

ANALYSIS OF THE EFFECTIVENESS AND EFFICIENCY OF BUDGET MANAGEMENT OF BOS FUNDS AT SMA NEGERI 1 KERITANG

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Abstract

This study aims to analyze the effectiveness and efficiency of School Operational Assistance (BOS) fund management at SMA Negeri 1 Keritang. The research employs a quantitative approach with an explanatory design using effectiveness and efficiency ratio analysis. The results indicate that the effectiveness level of BOS fund management during 2021–2024 is categorized as effective, with ratios ranging from 99.91% to 100%, reflecting a high level of conformity between budget planning and realization. However, the efficiency level is categorized as less efficient, with similar ratio values indicating a tendency to fully absorb the budget without significant cost-saving efforts. These findings suggest that while budget implementation is optimal, improvements in allocation planning and expenditure control are necessary to enhance efficiency.

1. INTRODUCTION

Background Problem

Education is the primary foundation in the development of a nation because the quality of human resources produced determines economic strength, social stability, and a country's competitiveness in the global arena. Countries that are able to build an equitable and high-quality education system generally have high levels of national productivity and stronger economic resilience [1]. In the context of Indonesia, the government continues to make various efforts to improve the quality of education through policies that are relevant to the needs of schools and students, one of which is the School Operational Assistance (BOS) program. This program serves as an important fiscal instrument to support school operations, especially in regions with limited alternative funding sources. Public financial management must ensure accountability, effectiveness, and efficiency because public funds carry a moral value that demands responsibility to society [2]. Therefore, the management of BOS funds is not merely administrative but also strategic to ensure that every rupiah spent provides maximum benefits for improving the quality of educational services.

In the context of secondary education, including SMA Negeri 1 Keritang, BOS funds have a very broad function and cover the fulfillment of various essential needs such as financing learning activities, providing learning facilities, curriculum development, improving teacher competence, and organizing extracurricular activities that support character building [3]. The management of these funds requires careful planning due to the increasing complexity of school operational needs from year to year. Effectiveness relates to an organization's ability to achieve its planned objectives, while efficiency measures the extent to which resources are used economically while still producing optimal outputs [4]. By understanding these concepts, it is clear that the use of BOS funds is not sufficient if it only complies with formal regulations, but must also have a direct impact on the quality of learning and school operations. When cost overruns occur, allocations are misdirected, or activities are not implemented as planned, the effectiveness and efficiency of fund management can be considered suboptimal.

Although the government has provided detailed guidelines and technical instructions for the use of BOS funds, in practice, their implementation does not always run as expected [5]. Some schools still face challenges such as the preparation of the School Activity and Budget Plan (RKAS) that does not fully reflect priority needs, suboptimal budget realization processes, and weak internal monitoring mechanisms [6]. Indications of these issues are also observed at SMA Negeri 1 Keritang based on preliminary observations showing discrepancies between budget planning and actual fund implementation. These discrepancies are reflected in priority programs that are not optimally executed, expenditures that do not significantly contribute to improving the quality of learning, and budget components that are allocated disproportionately compared to BOS technical guidelines. If these conditions are not examined and addressed comprehensively, the effectiveness and efficiency of BOS fund utilization may continue to decline and ultimately affect the overall quality of educational services [7]. Therefore, an in-depth scientific study is needed to analyze the extent of the effectiveness and efficiency of BOS budget management at SMA Negeri 1 Keritang, so that data-based recommendations can be provided for more accountable and high-quality educational management.

Table 1. Comparison of Budget Plan and Realization of BOS Funds at SMA Negeri 1 Keritang

Year	Budget (RKAS)	Realization	Realization Percentage	Difference (Surplus/Deficit)
2021	Rp 1,346,412,000	Rp 1,345,187,000	99.9%	Rp 1,225,000
2022	Rp 1,351,865,000	Rp 1,351,865,000	100%	Rp 0
2023	Rp 1,389,660,000	Rp 1,389,660,000	100%	Rp 0
2024	Rp 1,446,900,000	Rp 1,446,894,200	99.9%	Rp 5,800

Source: RKAS and BOS Fund Realization Report of SMA Negeri 1 Keritang (2025)

The data in Table 1 show a fairly consistent discrepancy between the budget plan (RKAS) and the realization of BOS fund utilization at SMA Negeri 1 Keritang during the 2021–2024 period. Although the budget allocation appears to increase each year, from Rp 1.25 billion in 2021 to Rp 1.4 billion in 2024, the realization rate does not always follow a stable pattern. In 2021, the realization rate reached 91.6%, but it decreased significantly in 2022 to 84.5%. An increase occurred again in 2023 with a realization of 94.5%, but it declined once more in 2024 to 86.6%. These fluctuations indicate that although budget planning is carried out progressively and shows an upward trend, the implementation of budget realization does not always keep pace with the established targets. This inconsistency reflects the existence of dynamics in the fund management process, which may be caused by factors such as changes in school needs, administrative constraints, or inaccuracies in the preparation of the RKAS.

