analysis is a structured approach that allows for a more detailed analysis to be carried out to identify the sources of existing problems, discrepancies, and gaps (Hamidy, 2016). The stages of this research, which were developed from research by Hamidy (2016) and Widnyana (2022), are: 1) Data collection; 2) Describe a graph of causal factors; 3) Identify the root of the problem; 4) Recommendations and implementation. The data collection method for this research is direct interviews with the financial admin and Person in Charge (PIC) of the Accounting Department, State Polytechnic of Malang, regarding the problems that occurred. The primary data used was obtained from interviews conducted.

## RESEARCH RESULT

Based on the results of the interviews, the author identified the root of the problem in the accounting information system for budget implementation and reporting using a fishbone diagram of the Method, Machine, Man, Material, Environment, and Measurement factors. The following is a fishbone diagram of this problem.

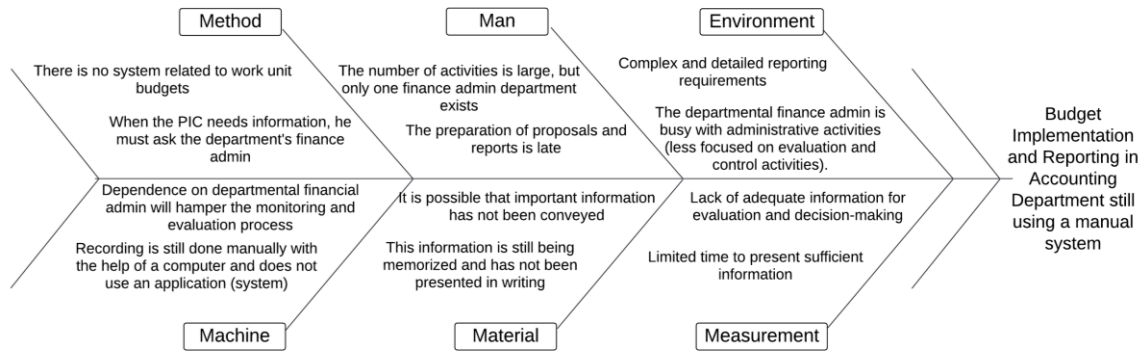


Figure 2. Fishbone Diagram

Based on the previous Fishbone Diagram, here is table 1 about identifying problems in the budget implementation and reporting systems at Accounting Department, State Polytechnic of Malang.

Table 1. Identification Root Cause

Classification	Prolem that Occur	Cause
Method	There is no system related to work unit budgets	When the PIC needs information, he must ask the department's finance admin
Machine	Recording is still done manually with the help of a computer and does not use an application (system)	Dependence on departmental financial admin will hamper the monitoring and evaluation process
Material	This information is still being memorized and has not been presented in writing	It is possible that important information has not been conveyed
Man	The number of activities is large, but only one finance admin department exists	The preparation of proposals and reports is late
	Not all PICs know how to implement and report the budget according to the provisions	The monitoring and evaluation process cannot run well
Environment	Complex and detailed reporting requirements	The departmental finance admin is busy with administrative activities (less focused on evaluation and control activities).
Measurement	Limited time to present sufficient information	Lack of adequate information for evaluation and decision-making

## DISCUSSION

The first problem relates to the methods used in the budget implementation and reporting process. The budget-related system for the head office is carried out using an application called SIMKEU. However, this system still needs to provide features related to the budget system for work units. The system related to work unit budgets is currently not available. In the budget implementation and reporting process, the department's finance admin assists the PIC. When the PIC needs information, they must ask the department's finance admin.

The second problem is machines related to the tools used to manage and present data. Recording is still done manually with computer assistance, not using an application. The recorded data still needs to be integrated. The department's finance admin can only read information related to this data. This causes the PIC to depend on the department's finance admin to process data related to the budget and is related to the previous problem in which the PIC had to ask the department's finance admin to get the desired information. Of course, this hampers the process of monitoring and evaluating an activity.

The third problem is the material related to the processed and produced data. The budget-related information still needs to be memorized and has yet to be presented in writing. Regarding machine-related problems, an application's absence means that information must be appropriately presented. This causes the possibility that important information needs to be conveyed.

