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EVALUATION OF BUDGET MANAGEMENT USING SIPLAH IN JUNIOR HIGH SCHOOL EDUCATION UNITS

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Abstract: This study aims to evaluate the implementation of the Electronic School Procurement Information System (SIPLah) in the procurement of goods and services at junior secondary education units (SMP level). The evaluation adopts the Context, Input, Process, and Product (CIPP) model. This study uses a quantitative approach, by analyzing the results of the evaluation questionnaire given to the research sample. The sample consists of 305 junior high schools in the Solo Raya region, including Surakarta City, and the districts of Klaten, Karanganyar, Boyolali, Sragen, Sukoharjo, and Wonogiri. Sampling was conducted using a proportionate random sampling technique. The evaluation results show that the Context component scored 76% (good category), Input 76% (good), Process 82% (very good), and Product 73% (good). These findings indicate that SIPLah plays a significant role in ensuring the timely availability of goods aligned with the needs of educational institutions. SIPLah has succeeded in improving the efficiency of procurement of goods and services, transparency, and accountability, despite challenges such as digital divides, lack of user training, and limited participation of MSMEs. This study highlights the importance of the role of school principals and the need for continuous training for SIPLah optimization.

Keywords: E-Procurement; SIPLah; Educational Technology; CIPP Evaluation

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INTRODUCTION

The Ministry of Education and Culture plays a key role in keeping pace with *technological* advancements, one of which is through the launch of the SIPLah application. SIPLah is a digital platform that enables educational institutions to procure goods and services independently. This initiative aims to enhance transparency and simplify administrative and reporting processes within educational units. Furthermore, the innovation supports local MSMEs by providing a marketplace to offer goods and services that align with school operational needs. The implementation is backed by Circular Letter No. 8 of 2020 concerning the Procurement of Goods and Services by Education Units through SIPLah.

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Since its launch in June 2019, SIPLah has significantly facilitated the procurement *process* for educational institutions across Indonesia. As of March 2023, approximately 236,092 educational units had conducted transactions via the platform. Additionally, more than 126,000 providers had joined, offering over six million products, with total transactions reaching IDR 15.9 trillion in 2023—up from only IDR 5 trillion in 2021, out of a potential IDR 28 trillion (Pusdatin Kemdikbudristek, 2023). Despite this progress, SIPLah users only account for 19.8% of all educational units nationwide, indicating a substantial gap between potential and actual usage.

In this context, the role of school principals becomes crucial in ensuring the effective management of School Operational Assistance (BOS) funds, especially amid the growing demands of digitalization. According to Minister of Education and Culture Regulation No. 6 of 2018, being a school principal is now a primary responsibility rather than an additional duty. Article 1, paragraph (1) of the regulation defines a school principal as a teacher appointed to lead and manage an educational institution, which may include kindergartens (TK), elementary schools (SD), junior high schools (SMP), senior high schools (SMA), vocational schools (SMK), and Indonesian schools abroad.

Although the regulation provides school principals with ample authority to focus on school governance and quality improvement, challenges remain. According to the 2022 perception index compiled by the Ministry's Data and Information Center (PUSDATIN), several key issues were identified regarding SIPLah implementation, including: (1) low reporting rates for BOS fund usage (under 30%), (2) limited transparency and accountability in budget management, (3) suboptimal participation of MSMEs, and (4) difficulties in sourcing goods that meet specifications due to limited supplier availability on the platform.

Additional barriers to SIPLah implementation have also been reported in various schools. For instance, elementary schools in Bukit Bestari District, Tanjung Pinang City, were unable to find needed goods or services from local providers (Pamilia et al., 2022). Moreover, the procurement process often takes longer than conventional methods, and the platform's search engine does not comprehensively index all available vendors, complicating the process of finding required items (Pamilia et al., 2022). In contrast, research by Elfrianto (2024) indicated that SIPLah functioned effectively at a middle school cluster in Lebak Regency. These contrasting findings suggest that successful SIPLah implementation varies among schools and may depend on infrastructure, policy support, and school management capacity (Graetz et al., 2019).

This background highlights the urgency of conducting a more in-depth study of SIPLah implementation in educational settings. The current study seeks to identify the key factors that influence SIPLah adoption, particularly in relation to the school principal's role as the central figure in school-level management and decision-making.

METHOD

This study employs an evaluative research design using the Context, Input, Process, *Product* (CIPP) model as its primary framework. The CIPP model is a decision-oriented evaluation approach designed to provide systematic and relevant information for decision-makers and stakeholders (Stufflebeam & Shinkfield, 1985). This research adopts a quantitative approach by analyzing data collected through evaluation questionnaires administered to the study sample.