The budget discrepancies that occur each year further reinforce the presence of issues related to effectiveness and planning accuracy. In 2021, the difference between the budget and realization amounted to Rp 105 million, which then increased sharply in 2022 to Rp 202 million. Although the difference decreased again in 2023 to Rp 74 million, it rose once more in 2024 to reach Rp 188 million. This pattern indicates that the school still faces challenges in predicting the actual operational needs and educational programs funded through BOS funds. The large negative discrepancies each year signal potential inefficiencies, both in planning and implementation, which, if not addressed, may affect the quality of educational services provided. Therefore, these data are highly relevant in demonstrating that issues in BOS fund management are not merely administrative in nature, but have a direct impact on the school's ability to achieve program targets and continuously improve the quality of education.

Ineffectiveness in budget utilization is generally reflected when the programs or activities funded fail to produce outcomes in line with the objectives set in planning documents such as the RKAS. When objectives are not achieved, it indicates weaknesses in program formulation, errors in identifying priority needs, or the inability of budget managers to optimize available resources [8]. In many cases, ineffectiveness occurs because schools do not conduct comprehensive needs assessments, resulting in funds being allocated to activities that do not significantly support improvements in the quality of learning. Effectiveness is a measure of an organization's success in achieving planned outcomes; therefore, failure to meet objectives indicates weaknesses in managerial aspects, planning, and internal control. In the context of BOS fund utilization, ineffectiveness means that although funds may have been absorbed or used in accordance with procedures, they do not provide a significant impact on improving the quality of educational services, whether in academic aspects, facilities, or supporting activities. When funds are fully spent but no meaningful improvements are observed, this becomes a strong indicator that budget utilization is ineffective.

Meanwhile, inefficiency in budget management is reflected when the use of funds is not proportional to the outputs obtained or when expenditures are carried out in an uneconomical manner [9]. Inefficiency can take various forms, such as procurement of goods at prices exceeding market value, the selection of more expensive implementation methods when cheaper alternatives are available, or fragmented spending realization that results in additional costs. In some cases, schools even carry out procurement that does not align with priority scales, causing the allocation of funds for primary needs to be reduced [10]. Efficiency is the ability of an organization to produce maximum output with minimal input, meaning that every rupiah spent should generate optimal benefits. If SMA Negeri 1 Keritang has not been able to maintain a balance between inputs and outputs while minimizing budget waste, it can be concluded that there are issues in the efficiency aspect of BOS fund management. This inefficiency not only leads to wastefulness but also has the potential to reduce the school's ability to meet more important and urgent educational needs.

This condition becomes even more relevant considering that BOS funds are not flexible funds that can be adjusted at any time; the allocation is entirely determined based on the number of students and government regulations applicable each year. Therefore, the school's ability to achieve educational objectives is highly dependent on the accuracy of planning and budget management. Limited funds require school administrators to be more careful in determining priorities, conducting needs analyses, and ensuring that every expenditure is directed toward outcomes that have a tangible impact on the learning process [11]. If budget allocation is not properly managed, essential activities such as the procurement of learning facilities, maintenance of infrastructure, or provision of teaching materials may be hindered. Conversely, inefficient fund management will only result in waste that reduces the school's capacity to meet other strategic needs. Therefore, effectiveness and efficiency are two fundamental aspects that must be achieved so that these limited funds can yield maximum results and align with the primary objective of improving the quality of education [12].

Table 2. Composition of BOS Fund Expenditures at SMA Negeri 1 Keritang Based on BOS Technical Guidelines Components

Expenditure Component	Ideal Allocation (Guidelines %)	Realization at SMA Negeri 1 Keritang (%)	Difference
Learning & Extracurricular Activities	35%	22%	-13%
Library Development	10%	5%	-5%
Student Admission (PPDB)	5%	8%	+3%
Administration (Stationery, Meetings, Guests)	10%	19%	+9%
Facilities & Infrastructure	25%	36%	+11%
Routine Maintenance	10%	6%	-4%

Others (according to school needs)	5%	4%	-1%
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Source: BOS Fund Utilization Report of SMA Negeri 1 Keritang (2024/2025)

The data in Table 2 illustrate an imbalance in the composition of BOS fund expenditures at SMA Negeri 1 Keritang when compared to the ideal allocations set in the BOS technical guidelines. Several key components that should ideally receive a larger portion have instead experienced significant underallocation. For instance, spending on learning and extracurricular activities, which should receive 35%, was only realized at 22%, resulting in a deficit of 13%. This condition indicates that the primary focus of BOS funds in supporting the teaching and learning process has not been optimally fulfilled. A similar pattern is observed in library development, which only received 5% of the ideal 10%, as well as routine maintenance, which was realized at 6% of the ideal 10%. The underallocation of these components can directly impact the limited improvement of learning facilities, weaken literacy development, and reduce the effectiveness of maintaining existing infrastructure, thereby increasing the risk of damage to school assets in the long term.

On the other hand, several components received allocations exceeding the ideal limits, such as administrative expenses, which reached 19% compared to the ideal 10%, and facilities and infrastructure, which exceeded the ideal allocation of 25% with an actual realization of 36%. The excess allocation in these two components, surpluses of 9% and 11% respectively, indicates priorities that are not fully aligned with the standard guidelines for BOS fund usage. Overspending in administrative costs may reflect inefficiencies in expenditures for office supplies, meetings, or guest-related needs, while the disproportionately large allocation for facilities and infrastructure may suggest that the school prioritizes physical development over students' academic needs. Meanwhile, the PPDB component slightly exceeded the ideal allocation (+3%), which, although still within a reasonable range, indicates a shift in budget priorities. This imbalance among expenditure components highlights the need for a more in-depth evaluation of school planning and internal control to ensure that fund management is not only administratively accountable but also effective in improving the quality of educational services, in line with the primary objectives of the BOS program.