There are two problems in Man's classification, namely in terms of departmental finance admin and PIC. The first problem is the large number of activities, but the number of finance admin majors is only 1. The Accounting Department has approximately 60 activities that must be carried out over ten months. So, every month, accounting majors must carry out six activities. Each activity certainly has its timeline. When one activity runs (in the implementation process), other activities may be in the proposal or report preparation stage. This results in the preparation of proposals or reports needing to be prepared on time.

The second Man classification problem is that not all PICs know how to implement and report the budget according to the provisions. In the budget implementation and reporting process, some stages must be carried out, such as the proposal submission stage, which is still layered. When submitting a proposal, the department's finance admin enters the required information in SIMKEU, which still has to be reviewed by the center. If the requirements are met, the proposal can be printed and then bureaucratized to the Chief Executive, Head of Department, Deputy Director 1, and PPK Sector 1. Then, the proposal will go to the Financial Working Group and be submitted to the Expenditure Treasurer for budget disbursement. This is still 1 of several stages that must be done. In connection with previous problems, this causes the monitoring and evaluation process not to run well.

The next problem is complex and detailed reporting requirements. Each activity has different expenses. Each expenditure made requires its requirements. For example, holding training that is conducted offline requires duplicating proposals, duplicating reports, duplicating participant materials, participant snacks, and resource honorariums. It would help to have an invoice and delivery note for all types of duplication, such as proposals, reports, and materials. If there are expenses for participant snacks, the work unit must attach an invoice, delivery note, attendance, and invitation. Likewise, expenses for resource honorariums are required to fulfill the specified requirements. This causes the department's finance admin preoccupied with administration-related matters, resulting in less focus on controlling and evaluating activities.

The problems discussed previously are also related to problems related to measurement, which means there is limited time to present sufficient

information. The absence of an integrated system, a disproportionate amount of finance and admin department activity, and complex and detailed reporting requirements result in insufficient time to present information. This needs to be sufficient information for evaluation and decision-making.

Time limitations also cause a lack of time to prepare for activities, such as activities requiring resource persons. When an activity requires a resource person, it is necessary to adjust the schedule between the time of carrying out the activity and the availability of the resource person. This, of course, requires time to prepare approximately three months in advance. Apart from that, offline activities require a place according to the number of participants. Preparations need to be made so as not to disrupt student learning. Likewise, participants must take part in activities. Activity participants need to be adjusted. If the participants in an activity are lecturers, they must choose a time when there is no teaching schedule. If the participant is a student, they must select a time when they are not studying.

Analysis of this problem shows that the accounting department must have an application (website) that can be used to process implementation and reporting in real time. This can be done by designing a website to make it easier for work units to manage, present, and archive data or documents. The department's financial admin only needs to enter information through this integrated system so that the information can be presented well and quickly. This website can be a forum for the PIC to monitor and evaluate each activity so that decisions can be taken immediately whenever a problem occurs. In this way, the efficiency and effectiveness of activities can be optimized.

## **CONCLUSIONS AND RECOMMENDATIONS**

From the research results, the problem is that the budget implementation and reporting system at the Accounting Department, State Polytechnic of Malang, is still done manually. The classification of factors that are the root of the problem is 5M+1E, namely Method, Machine, Man, Material, Measurement, and Environment. The problems are interconnected and cause the monitoring and evaluating activities not to be carried out optimally. This influences decision-making and can disrupt the smooth running of activities.

Based on the research results, the Accounting Department should have a website that can be used to process data related to work unit budgets in real-time. A system that can provide the information needed by the PIC. This system can assist PIC in monitoring and evaluating activities and budgets. With this system, efficiency and effectiveness of activities can be achieved.

## **ADVANCED RESEARCH**

This research only discusses problems in 1 work unit out of all work units in the agency. It is hoped that future research can discuss budget-related problems in other work units. In addition, it is hoped that future research will continue to identify this problem by concluding this research, namely designing a budget implementation and reporting system. This design will help agencies deal directly with the problems they face.

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