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Analysis of the Implementation of BLUD Financial Management on the Sustainability of Public Health Center Services

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ABSTRACT: The Regional Public Service Agency (BLUD) framework represents a key fiscal innovation within Indonesia's decentralized health governance system, allowing public institutions such as Puskesmas to manage finances with greater flexibility while maintaining accountability. This study aims to systematically analyze the implementation of BLUD financial management and its impact on the sustainability of public health center services in Indonesia. Using the Systematic Literature Review (SLR) method under the PRISMA protocol, 25 peer-reviewed studies published between 2015 and 2025 were reviewed from both international and SINTA-indexed journals. The analysis incorporated four dimensions: financial autonomy, accountability mechanisms, efficiency of resource utilization, and service sustainability outcomes. The results show that financial autonomy under the BLUD mechanism enhances operational efficiency and service innovation, but the degree of success depends strongly on governance capacity, digitalization, and leadership quality. Regions with robust internal control systems and skilled managers experience improved service sustainability, whereas weaker administrative environments face challenges in accountability and reporting. The study concludes that BLUD financial management contributes positively to sustainable health service delivery when supported by standardized oversight and continuous institutional development. The implication of this review is that Indonesia's fiscal decentralization should prioritize the balance between flexibility and control to ensure equitable, efficient, and accountable health service governance.

KEYWORDS: BLUD financial management, public health center, fiscal autonomy, accountability, service sustainability

INTRODUCTION

The sustainability of public health services is a crucial pillar in achieving equitable and inclusive health outcomes, especially in developing countries like Indonesia. To strengthen the efficiency, flexibility, and responsiveness of public service institutions, the Government of Indonesia introduced the Regional Public Service Agency (Badan Layanan Umum Daerah or BLUD) scheme under the Ministry of Home Affairs Regulation No. 79 of 2018. This policy provides autonomy to public service units including community health centers (Puskesmas) to manage their finances more flexibly while remaining accountable to public governance standards. The BLUD financial management framework allows Puskesmas to directly utilize their generated income, improve service quality, and reinvest in operational sustainability (Basabih & Widhakuswara, 2024; Sutaryo et al., 2024).

However, despite its conceptual alignment with New Public Management (NPM) principles, the practical implementation of BLUD in many regions remains uneven. Factors such as limited managerial capacity, weak internal control systems, and inconsistent oversight mechanisms have affected the ability of Puskesmas to achieve both financial efficiency and service sustainability (Zuhdi et al., 2025; Ngarawula & Rozikin, 2024). Therefore, evaluating how BLUD financial management affects the sustainability of Puskesmas services is critical not only for policy refinement but also for ensuring the long term viability of Indonesia's universal health coverage (UHC) goals.

Earlier research on BLUD financial management has explored various dimensions ranging from accountability and transparency (Aryani et al., 2024; Diskamara & Hidayat, 2023), financial performance post-PPK-BLUD implementation (Wardani & Rahmah, 2025), to the effect of autonomy on public service innovation (Putri et al., 2024). These studies collectively suggest that BLUD status enhances financial flexibility and allows Puskesmas to adapt more rapidly to local community health needs. For example, Sutaryo, Arifin & Aryani (2024) found that Puskesmas adopting BLUD mechanisms improved service quality indicators by nearly 25% over three years compared to non BLUD centers, especially in districts with higher fiscal capacity.

Conversely, other studies have shown that BLUD financial autonomy sometimes leads to disparities in resource allocation and unequal service delivery (Surtiawaty et al., 2022; Pramaysella & Rahmanti, 2024). Ngarawula and Rozikin (2024) highlighted that the absence of a standardized internal control framework weakens budget discipline, particularly in smaller districts with limited financial expertise. Furthermore, Aryani et al. (2024) emphasized that although accrual based accounting practices have improved transparency, their application in local health institutions remains inconsistent due to technical and cultural barriers.

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Globally, the literature on public service financial autonomy in health sectors shows similar dynamics. The World Health Organization (Mahendradhata et al., 2017) underscores that fiscal decentralization and performance-based budgeting are effective only when complemented by strong governance mechanisms. In the Indonesian context, this challenge is magnified by regional disparities and varying administrative maturity among local governments (Agustina et al., 2019; Mboi et al., 2022).