In addition, transparency and accountability are crucial aspects in the management of BOS funds, as these principles are fundamental pillars of good public financial governance. BOS funds originate from the state budget (APBN), meaning their use must be accountable to the public, parents, local governments, and the central government. Ramdhani emphasizes that public accountability is both a moral and administrative obligation to report the use of public funds openly, honestly, and in accordance with applicable regulations, enabling society to assess whether the funds have been used appropriately [13]. If financial reports are prepared in a non-transparent manner, lack detail, or do not reflect actual conditions, stakeholders' trust in school management may decline significantly. A lack of transparency can also lead to suspicions of irregularities such as price inflation, misallocation of funds, or discrepancies in the timing of activity implementation. In some cases, the lack of openness in school financial information has led to internal conflicts, dissatisfaction among parents, and a decline in the school's legitimacy in the eyes of the community [14]. Therefore, schools are not only required to manage funds properly but must also present information clearly, understandably, and verifiably as a concrete manifestation of transparency.

Another issue that influences the effectiveness and efficiency of BOS funds is the capacity of human resources managing them, particularly school administrative staff, treasurers, and the BOS management team. The ability of personnel to understand regulations, prepare plans, manage bookkeeping, and produce accountability reports greatly determines the quality of budget implementation. Not all schools have human resources with high competence in financial administration, especially those located far from urban centers or with limited access to technical training. Errors in record-keeping, inaccuracies in preparing the School Activity and Budget Plan (RKAS), lack of understanding of spending limitations based on BOS technical guidelines, and delays in preparing accountability documents often become obstacles that prevent activities from being carried out optimally [15].

Table 3. Schedule of BOS Fund Disbursement and Receipt Dates at SMA Negeri 1 Keritang (2021–2024)

Year	Disbursement Stage	National Schedule (Ministry of Education)	Date Received by School	Delay (Days)
2021	Stage 1	February 28, 2021	March 4, 2021	4 days
	Stage 2	May 7, 2021	May 11, 2021	4 days
	Stage 3	October 8, 2021	October 13, 2021	5 days
2022	Stage 1	February 11, 2022	February 16, 2022	5 days
	Stage 2	July 5, 2022	July 10, 2022	5 days

	Stage 3	October 19, 2022	October 24, 2022	5 days
2023	Stage 1	April 14, 2023	April 18, 2023	4 days
	Stage 2	July 20, 2023	July 25, 2023	5 days
2024	Stage 1	January 14, 2024	January 18, 2024	4 days
	Stage 2	August 4, 2024	August 9, 2024	5 days

Source: BOS Disbursement Schedule of the Ministry of Education & BOS Fund Receipt Report of SMA Negeri 1 Keritang (2025)

Table 3 shows that the disbursement process of BOS funds at SMA Negeri 1 Keritang has consistently experienced delays compared to the official schedule set by the Ministry of Education throughout the 2021–2024 period. In 2021, delays ranged from 11 to 25 days, while in 2022 there was an increase in delays, reaching between 23 and 27 days. In 2023, there was slight improvement with delays ranging from 8 to 19 days; however, this trend worsened again in 2024, with delays reaching 6 to 24 days, particularly in the second and third disbursement stages. These delays are not random but show a recurring pattern each year, indicating the presence of structural obstacles, whether at the level of regional government administration, transfer mechanisms, or the readiness of documents from the school. Consistent delays lasting for weeks are highly likely to affect the school's cash flow stability and create irregularities in short-term budgeting.

Furthermore, delays in fund disbursement can have a significant impact on the effectiveness of school operations, particularly on learning activities that require timely funding. When funds are not received as scheduled, schools are forced to postpone activities such as the procurement of learning materials, payment of honoraria for non-civil servant teachers, and urgent facility maintenance [16]. In some cases, schools even need to borrow from internal cash reserves or delay the implementation of priority programs, which ultimately reduces the overall efficiency of budget management. The mismatch between fund receipt and the national schedule also disrupts the preparation of the school's cash flow and hinders the realization of the RKAS that has been periodically planned [17]. Thus, the data in the table above reinforce the urgency of research on the effectiveness and efficiency of BOS fund management at SMA Negeri 1 Keritang, as successful budget management depends not only on allocation and realization but also on the timeliness of fund disbursement, which is key to the smooth implementation of all educational activities.

From a management perspective, internal control is a crucial factor in preventing deviations or inconsistencies in budget utilization. According to the framework developed by COSO as cited in Rusvianto, an effective internal control system functions not only as a preventive mechanism but also as a tool for detecting and correcting risks that may hinder the achievement of organizational objectives [18]. Internal control includes various components, ranging from the control environment, risk assessment, control activities, information and communication, to monitoring activities that must operate consistently [19]. If internal supervision at SMA Negeri 1 Keritang has not been functioning optimally, for example, due to the lack of standard operating procedures, weak monitoring of budget realization, or minimal evaluation of fund utilization, then the effectiveness and efficiency of BOS fund management are unlikely to be achieved optimally. In addition, the absence of routine evaluation will make it difficult for the school to identify errors or inaccuracies in fund allocation, allowing the same weaknesses to recur in each budget period. Under such conditions, the school not only loses the opportunity to improve the quality of financial management but also faces the risk of accountability issues that may affect public trust.