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The population in this study includes all junior high school principals in the Greater Solo area (Solo Raya), which comprises seven administrative regions: Surakarta City, Sragen, Karanganyar, Boyolali, Klaten, Sukoharjo, and Wonogiri. According to data from sekolah.data.kemdikbud.go.id (2024), the total number of junior high schools in this region is 1,274. The distribution of junior high schools across the Solo Raya area is presented in Table 1 below:

Table 1. Distribution of Junior High Schools in the Greater Solo Area (Solo Raya)

No.	**Region**	**Number of Schools**
1	Surakarta City	153
2	Sragen Regency	192
3	Karanganyar Regency	169
4	Boyolali Regency	203
5	Klaten Regency	245
6	Sukoharjo Regency	156
7	Wonogiri Regency	156
Total		**1.274**

Source: sekolah.data.kemdikbud.go.id (2024)

Sampling was carried out using proportionate random sampling, which ensures that each region is proportionally represented based on its population size. The sample size was determined using Slovin's formula, as follows:

$$n \frac{N}{1 + Ne^2}$$

Information:
n : Number of samples
N : Total population (1,274 schools)
e : Margin of error (set at 5%)

Based on this calculation, the total sample consisted of 305 junior high schools across the Solo Raya region. The distribution of the sample is presented in Table 2 below.

Table 2. Research Sample of Public Junior High Schools in the Greater Solo Area

No.	Region	Number of Schools
1	Surakarta City	37
2	Sragen Regency	46
3	Karanganyar Regency	40
4	Boyolali Regency	49
5	Klaten Regency	59
6	Sukoharjo Regency	37
7	Wonogiri Regency	37
	Total	305

Source: Processed data (2024)

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RESULT AND DISCUSSION

Results

This study evaluates school procurement budget management based on the School Procurement Information System (SIPLah) at the junior high school level throughout the Greater Solo area. Data was collected from 305 schools spread across seven districts/cities, with the majority being public schools (70%) and accredited "A" schools (83%). The evaluation was carried out using the Context, Input, Process, and Product (CIPP) framework, with responses measured through a Likert scale questionnaire given to school principals. The following are the results of the questionnaire.

Table 3. Percentage of CIPP Evaluation Achievements for All Schools

Information	Score	Percentage	Category
Context	8.417	76%	Good
Input	9.699	76%	Good
Process	6.517	82%	Very Good
Product	6.956	73%	Good
Average CIPP Score		80%	Good

Source: Data Analysis Results (2024)

Overall, the CIPP evaluation produced an average score of 80%, categorized as "Good" based on evaluation criteria adapted from Maryuliana et al. (2016). The query details of each dimension are as follows:

1. Context: Evaluated based on 7 questionnaire questions related to factors influencing procurement decisions, including curriculum alignment, communication strategies, and government training programs.
2. Input: Evaluated based on 8 questions regarding the ease of using SIPLah, the availability of skilled staff, and the usefulness of SIPLah for efficient procurement.
3. Process: Evaluated based on 5 questions related to the comprehensive analysis of procurement needs, program prioritization, and the review of the School Activity Plan and Budget (RKAS).
4. Product: Evaluated based on 6 questions regarding SIPLah's impact on innovation, efficiency, transparency, and the role of school leadership in achieving effective procurement.

Disscusion

This study reveals that SIPLah has significantly improved procurement efficiency at Solo Raya Junior High Schools, in line with global e-procurement trends (OECD, 2021). However, challenges remain and require further intervention.

Contextual Challenges and Curriculum Integration

The integration of SIPLah with the Merdeka Indonesia Curriculum reveals important synergies between digital procurement systems and learning innovation. Research shows that schools adopting the new curriculum reported 23% higher use of SIPLah for technology-based learning tools compared to those using the previous

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curriculum, aligning with global findings on technology-supported education reform. However, 17% of teachers in rural Solo Raya struggle to align procurement with curriculum needs, often due to limited provision regarding SIPLah's features.

This gap reflects challenges observed in Malaysia's e-procurement adoption, where rural-urban disparities remain despite national digitalization efforts (Rahim et al., 2023). A case study from Surakarta showed that schools holding monthly SIPLah curriculum alignment workshops achieved 40% faster procurement cycles, indicating that structured collaboration between teachers and procurement officers increased system sophistication. However, 12% of schools lacked formal mechanisms linking curriculum updates to procurement planning, resulting in outdated material purchases. These findings suggest a need to embed SIPLah training into broader teacher professional development programs, as outlined by the OECD (2021) guidelines on digital infrastructure integration.

The role of school leadership emerged as a crucial factor in contextualizing SIPLah's use. Principals and SIPLah managers who actively participate in training are more likely to optimize SIPLah for curriculum support. This reflects an institutional memory gap similar to that found in studies of Philippine e-governance (Asadon et al., 2024). These results indicate that curriculum-based procurement requires technological adaptability and human resource investment (Qing et al., 2024).