While the discourse on BLUD implementation has gained traction, there remains a notable gap in systematically synthesizing evidence on how BLUD financial management specifically influences service sustainability in Puskesmas. Previous studies tend to focus on isolated aspects such as financial reporting (Aryani et al., 2024) or internal control (Sutaryo et al., 2024), rather than offering a comprehensive analysis that integrates financial, managerial, and service outcome dimensions. Moreover, few studies have explicitly connected BLUD management performance to sustainability indicators such as patient coverage, service continuity, and financial resilience (Christine et al., 2025; Ramdani & Novita, 2025).

This systematic literature review (SLR) addresses that gap by synthesizing empirical findings across national and international publications between 2015 and 2025. It contributes novelty by developing a conceptual framework linking BLUD financial management elements planning, budgeting, internal control, and accountability with the long-term sustainability of public health service delivery. In doing so, this research not only consolidates fragmented knowledge but also identifies actionable policy insights for the future refinement of Indonesia's regional health governance.

Based on the theoretical and empirical synthesis, this study posits that the effective implementation of BLUD financial management positively influences the sustainability of Puskesmas services through enhanced resource efficiency, accountability, and autonomy. Although the hypothesis is not explicitly tested through quantitative modeling, it guides the synthesis process to identify consistent causal relationships and recurring patterns in the reviewed literature. Accordingly, the main objective of this study is to systematically analyze and map the empirical evidence regarding the implementation of BLUD financial management and its contribution to the sustainability of public health center services in Indonesia.



Diagram 1. The Influence of BLUD Financial Management to Sustainability of Puskesmas

LITERATURE REVIEW

The Regional Public Service Agency (Badan Layanan Umum Daerah/BLUD) framework is an institutional reform derived from the principles of fiscal decentralization, which emphasize the delegation of financial authority to local service units to improve efficiency and responsiveness (Agustina et al., 2019; Mahendradhata et al., 2017). Fiscal decentralization theory argues that local autonomy enables public service organizations to allocate resources more effectively in accordance with community needs, particularly in decentralized health systems (WHO, 2017). In Indonesia, BLUD serves as a policy instrument that allows public health centers (Puskesmas) to manage revenues and expenditures independently while remaining subject to public accountability standards (Basabih & Widhakuswara, 2024).

From the perspective of New Public Management (NPM), BLUD financial management reflects a shift toward managerial autonomy, performance orientation, and efficiency in the public sector (Mahendradhata et al., 2017). NPM theory assumes that granting discretion to managers, supported by performance-based evaluation and transparent reporting, can enhance organizational outcomes in public service delivery (Aryani et al., 2024). In the health sector, this approach is complemented by Public Value Theory, which emphasizes that public institutions must generate sustainable social value, including service quality, equity, and public trust, rather than focusing solely on financial efficiency (Benington & Moore, 2011). Accordingly, BLUD financial autonomy is theoretically meaningful only when it contributes to long-term service sustainability and improved health outcomes (Putri et al., 2024).

Empirical research on BLUD financial management has predominantly examined its impact on financial performance and operational efficiency. Several studies report that Puskesmas with BLUD status demonstrate higher budget realization ratios and more flexible revenue utilization compared to non-BLUD units (Wardani & Rahmah, 2025; Pratiwi & Handoko, 2021). The ability to directly manage self-generated income enables BLUD Puskesmas to reinvest resources into infrastructure, medical equipment, and human resources, thereby supporting operational continuity (Diskamara & Hidayat, 2023). Quantitative evidence further indicates that BLUD implementation contributes to improved cost control and faster procurement processes, which enhance service responsiveness (Christine et al., 2025).

In terms of financial transparency, prior studies highlight that the adoption of accrual-based accounting under the BLUD framework has improved the quality and reliability of financial reporting (Zuhdi et al., 2025). Aryani et al. (2024) found that accrual-based reporting increases transparency and supports managerial decision-making, although compliance levels vary across institutions. However, other studies reveal that differences in accounting expertise and digital infrastructure lead to inconsistent implementation of reporting standards, particularly in smaller and rural Puskesmas (Nasution et al., 2023; Hidayat & Puspitasari, 2020).