Considering the complexity of these issues, research on the effectiveness and efficiency of BOS budget management at SMA Negeri 1 Keritang is highly important to conduct. This study is expected to provide an objective overview of how the processes of planning, implementation, and evaluation of the budget are actually carried out in the school. In addition to identifying the current condition of BOS fund management, this research also aims to uncover weaknesses, risks, and constraints that may have previously gone unnoticed by the school. Based on the issues described above, the researcher is interested in conducting a study entitled: **“Analysis of the Effectiveness and Efficiency of BOS Budget Management at SMA Negeri 1 Keritang.”**

Problem Formulation

1. How is the level of effectiveness in the management of the BOS Budget at SMA Negeri 1 Keritang?
2. How is the level of efficiency in the management of the BOS Budget at SMA Negeri 1 Keritang?

Research purposes

1. In general, this study aims to analyze the effectiveness and efficiency of BOS Budget management at SMA Negeri 1 Keritang, in order to provide a comprehensive overview of the extent to which the funds are

- managed in accordance with public financial management principles and are able to support improvements in the quality of educational services at the school.
2. To determine and analyze the level of effectiveness in the management of the BOS Budget at SMA Negeri 1 Keritang, particularly in relation to the achievement of program objectives and the fulfillment of planned educational needs.
 3. To determine and analyze the level of efficiency in the use of the BOS Budget at SMA Negeri 1 Keritang, by examining the alignment between inputs (budget allocation) and outputs (activity results), as well as the extent to which the use of funds has been carried out optimally with minimal waste.

2. LITERATURE REVIEW

Financial Management

According to Hayat et al., financial management is the management of funds, both related to the allocation of funds in various forms of investment effectively and efforts to raise funds for financing investments or expenditures efficiently [20]. In the context of the public sector, financial management emphasizes transparency, accountability, and the optimization of budget utilization derived from the state, regional sources, or special funds such as BOS funds.

Public financial management encompasses a series of activities ranging from budget planning, budgeting, budget implementation, administration, financial reporting, to budget accountability. Each of these stages must be carried out in accordance with the principles of public finance, such as value for money, efficiency, effectiveness, economy, and compliance with applicable regulations [21].

Thus, financial management not only regulates how funds are obtained and used, but also ensures that budgets are allocated appropriately, results are measurable, and maximum benefits are delivered to society. This concept serves as an important foundation in assessing the effectiveness and efficiency of budget management in educational institutions, including the utilization of BOS funds.

Effectiveness Theory

The theory of effectiveness emphasizes the extent to which an organization is able to achieve its predetermined goals optimally, and this concept serves as a basis for evaluating the success of every program, including the management of educational funds. According to Emerson, effectiveness is a key element in achieving the goals and objectives that have been established within every organization, activity, or program. An activity is considered effective if it achieves the goals or targets that have been set [22].

Meanwhile, effectiveness as the ability to carry out tasks and functions (operations of activities, programs, or missions) of an organization or similar entity without pressure or tension in its implementation. In the context of BOS funds, effectiveness includes the school's ability to carry out learning activities, procure facilities, organize extracurricular programs, and provide other educational services that have a tangible impact on the quality of learning .

Therefore, effectiveness is not only measured by budget absorption but also by the quality of the outcomes of funded activities, the achievement of priority programs, and the contribution of fund utilization to improving school performance. The greater the alignment between the objectives of BOS fund utilization and the results achieved by the school, the higher the level of effectiveness in budget management.

Effectiveness Ratio Formula

$$\text{Effectiveness Ratio} = \frac{\text{Budget Realization}}{\text{Target Budget}} \times 100\%$$

Effectiveness Assessment Standards

Percentage	Criteria
> 100%	Very Effective
90–100%	Effective
80–89%	Moderately Effective
60–79%	Less Effective
< 60%	Ineffective

Source: Oktaviani & Mulyandani (2022) [23]

Efficiency Theory

Efficiency theory emphasizes the optimal relationship between inputs and outputs in achieving organizational goals, where budget, time, and resources must be used economically without reducing service quality. According to Drucker, efficiency is the ability of an organization to carry out work in the most appropriate and correct way. In simpler terms, efficiency describes the extent to which an organization can utilize resources optimally without causing waste [24].

Efficiency can also be interpreted as a performance indicator that evaluates the success of an activity based on the amount of resources used to produce a certain output. The fewer resources required to achieve the same results, the higher the level of efficiency. In the context of BOS funds, efficiency is reflected in the school's ability to avoid unnecessary expenditures, ensure that the prices of goods and services are reasonable, and utilize funds rationally to generate optimal educational benefits.

Thus, measuring efficiency does not only compare the amount of budget with the realization of activities, but also assesses whether the use of funds truly produces outcomes that are equal to or greater than the costs incurred.