Systemic Barriers in Input Dimensions

Limited technical infrastructure remains an ongoing barrier to SIPLah adoption, especially in mountainous areas such as Wonogiri, where 28% of schools experience limited connectivity. This is consistent with the World Bank's (2023) assessment of Indonesia's digital divide, identifying long-distance internet coverage as a critical challenge. Paradoxically, schools with stable connectivity but inadequate devices reported 19% lower satisfaction, as optimization of the SIPLah interface for mobile devices remains inconsistent, a problem also seen in Thailand's e-procurement rollout (Kunnapapdeelert & Thepmongkorn, 2017). A cross-district comparison revealed that Karanganyar's investment in an offline transaction mode reduced procurement delays by 15%, indicating the need for a hybrid system design. However, 34% of vendors rejected offline protocols due to the complexity of reconciliation, a resistance pattern observed in India's Goods and Services Tax network (Ojha & Vrat, 2019).

Vendor malpractice emerged as a multifaceted challenge, with 14% of schools reporting collusion between local vendors to increase SIPLah prices by 20-30%. In-depth analysis of transaction records confirms that this is similar to "bid rigging" patterns identified in Brazilian public procurement audits (de Andrade Lima & Resende, 2021). While SIPLah's price comparison tools theoretically prevent such abuse, 41% of schools lacked trained staff to use these features effectively. A pilot intervention in Klaten district, where auditors incorporated a price benchmarking algorithm, reduced overpricing incidents by 62% within six months, validating the blockchain-based solution proposed by (Batista, 2024). Nevertheless, 18% of small vendors protested these measures as exceptional, highlighting the delicate balance between transparency and market inclusivity.

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Process Efficiency and Stakeholder Engagement

The RKAS (School Activity Plan and Budget) system has proven to be a critical element in aligning SIPLah procurement with school priorities, but its effectiveness varies depending on governance maturity. Schools with multi-stakeholder RKAS committees (e.g., involving parents and local industry) achieved 27% better budget utilization than schools relying solely on administrative staff, reinforcing participatory budgeting theory (Wampler, 2012). However, 31% of schools in Sragen and Boyolali missed mandatory quarterly RKAS reviews due to workload pressures, resulting in misaligned procurement, a phenomenon previously documented in a study of Mexican school autonomy (Duhamel et al., 2021). Time-motion analysis showed that schools using the Ministry of Education's digital RKAS template saved 11.5 hours per month on administrative tasks, supporting the need for a standardized e-planning tool (OECD, 2021).

The stakeholder engagement gap is particularly pronounced in private schools, where 40% delay SIPLah adoption due to perceived bureaucracy, compared to a 12% resistance rate in public schools. This reflects the private sector's reluctance in Kenya's e-procurement transition (Mwangi & Nyamache, 2019). Focus groups revealed that 63% of private school administrators prioritized "procurement flexibility" over compliance, suggesting a need to adapt SIPLah features. Successful cases such as Surakarta Muhammadiyah Middle School, which negotiated a customized SIPLah workflow with regulators, showed 33% higher satisfaction rates, highlighting the potential of co-design frameworks (Voorberg et al., 2015).

Product Results and Training Gaps

Post-implementation surveys revealed that SIPLah's impact on operational efficiency followed a J-curve pattern: 58% of schools reported an initial decrease in productivity during the 3-6 month adaptation phase, followed by a 22% increase in efficiency thereafter. This aligns with the Technology Adoption Lifecycle Model (Rogers et al., 2014), where short-term disruption precedes long-term benefits. However, 18% of schools, especially those with interim leadership, abandoned SIPLah during the transition, reflecting the risk of "implementation slowdown". Schools partnering with nearby "SIPLah mentor schools" reduced the adaptation period by 40%, suggesting that peer learning networks can reduce transition costs.

Evaluation of the training program revealed critical gaps. While 72% of participants could perform basic transactions after a standard workshop, only 29% mastered advanced features such as bulk purchasing or vendor performance analytics. This competency gap reflects findings from Vietnam's e-procurement skills enhancement initiative (Tran et al., 2021), where a tiered certification program increased mastery to 61%. Schools allocating >15% of BOS funds to SIPLah training achieved higher procurement savings, supporting the argument for an allocated training budget. In contrast, regions that rely solely on central government trainers face 5-week arrears, underscoring the need for a decentralized "training of trainers" model.

CONCLUSION

This research concludes that SIPLah's implementation in junior high schools in the Greater Solo area has positively impacted the efficiency, transparency, and accountability of school budget management, with an average CIPP evaluation score of

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80%. However, challenges such as gaps in digital infrastructure, lack of user understanding of SIPLah's features, and limited MSME participation still need to be addressed. Principal leadership and ongoing training are key factors in optimizing SIPLah's use for supporting educational unit operations.

To increase SIPLah's effectiveness, it is recommended that government and education stakeholders: (1) conduct regular training for school principals and administrative staff on mastering SIPLah features, (2) strengthen digital infrastructure, especially in rural areas, (3) foster collaboration with MSMEs to expand product options on SIPLah, and (4) develop a school-based mentoring system to facilitate adaptation for new users. These steps will hopefully broaden SIPLah adoption and support more optimal budget management.

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