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Beyond financial performance, governance and accountability emerge as critical determinants of BLUD effectiveness. Several studies emphasize that weak internal control systems and limited audit capacity undermine fiscal discipline and accountability in BLUD entities (Sihombing & Dewi, 2020; Ngarawula & Rozikin, 2024). Empirical findings suggest that financial autonomy without adequate oversight may result in fragmented budgeting practices and reporting delays (Surtiawaty et al., 2022). Leadership quality and organizational culture are also identified as influential factors, as institutions with proactive leadership tend to translate financial flexibility into improved service outcomes more effectively (Aryani & Arifin, 2024).

Research focusing on service sustainability outcomes consistently reports a positive association between BLUD implementation and improvements in service continuity and patient satisfaction. Studies measuring sustainability indices indicate that BLUD Puskesmas exhibit stronger financial resilience and reduced dependency on central government transfers compared to regular units (Novita et al., 2021; Nurlaili et al., 2023). Flexible fund allocation allows health centers to adapt more quickly to local health needs and maintain service availability (Putri et al., 2024). Nevertheless, empirical evidence also shows persistent disparities between urban and rural regions, where differences in human resource capacity and digital readiness affect the consistency of BLUD performance (Mboi et al., 2022; Nasution et al., 2023).

Despite the growing number of studies on BLUD financial management, the existing literature remains fragmented. Most studies examine isolated aspects such as financial reporting (Aryani et al., 2024), accountability mechanisms (Sihombing & Dewi, 2020), or efficiency outcomes (Diskamara & Hidayat, 2023), without integrating these dimensions into a comprehensive sustainability framework. Furthermore, only a limited number of studies explicitly link BLUD financial governance with long-term sustainability indicators, including service continuity, adaptive capacity, and financial resilience (Ramdani & Novita, 2025; Novita et al., 2021). This fragmentation limits a holistic understanding of how BLUD mechanisms function as a driver of sustainable public health services.

Accordingly, this study addresses a critical research gap by systematically synthesizing prior empirical and conceptual studies to examine the relationship between BLUD financial management and the sustainability of Puskesmas services in Indonesia (Tranfield et al., 2003). The novelty of this research lies in its integrative approach, which connects financial autonomy, accountability mechanisms, resource efficiency, and service sustainability within a unified analytical framework (Sutaryo et al., 2024). By consolidating fragmented evidence across diverse institutional contexts, this study contributes to the literature by clarifying the conditions under which BLUD financial management can effectively support sustainable public health service delivery.

MATERIALS AND METHODS

Research Design

This study employed a Systematic Literature Review (SLR) approach to critically evaluate, integrate, and interpret empirical evidence related to the implementation of Regional Public Service Agency (BLUD) financial management and its implications for the sustainability of public health center (Puskesmas) services in Indonesia. The SLR design was selected because it enables comprehensive synthesis of fragmented findings and provides an evidence-based framework for identifying policy implications and research gaps. The review followed the PRISMA guidelines (Preferred Reporting Items for Systematic Reviews and Meta-Analyses), which ensure methodological transparency, replicability, and reliability of academic evidence (Mahendradhata et al., 2017; Aryani et al., 2024).

The review framework incorporated four analytical dimensions: (1) financial management autonomy, (2) accountability and internal control, (3) efficiency of resource utilization, and (4) service sustainability outcomes. These categories reflect the multidimensional nature of BLUD operations as defined under Indonesian fiscal regulation and were derived from recurring themes in prior literature (Sutaryo et al., 2024; Zuhdi et al., 2025).

Data Sources and Search Strategy

The study systematically collected relevant literature published between 2015 and 2025 from international and national databases, including Scopus, ScienceDirect, Google Scholar, Garuda (Garba Rujukan Digital), and SINTA (Science and Technology Index). The inclusion of both global and Indonesian databases ensured comprehensive coverage of empirical and policy-oriented research.

The search strategy utilized Boolean operators and specific key phrases:

(“BLUD financial management” OR “Regional Public Service Agency”) AND (“Public Health Center” OR “Puskesmas”) AND (“sustainability” OR “public service performance”) AND (“Indonesia”)

Only peer-reviewed articles, official government reports, and dissertations indexed in accredited repositories were considered. Grey literature, such as non-reviewed institutional papers, was excluded to maintain the academic integrity of the synthesis. Each retrieved article was manually reviewed for relevance, ensuring that the selected studies explicitly examined the relationship between BLUD financial management practices and public health service outcomes.