Efficiency Ratio Formula

$$\text{Efficiency Ratio} = \frac{\text{Actual Cost}}{\text{Budgeted Cost}} \times 100\%$$

Efficiency Assessment Standards

Percentage	Criteria
< 60%	Very Efficient
60–80%	Efficient
80–90%	Moderately Efficient
90–100%	Less Efficient
> 100%	Inefficient

Source: Hadinata *et al.* (2024) [25]

Relevant Previous Research

Several previous studies have examined the effectiveness and efficiency of BOS fund management in schools. Research by Edianus *et al.* found that although BOS funds have supported learning activities, there are still inefficiencies and mismatches between budget plans and program outcomes, indicating that effectiveness has not been fully achieved [4]. Similarly, Suherman *et al.* analyzed BOS financial management using the POAC approach and found that while planning and organizational aspects were adequate, implementation and supervision faced obstacles such as delays in fund disbursement and limited human resource capacity [26]. These findings highlight that technical and managerial challenges remain key issues in optimizing BOS fund management.

Other studies emphasize the importance of systems and governance in improving BOS fund management. Sri Ningsi showed that the use of digital applications such as ARKAS can enhance transparency and reporting accuracy, although challenges such as limited internet access and insufficient user training still hinder optimal implementation [27]. Meanwhile, Fajar and Sulistiawati demonstrated that accountability and transparency have a significant positive effect on the effectiveness of BOS fund management, supported by stakeholder participation, which strengthens overall budget governance [28].

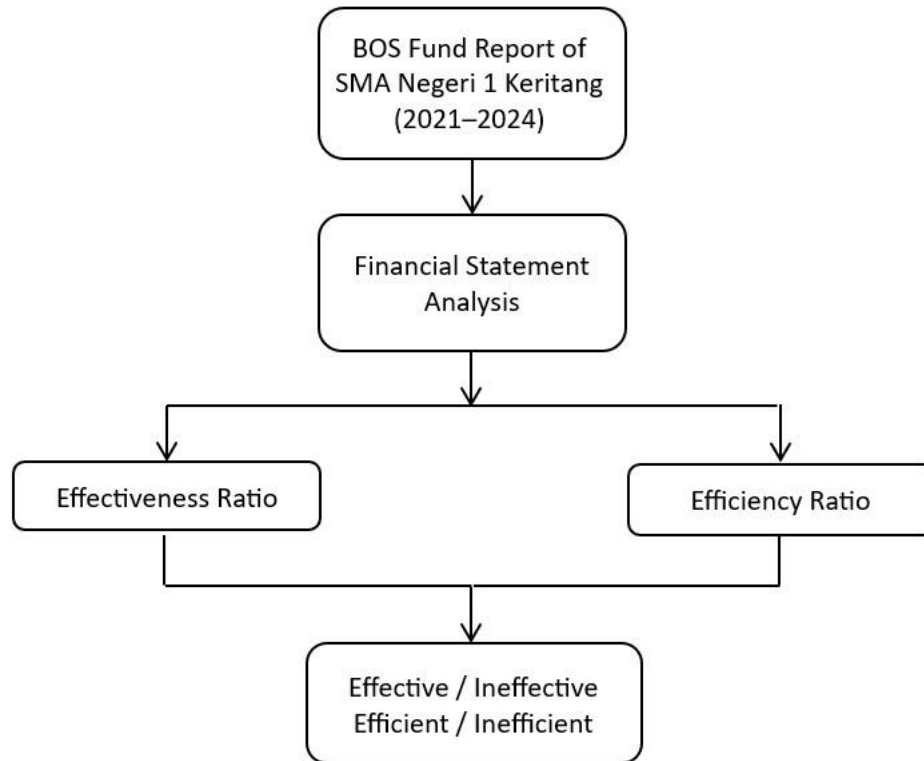
Furthermore, research by Rumahorbo *et al.* revealed that despite the adoption of digital systems, the effectiveness of BOS fund management is still influenced by human resource competence, fluctuating fund disbursement, and limited stakeholder involvement [29]. Overall, these studies indicate that the effectiveness and efficiency of BOS fund management are not only determined by budget allocation, but also by the quality of human resources, governance practices, technological support, and the timeliness of fund disbursement. Therefore, strengthening these aspects is essential to ensure that BOS funds can optimally improve the quality of education.

Research Framework

The conceptual framework in this study is developed as a foundation to analyze the effectiveness and efficiency of BOS fund management at SMA Negeri 1 Keritang. This research is based on financial report data of

BOS funds from 2021 to 2024, which are then analyzed using effectiveness and efficiency ratio approaches. The results of this analysis are used to assess whether budget management has been carried out optimally, both in terms of achieving objectives (effectiveness) and the use of resources (efficiency). Therefore, this conceptual framework illustrates the logical flow of the study in systematically evaluating the performance of BOS fund management.

Figure 1 Research Framework



3. RESEARCH METHOD

Types and Approaches of Research

This study employs a quantitative approach with an explanatory research design. The quantitative approach is chosen because this study seeks to measure phenomena objectively and produce findings that can be statistically analyzed. Explanatory research is used to explain the causal relationship between independent variables, namely the Effectiveness of Budget Management (X_1) and the Efficiency of Budget Management (X_2), and the dependent variable, namely the Performance of BOS Fund Management (Y). Through this approach, the study is expected to provide empirical evidence regarding the extent to which the two independent variables influence the performance of budget management in schools within the context of public financial governance.