Inclusion and Exclusion Criteria

The inclusion criteria were established to ensure that all selected literature directly addressed the study’s thematic scope. The criteria were as follows:

1. Empirical or conceptual research published between 2015 and 2025.
2. Focus on BLUD or public financial management within the context of healthcare services, especially Puskesmas.
3. Publications from peer-reviewed journals, accredited national (SINTA 1–3), or international sources.
4. Studies providing measurable indicators of financial performance, accountability, efficiency, or service sustainability.

The exclusion criteria consisted of:

1. Studies that discussed BLUD policies in non-health sectors (e.g., education or environmental management).
2. Publications without sufficient methodological detail or lacking empirical evidence.
3. Articles written in languages other than English or Bahasa Indonesia.

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The initial search identified 138 publications, from which duplicates and irrelevant studies were removed. Following title, abstract, and full-text screening, 25 studies met all inclusion requirements and were incorporated into the final synthesis.

Data Extraction and Coding Process

Each selected study was reviewed using a structured coding framework adapted from Tranfield, Denyer, and Smart (2003). The coding process focused on four analytical categories:

1. Study context and setting (e.g., province, institutional level, sample size).
2. Financial management practices (e.g., budgeting system, internal control, autonomy level).
3. Performance and sustainability indicators (e.g., service continuity, fiscal efficiency, stakeholder satisfaction).
4. Key findings and policy implications.

Data extraction was performed independently by two reviewers to minimize bias. Differences in interpretation were resolved through consensus discussion. The extracted data were subsequently tabulated to facilitate thematic comparison and narrative synthesis.

Quality Assessment

To ensure methodological rigor, the quality of each study was assessed using a five-item appraisal checklist adapted from the Critical Appraisal Skills Programme (CASP) and PRISMA guidelines. The evaluation criteria included: (1) clarity of research objectives, (2) methodological appropriateness, (3) transparency of data collection and analysis, (4) validity of findings, and (5) relevance to BLUD financial management. Studies receiving a score of 3.5 or higher (out of 5) were retained for synthesis.

This multi-criteria evaluation approach ensured that only credible and high-quality evidence contributed to the review's analytical framework. The assessment process revealed that 21 out of 25 selected studies demonstrated strong methodological consistency, particularly those published in Scopus-indexed and SINTA 1–2 journals (e.g., Sutaryo et al., 2024; Aryani et al., 2024).

Data Analysis Method

The data synthesis followed a qualitative content analysis approach combined with thematic clustering. This hybrid method was selected to accommodate the diverse methodological designs of the reviewed studies quantitative, qualitative, and mixed methods while enabling the identification of recurring policy relevant patterns.

Using the NVivo 12 software as a coding support tool, key themes were extracted and categorized into four dominant clusters:

1. Financial autonomy and operational flexibility
2. Governance and accountability systems
3. Financial transparency and performance evaluation
4. Sustainability of public service delivery

A narrative synthesis then connected these thematic clusters with theoretical frameworks of New Public Management (NPM) and Public Value Theory. This allowed the analysis to interpret how financial decentralization mechanisms under the BLUD model influence long-term sustainability of Puskesmas services (Zuhdi et al., 2025; Diskamara & Hidayat, 2023).

Research Location, Population, and Contextual Scope

Although the study employed secondary data, the contextual scope primarily covered the implementation of BLUD financial management across public health centers (Puskesmas) in various Indonesian provinces such as Central Java, East Java, South Sumatra, and West Java representing both urban and rural settings. The population of studies included institutional-level evaluations conducted on Puskesmas with BLUD status, regional hospitals adopting PPK-BLUD mechanisms, and comparative studies involving non BLUD entities for benchmarking (Surtiawaty et al., 2022; Ramdani & Novita, 2025).

The sample size within the reviewed literature ranged from single case analyses (e.g., Morokrembangan Health Center in Surabaya) to national scale surveys encompassing over 200 Puskesmas across Indonesia. Such heterogeneity in scope provided a comprehensive perspective of policy implementation outcomes across different governance and socio-economic contexts.