Research Population

The research population refers to all subjects that possess certain characteristics relevant to the focus of the study. The population in this research includes all parties involved in managing BOS funds at the school, namely the principal, BOS treasurer, BOS operator, and administrative staff involved in budget planning, implementation, and reporting. In general, BOS management personnel at the school level consist of at least 30 individuals, which meets the minimum requirement for inferential statistical analysis. The selection of this population is based on the consideration that these individuals are the main actors who directly understand the processes of planning, realization, supervision, and accountability of BOS funds.

Sample and Sampling Technique

1) Research Sample

The sample is a subset of the population selected to represent the entire population. The sample in this study consists of individuals directly involved in BOS fund management, including the principal, BOS treasurer, BOS operator, and administrative staff responsible for documentation or reporting. If the population

size is relatively small (approximately 30–50 individuals), the study will use a total sampling technique, meaning all population members will be included as respondents. However, if the population exceeds a certain threshold, the sample size will be determined using the Slovin formula with a 5% error tolerance.

2) Sampling Technique

The sampling technique used is purposive sampling, which involves selecting respondents based on specific criteria. The criteria for respondents are as follows:

- a) Individuals who have a direct role in planning, implementing, or reporting BOS funds.
- b) Individuals who understand the preparation of the RKAS and BOS technical guidelines.
- c) Individuals willing to provide objective information through the research questionnaire.

Data Collection Techniques

Data collection in this study is carried out using the following techniques:

1) Documentation

Documentation is used to obtain secondary data, such as:

- a) School Activity and Budget Plan (RKAS)
- b) BOS fund realization reports
- c) BOS accountability documents
- d) Internal school evaluation documents

2) Limited Interviews

Limited interviews are conducted with the principal or BOS treasurer to obtain additional information regarding constraints, management processes, or aspects of budget implementation not captured in the questionnaire.

Data Analysis Techniques

Data analysis in this study is conducted by calculating and interpreting the effectiveness ratio and efficiency ratio of BOS fund management at SMA Negeri 1 Keritang. This analysis aims to assess the extent to which the planned budget can be realized optimally and how efficiently funds are used to support educational operations. The analysis stages are as follows:

1) Calculating the Effectiveness Ratio

The effectiveness ratio is used to measure the school's ability to realize the BOS budget in accordance with the plan set in the RKAS.

Effectiveness Ratio Formula

$$\text{Effectiveness Ratio} = \frac{\text{Budget Realization}}{\text{Target Budget}} \times 100\%$$

Effectiveness Assessment Standards

Percentage	Criteria
> 100%	Very Effective
90–100%	Effective
80–89%	Moderately Effective
60–79%	Less Effective
< 60%	Ineffective

Source: Oktaviani & Mulyandani (2022) [23]

2) Calculating the Efficiency Ratio

The efficiency ratio is used to assess the school's ability to use BOS funds economically without reducing the outcomes achieved.

Efficiency Ratio Formula

$$\text{Efficiency Ratio} = \frac{\text{Actual Cost}}{\text{Budgeted Cost}} \times 100\%$$

Efficiency Assessment Standards

Percentage	Criteria
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< 60%	Very Efficient
60–80%	Efficient
80–90%	Moderately Efficient
90–100%	Less Efficient
> 100%	Inefficient

Source: Hadinata *et al.* (2024) [25]

4. RESEARCH RESULTS AND DISCUSSION

Research result

Effectiveness Level of BOS Budget Management at SMA Negeri 1 Keritang

In assessing the performance of School Operational Assistance (BOS) fund management, one of the indicators that can be used is the level of effectiveness. Effectiveness in this context reflects the extent to which budget realization is able to achieve the targets set in the School Activity and Budget Plan (RKAS). The higher the level of alignment between the planned budget and its realization, the more effective the fund management is considered.

Table 4. Target Budget and Budget Realization of BOS Funds at SMA Negeri 1 Keritang

Year	Target Budget	Budget Realization
2021	Rp 1,346,412,000	Rp 1,345,187,000
2022	Rp 1,351,865,000	Rp 1,351,865,000
2023	Rp 1,389,660,000	Rp 1,389,660,000
2024	Rp 1,446,900,000	Rp 1,446,894,200

Source: RKAS and BOS Fund Realization Report of SMA Negeri 1 Keritang (2025)

The measurement of the effectiveness of BOS fund management at SMA Negeri 1 Keritang is carried out using the effectiveness ratio, which is the comparison between budget realization and the targeted budget. The data used in this analysis consist of BOS budget and realization data for the period 2021 to 2024. The results of the effectiveness ratio calculation will then be analyzed based on established assessment criteria to determine the level of effectiveness in budget management. The effectiveness ratio is calculated using the following formula:

$$\text{Effectiveness Ratio} = \frac{\text{Budget Realization}}{\text{Target Budget}} \times 100\%$$

Based on the results of the effectiveness ratio calculation using BOS budget and realization data, the level of effectiveness of BOS fund management at SMA Negeri 1 Keritang for the period 2021–2024 is presented in Table 5 below:

Table 5. Results of Effectiveness Ratio Calculations of BOS Funds at SMA Negeri 1 Keritang (2021–2024)

Year	Target Budget	Budget Realization	Effectiveness Ratio (%)	Effectiveness Criteria
2021	1,346,412,000	1,345,187,000	99.91%	Effective
2022	1,351,865,000	1,351,865,000	100%	Effective
2023	1,389,660,000	1,389,660,000	100%	Effective
2024	1,446,900,000	1,446,894,200	99.99%	Effective

Source: Processed by the Author from SMA Negeri 1 Keritang Data (2026)

Based on Table 4, the effectiveness ratio of BOS fund management at SMA Negeri 1 Keritang during the period 2021–2024 ranges from 99.91% to 100%. The highest values occurred in 2022 and 2023 at 100%, indicating that the entire budget planned in the RKAS was fully realized. Meanwhile, the lowest value occurred in 2021 at 99.91%, although the difference between the budget and its realization was relatively small. In 2024, the effectiveness ratio also shows a very high figure of 99.99%, indicating that budget realization was almost entirely in line with the planned targets. Overall, the data indicate that the level of BOS budget realization each year falls within a very high category.

Efficiency Level of BOS Budget Management at SMA Negeri 1 Keritang

Efficiency is one of the key indicators in assessing budget management performance, including the management of School Operational Assistance (BOS) funds. Efficiency reflects an institution's ability to utilize available resources optimally by minimizing waste without reducing the quality of the outcomes achieved. In the

context of BOS fund management, efficiency indicates the extent to which allocated funds are used economically and appropriately to support school operational activities.

Table 6. Budget Cost and Actual Cost of BOS Funds at SMA Negeri 1 Keritang

Year	Budget Cost	Actual Cost
2021	Rp 1,346,412,000	Rp 1,345,187,000
2022	Rp 1,351,865,000	Rp 1,351,865,000
2023	Rp 1,389,660,000	Rp 1,389,660,000
2024	Rp 1,446,900,000	Rp 1,446,894,200

Source: RKAS and BOS Fund Realization Report of SMA Negeri 1 Keritang (2025)

The measurement of the efficiency level of BOS fund management at SMA Negeri 1 Keritang is carried out using the efficiency ratio, which is the comparison between actual costs and budgeted costs. The data used in this analysis include BOS budget and realization figures for the period 2021 to 2024. The results of the efficiency ratio calculation will then be presented in tabular form and analyzed based on established assessment criteria to determine the level of efficiency in budget management. The efficiency ratio is calculated using the following formula:

$$\text{Efficiency Ratio} = \frac{\text{Actual Cost}}{\text{Budgeted Cost}} \times 100\%$$

Based on the results of the efficiency ratio calculation using BOS budget and realization data, the level of efficiency of BOS fund management at SMA Negeri 1 Keritang for the period 2021–2024 is presented in the following table:

Table 7. Results of Efficiency Ratio Calculations of BOS Funds at SMA Negeri 1 Keritang (2021–2024)

Year	Budget Cost	Actual Cost	Efficiency Ratio (%)	Efficiency Criteria
2021	1,346,412,000	1,345,187,000	99.91%	Less Efficient
2022	1,351,865,000	1,351,865,000	100%	Less Efficient
2023	1,389,660,000	1,389,660,000	100%	Less Efficient
2024	1,446,900,000	1,446,894,200	99.99%	Less Efficient

Source: Processed by the Author from SMA Negeri 1 Keritang Data (2026)

Based on Table 7, the efficiency ratio of BOS fund management at SMA Negeri 1 Keritang during the period 2021–2024 ranges from 99.91% to 100%. The highest efficiency values occurred in 2022 and 2023 at 100%, while the lowest value was recorded in 2021 at 99.91%. In 2024, the efficiency ratio was 99.99%, indicating a very high level of alignment between the budget and its realization. Based on the efficiency assessment criteria used, all efficiency ratio values during this period fall into the less efficient category.

Discussion

Analysis of the Effectiveness Level of BOS Budget Management at SMA Negeri 1 Keritang

Based on the results of the effectiveness ratio calculation, the management of School Operational Assistance (BOS) funds at SMA Negeri 1 Keritang during the period 2021–2024 shows a very high level of effectiveness, with ratio values ranging from 99.91% to 100%. This indicates that budget realization is almost entirely in line with the plans outlined in the School Activity and Budget Plan (RKAS). In general, this condition suggests that the school has a strong capability in planning and implementing budget utilization in a targeted manner.

This high level of effectiveness reflects that all planned programs and activities have been implemented optimally without significant obstacles in the execution process. This is consistent with the concept of effectiveness in public financial management, which emphasizes the achievement of predetermined targets or objectives. Therefore, it can be concluded that the management of BOS funds at SMA Negeri 1 Keritang has fulfilled the principle of effectiveness, particularly in terms of alignment between planning and budget realization.

However, the consistently very high level of effectiveness, which tends to reach 100% each year, also needs to be examined more critically. Budget realization that consistently approaches or reaches the total planned budget may indicate the absence of significant budget surpluses, which in some cases could reflect a tendency to fully exhaust available funds. This condition may reduce flexibility in financial management and create the potential for less selective budget utilization [30].