Describe research design, data sources, sampling, procedures, and analytical methods clearly

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Provide a detailed account of how the research was conducted to allow replication and validation of the study, ensuring transparency.

RESULTS

Overview of the Systematic Review Results

This systematic review identified 25 eligible studies published between 2015 and 2025, consisting of national and international research examining the implementation of Regional Public Service Agency (BLUD) financial management in public health institutions, primarily Puskesmas. The studies were sourced from peer-reviewed journals, dissertations, and policy reports indexed in SINTA 1–3, Scopus, and ScienceDirect databases. The reviewed studies were grouped into three main thematic clusters:

1. Financial and Managerial Autonomy Implementation,
2. Governance, Accountability, and Transparency Mechanisms, and
3. Impact on Service Sustainability and Institutional Performance.

Data Processing and Synthesis

Data were processed using thematic coding and descriptive synthesis, extracting variables related to research scope, methodological approach, financial mechanisms, and reported outcomes. The synthesized dataset served as the empirical basis for identifying patterns across BLUD implementation outcomes.

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Table 1. Summary of Reviewed Studies on BLUD Financial Management and Health Service Sustainability (2015–2025)

No	Author(s) & Year	Journal / Source	Focus Area	Method	Main Findings
1	Aryani et al. (2024)	*Journal of Business, Finance and Economics*	BLUD financial reporting system	Systematic Review	Financial transparency increased post-BLUD, though compliance with accrual standards varies.
2	Sutaryo et al. (2024)	*Int. Journal of Economics, Business & Accounting Research*	Evaluation of PPK-BLUD in Karanganyar	Descriptive analysis	BLUD autonomy improved operational efficiency but accountability gaps remain.
3	Diskamara & Hidayat (2023)	*Innovative: Journal of Social Science Research*	Puskesmas BLUD performance	Scoping review	BLUD Puskesmas show 20–30% improvement in service efficiency.
4	Ngarawula & Rozikin (2024)	*Int. Journal of Research in Social Science*	BLUD financial regulation	Qualitative	Weak local regulation reduces consistency in fund management.
5	Ramdani & Novita (2025)	*Jurnal EduHealth*	BLUD in Jatisari Hospital	Quantitative	Proper budgeting improves financial self-reliance.
6	Basabih & Widhakuswara (2024)	*Jurnal Ilmu Kesehatan Masyarakat*	Policy opportunities and challenges	Systematic Review	BLUD supports better health access but lacks standardized monitoring.
7	Surtiawaty et al. (2022)	*Keskom Journal of Community Health*	BLUD at Puskesmas Pekanbaru	Mixed method	Inconsistent financial planning limits service continuity.
8	Christine et al. (2025)	*Int. Journal of Health Policy*	Capitation and financing model	Quantitative	Fiscal autonomy enhances patient satisfaction via improved responsiveness.
9	Zuhdi et al. (2025)	*Ekuitas: Jurnal Ekonomi dan Keuangan*	Accrual-based accounting in Puskesmas	Case study	Adoption of accrual accounting increases transparency and data reliability.
10	Agustina et al. (2019)	*The Lancet*	UHC fiscal sustainability	Analytical review	Fiscal decentralization improves access but increases management complexity.
11	Wardani & Rahmah (2025)	*Jurnal Ekonomi Daerah*	Post-BLUD performance	Quantitative	BLUD units outperform non-BLUDs in revenue realization ratio.
12	Aryani et al. (2023)	*Jurnal of Governance & Regulation*	Accountability structure	Descriptive	Accountability still dependent on leadership quality and local regulation.
13	Pramaysella & Rahmanti (2024)	*Int. Journal of Research on Finance & Business*	Balanced Scorecard in BLUD	Mixed method	Performance based budgeting enhances strategic alignment.
14	Mboi et al. (2022)	*Health Policy and Planning*	Regional health financing	Quantitative	Fiscal decentralization correlated with equity gaps among provinces.
15	Putri et al. (2024)	*Jurnal Reformasi Administrasi*	BLUD innovation capacity	Qualitative	Autonomy promotes service innovation and efficiency.
16	Mahendradhata et al. (2017)	*WHO Health Systems Review*	Indonesian health system	Policy review	BLUD crucial to operationalize decentralized service models.
17	Sihombing & Dewi (2020)	*Jurnal Akuntansi Publik*	Internal control in BLUD	Qualitative	Weak internal audit function increases fiscal risk.
18	Pratiwi & Handoko (2021)	*Jurnal Administrasi dan Manajemen*	Puskesmas revenue management	Quantitative	Self-generated income contributes 40% of operational costs.
19	Zuhdi & Toyyib (2025)	*Jurnal Ekonomi Publik*	Governance reform	Policy analysis	Digital financial systems increase accountability.
20	Nasution et al. (2023)	*Jurnal Kinerja Aparatur Negara*	BLUD implementation barriers	Case study	Lack of financial literacy inhibits policy success.
21	Hidayat & Puspitasari (2020)	*Jurnal Pemerintahan dan Akuntansi*	Policy readiness of BLUD	Qualitative	Coordination failures among local agencies hinder budgeting accuracy.
22	Novita et al. (2021)	*Jurnal Akuntansi & Keuangan Publik*	Service sustainability index	Quantitative	Puskesmas BLUD show higher sustainability index than regular units.
23	Rahmanti et al. (2022)	*Jurnal Ilmu Pemerintahan dan Kebijakan Publik*	Governance model analysis	Case study	BLUD improves adaptability and patient responsiveness.
24	Aryani & Arifin (2024)	*Jurnal Kebijakan Fiskal*	Comparative study of BLUD and Non-BLUD	Mixed method	Non-BLUD centers less adaptive to financial shocks.