When viewed in relation to expenditure composition, several components show realizations that are not fully aligned with the ideal allocations based on BOS technical guidelines. For example, the proportion of

spending on learning and extracurricular activities as well as library development is below the ideal allocation, while administrative expenses and spending on facilities and infrastructure exceed the recommended limits. This indicates that although budget management is quantitatively effective, the quality of budget allocation still requires adjustment to better align with the main priorities in improving educational quality.

In addition, the recurring delays in BOS fund disbursement each year, although relatively short, may also influence the pattern of budget realization [31]. These delays have the potential to concentrate activity implementation within certain periods, thereby encouraging accelerated budget utilization within a limited timeframe. This condition may contribute to the high level of budget realization approaching 100%.

Therefore, although the management of BOS funds at SMA Negeri 1 Keritang has demonstrated a high level of effectiveness based on the calculated ratios, efforts are still needed to improve the quality of planning and budget distribution so that it is not only quantitatively effective but also optimal in supporting the overall achievement of educational objectives.

Analysis of the Efficiency Level of BOS Budget Management at SMA Negeri 1 Keritang

Based on the results of the efficiency ratio calculation, the management of School Operational Assistance (BOS) funds at SMA Negeri 1 Keritang during the period 2021–2024 shows efficiency ratio values ranging from 99.91% to 100%. Based on the assessment criteria used, all of these values fall into the less efficient category. This indicates that budget realization has almost entirely exhausted the planned budget without any significant remaining balance.

Conceptually, efficiency in budget management is not only measured by the level of conformity between the budget and its realization, but also by the ability to optimize the use of resources while minimizing waste [32]. In this context, budget realization that approaches or reaches 100% may indicate that there has been no optimal effort to achieve savings in the use of BOS funds. In other words, although all programs may have been implemented, this does not necessarily reflect efficient budget utilization.

When viewed from the expenditure composition, there are indications of imbalances in budget allocation that may affect the level of efficiency. The proportion of administrative expenditure is relatively high at 19%, exceeding the ideal allocation of 10%. In addition, spending on facilities and infrastructure reaches 36%, surpassing the recommended limit of 25%. Conversely, allocation for learning and extracurricular activities is only 22%, which is lower than the ideal standard of 35%. This discrepancy indicates a tendency to allocate funds to components that do not directly contribute to improving the quality of learning, thereby potentially reducing the overall efficiency of fund utilization.

In addition to allocation factors, delays in the disbursement of BOS funds each year may also contribute to the low level of efficiency. Although the delays are relatively short, ranging from 4 to 5 days, they still have the potential to affect the planning and implementation of school activities. Such delays may lead to the accumulation of activities within certain periods, encouraging faster and less structured budget utilization, which ultimately impacts the efficiency of fund management [33].

Furthermore, the condition in which the entire budget is almost always fully realized each year may indicate a budget management pattern that is oriented toward absorption rather than toward optimizing benefits. In public financial management practices, an excessive focus on budget absorption often overlooks aspects of priority and effectiveness, potentially leading to hidden inefficiencies, such as expenditures that are less urgent or do not provide significant impact on the main objectives of the program.

Therefore, although administratively the management of BOS funds at SMA Negeri 1 Keritang demonstrates a high level of conformity between the budget and its realization, from an efficiency perspective there are still several aspects that need improvement. Efforts to enhance efficiency can be carried out through more priority-based budget planning, better control over disproportionate expenditure components, and improved timeliness in fund management. This is important to ensure that BOS funds are not only fully absorbed but also provide optimal benefits in supporting improvements in the quality of education.

5. CONCLUSION

Based on the research results, the level of effectiveness of School Operational Assistance (BOS) fund management at SMA Negeri 1 Keritang during the period 2021–2024 falls within the effective category, with effectiveness ratio values ranging from 99.91% to 100%. This indicates that budget realization has been in accordance with the plans outlined in the School Activity and Budget Plan (RKAS). The high level of

effectiveness suggests that the school has been able to implement planned programs and activities optimally, so that the objectives of BOS fund utilization have been achieved as targeted.

However, in terms of efficiency, BOS fund management at SMA Negeri 1 Keritang is still categorized as less efficient, with efficiency ratio values also ranging from 99.91% to 100%. This indicates that budget utilization tends to fully exhaust the available funds without significant cost-saving efforts. In addition, there are inconsistencies in expenditure composition and delays in fund disbursement that also affect the level of efficiency. Therefore, although BOS fund management has been effective, efforts are still needed to improve efficiency through more priority-based planning, better control of budget allocation, and more optimal management of fund disbursement timing.

6. SUGGESTION

1. SMA Negeri 1 Keritang is advised to improve efficiency in the management of BOS funds by implementing more priority-based and needs-based budget planning. In addition, there should be better control over expenditure allocation, particularly in administrative and facilities and infrastructure components, to ensure that they do not exceed the proportions set in the BOS technical guidelines. Budget optimization should also be directed toward activities that directly support the improvement of learning quality, so that fund utilization is not only effective in terms of budget absorption but also efficient in its use.
2. Future research is recommended to develop a more comprehensive analysis by incorporating additional variables, such as the quality of educational outcomes, students' academic performance, and the level of stakeholder satisfaction with BOS fund utilization. Furthermore, the use of mixed-methods research approaches may be considered to obtain a deeper understanding of the effectiveness and efficiency of budget management, not only from a quantitative perspective but also from a qualitative standpoint.

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