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No	Author(s) & Year	Journal / Source	Focus Area	Method	Main Findings
25	Nurlaili et al. (2023)	*Jurnal Pelayanan Kesehatan Masyarakat*	Service improvement post-BLUD	Quantitative	Positive link between fiscal autonomy and operational sustainability.

Key Empirical Patterns

Across the reviewed studies, 76% reported positive outcomes of BLUD financial management on financial efficiency and service continuity, while 24% reported neutral or mixed results. The most frequently reported outcomes include improved revenue utilization, increased operational flexibility, enhanced financial reporting practices, and improved service delivery performance.

Financial flexibility, particularly in managing capitation funds and non-tax revenues, was consistently reported as a dominant feature of BLUD implementation. Several studies documented increased efficiency in budget realization and operational spending following BLUD adoption.

Governance-related outcomes were reported less consistently. While accrual-based accounting and digital financial systems were noted in multiple studies, variations in reporting consistency and internal control effectiveness were observed across regions.

Service sustainability outcomes included improved patient satisfaction, enhanced service responsiveness, and higher sustainability index scores in BLUD-designated Puskesmas compared to non-BLUD units. These outcomes were reported more frequently in urban and resource-equipped settings.

Table 2. Thematic Synthesis of BLUD Financial Management Effects on Public Health Center Sustainability (2015–2025)

Theme	Indicators Identified in Literature	Empirical Evidence (%)	Representative Studies	Interpretation / Key Implications
Financial Autonomy & Flexibility	Direct use of revenue, decentralized budgeting, reinvestment in operations	80% of reviewed studies	Sutaryo et al. (2024); Wardani & Rahmah (2025); Pratiwi & Handoko (2021)	BLUD autonomy increases efficiency and speed in procurement, though requires strong internal financial literacy.
Accountability & Transparency	Accrual-based reporting, audit frequency, leadership supervision	68%	Zuhdi et al. (2025); Aryani et al. (2024); Sihombing & Dewi (2020)	Financial transparency improves post-BLUD, but disparities in reporting consistency remain across districts.
Operational Efficiency	Budget realization ratio, cost control, responsiveness to local needs	72%	Diskamara & Hidayat (2023); Christine et al. (2025)	Efficiency gains linked to flexible fund allocation and fewer administrative bottlenecks.
Governance and Internal Control	Internal audit presence, regulatory clarity, risk management	64%	Ngarawula & Rozikin (2024); Nasution et al. (2023)	Weak governance frameworks limit long-term sustainability; standardization needed.
Service Innovation & Sustainability	Service quality index, patient satisfaction, long-term financing	76%	Putri et al. (2024); Novita et al. (2021); Ramdani & Novita (2025)	BLUD implementation promotes service innovation and continuity, but uneven across regions.

DISCUSSION

Interpretation of Key Findings

The results demonstrate that BLUD financial management plays a significant but context-dependent role in supporting the sustainability of public health services in Indonesia. The predominance of positive outcomes confirms that financial autonomy enables Puskesmas to respond more flexibly to operational needs, particularly through direct revenue utilization and decentralized budgeting mechanisms.

These findings align with New Public Management (NPM) principles, which emphasize managerial autonomy and performance-based accountability as drivers of public sector efficiency. BLUD implementation reflects an institutional adaptation of these principles within Indonesia's decentralized health governance system.

Governance and Accountability Implications

Despite efficiency gains, the findings reveal that financial autonomy alone is insufficient to guarantee sustainable performance. Several studies indicate that weak internal control systems, limited financial literacy, and fragmented local regulations undermine accountability. This supports prior governance literature suggesting that decentralization may increase managerial discretion while simultaneously elevating fiscal risk when oversight capacity is weak.

The uneven adoption of accrual-based accounting and digital financial systems further explains disparities in transparency and reporting quality, particularly between urban and rural Puskesmas.

Comparison with Existing Literature

The results are consistent with international evidence indicating that fiscal decentralization in health systems improves service responsiveness but introduces governance complexity. Similar patterns have been reported in comparative studies on decentralized health financing, where performance improvements depend heavily on institutional maturity and leadership capacity.

Conversely, studies reporting mixed or negative outcomes highlight the presence of a governance paradox, whereby increased flexibility leads to inefficiencies in contexts with insufficient coordination and monitoring mechanisms.

Service Sustainability and Public Value

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From a Public Value Theory perspective, BLUD implementation contributes to service sustainability when financial autonomy is strategically reinvested to improve service quality and community responsiveness. Puskesmas that successfully translated financial flexibility into service innovation demonstrated higher patient satisfaction and operational continuity.

However, where leadership commitment and stakeholder engagement were weak, financial autonomy failed to generate sustained value, reinforcing the importance of cultural and managerial factors in public sector reform.

Study Limitations

This review is subject to several limitations. First, the majority of included studies were descriptive or case-based, limiting causal inference. Second, regional disparities in data quality and reporting standards may affect cross-study comparability. Third, the reliance on secondary data restricts the ability to assess long-term sustainability impacts quantitatively.

Implications for Policy and Future Research

The findings suggest that policy efforts should balance financial autonomy with standardized governance frameworks, capacity-building initiatives, and digital financial integration. Future research should prioritize longitudinal and comparative designs to examine causal pathways between BLUD financial management and service sustainability outcomes across diverse regional contexts.

CONCLUSION

The findings of this systematic review reveal that the implementation of BLUD financial management has a significant influence on the sustainability of public health center services in Indonesia. The reviewed evidence indicates that granting financial autonomy through the BLUD mechanism improves resource efficiency, facilitates innovation, and enhances service responsiveness when accompanied by transparent and accountable governance structures. However, the degree of effectiveness varies across regions due to differences in institutional readiness, leadership quality, and local fiscal capacity. Weak internal audit systems, non-standardized financial reporting, and uneven digital adoption remain challenges that can undermine accountability and fiscal control. Therefore, the impact of BLUD implementation should be understood as conditional, its success depends not only on regulatory compliance but also on managerial capacity and the maturity of local governance. This review also acknowledges limitations related to reliance on secondary data and possible underrepresentation of recent case studies from rural areas, which may restrict the scope of generalization.

To address these limitations and strengthen sustainability, future policy design should integrate BLUD financial autonomy with a standardized national accountability framework and digital based financial management systems. Regular capacity-building programs for health center managers and accountants should be institutionalized to ensure consistent application of accrual based reporting and internal control mechanisms. Policymakers are advised to establish measurable performance indicators linking financial efficiency with health outcomes, thereby aligning fiscal responsibility with service quality. For future research, combining econometric modeling with field-based institutional studies would provide deeper insights into causal relationships between financial governance and long-term health service sustainability.

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