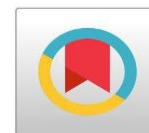


Effectiveness and Efficiency of Budgeting in Governance



Efektivitas dan Efisiensi Penganggaran dalam Tata Kelola Pemerintahan

Isma Fadillah^{1*}, Arif Zainudin², Agus Setio Widodo³

¹²³ Faculty of the Social Sciences and Political Science, Pancasakti University Tegal, Central Java

¹²³ Jl. Halmahera KM 01, Kota Tegal, 52121, Indonesia

Ismafadillah244@gmail.com^{1*}; Arifzainudin@upstegal.ac.id²; aguswidodo@upstegal.ac.id³;

Corresponding author: Ismafadillah244@gmail.com^{1*}

ARTICLE INFORMATION	
<p>Keywords Efficiency; Budgeting; Government; Governance;</p>	<p>ABSTRACT This study aims to comprehensively analyze the implementation, impact, and supporting and inhibiting factors of budget efficiency in governance, focusing on Indonesia, Singapore, and Argentina. The approach used is a Systematic Literature Review of publications from 2020–2025, which are analyzed bibliometrically to map the dynamics of fiscal policy, budget management methods, and institutional structures that affect the efficiency of public resource allocation. The results of the study show that Indonesia implements efficiency through austerity policies and budget transfers to priority programs, Singapore emphasizes flexible results-based reallocation supported by comprehensive digitalization, while Argentina prioritizes radical fiscal reform through spending cuts and bureaucratic restructuring. These policies have proven capable of improving fiscal indicators and increasing fiscal space, but at the same time they create trade-offs in the form of the risk of economic slowdown and significant social burdens if they are not balanced with protection for vulnerable groups. Limitations in this study that need to be acknowledged by the academic community. Operational studies on the budget policy implementation process are limited by the use of secondary data. Future research should use a mixed-method approach or more measurable quantitative analysis. The database should be expanded to include non-Scopus sources such as Google Scholar, SSRN, and official government policy</p>
<p>Kata Kunci Penganggaran; Efisiensi; Pemerintahan; Tata Kelola;</p>	<p>ABSTRAK Penelitian ini bertujuan untuk menganalisis secara komprehensif implementasi, dampak, serta faktor pendukung dan penghambat efisiensi anggaran dalam tata kelola pemerintahan, dengan fokus pada Indonesia, Singapura, dan Argentina. Pendekatan yang digunakan adalah tinjauan sistematis literatur dari publikasi tahun 2020–2025, yang dianalisis secara bibliometrik untuk memetakan dinamika kebijakan fiskal, metode pengelolaan anggaran, dan struktur institusional yang memengaruhi efisiensi alokasi sumber daya publik. Hasil penelitian menunjukkan bahwa Indonesia menerapkan efisiensi melalui kebijakan pengetatan anggaran dan alokasi anggaran ke program prioritas, Singapura menekankan alokasi ulang berbasis hasil yang fleksibel didukung oleh digitalisasi komprehensif, sementara Argentina memprioritaskan reformasi fiskal radikal melalui pemotongan belanja dan restrukturisasi birokrasi. Kebijakan-kebijakan ini terbukti mampu meningkatkan indikator fiskal dan memperluas ruang fiskal, namun pada saat yang sama menciptakan trade-off berupa risiko perlambatan ekonomi dan beban sosial yang signifikan jika tidak diimbangi dengan perlindungan bagi kelompok rentan. Keterbatasan dalam studi ini yang perlu diakui oleh komunitas akademik. Adalah, studi operasional mengenai proses implementasi kebijakan anggaran dibatasi oleh penggunaan data sekunder. Penelitian di masa depan sebaiknya menggunakan pendekatan campuran teknik atau analisis kuantitatif yang lebih terukur. Basis data harus diperluas untuk mencakup sumber-sumber non-Scopus seperti Google Scholar, SSRN, dan repositori kebijakan pemerintah resmi.</p>

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Introduction

The current government is focusing on budget management efficiency as a top priority in order to overcome complex fiscal challenges, particularly amid national deficit pressures and the need to maintain development continuity. In an increasingly complex global situation, the government faces the challenge of reducing waste while improving public outcomes. As agents of stability, governments have a major responsibility to manage public finances so that every expenditure has the maximum impact on society. Effectiveness, in this context, refers to the correlation between output and established goals (Devi Purnama Sari et al., 2023). Budget efficiency in global practice is an approach to public fund management that aims to obtain maximum benefits or results at minimal cost, thereby preventing waste and ensuring the achievement of optimal (Akidah Fitrah & Puji Handayati, 2022). The principles of budget efficiency internationally involve aspects of transparency, accountability, the use of technology to facilitate processes, and periodic performance evaluations to improve the quality of government spending and ensure the allocation of public funds in accordance with the priority needs of the community.

The concept of efficient budget management is closely related to public fund management strategies that aim to minimize waste, increase the effectiveness and productivity of government spending, and ensure the optimal use of resources to provide maximum benefits to the community (Sari et al., 2018). Budget efficiency has become a key indicator in evaluating the effectiveness of good governance (Imelda et al., 2024). Efficiency serves as one of the parameters in bureaucratic reform, whereby government agencies are expected to be able to provide fast, accurate, and quality public services at a reasonable cost, while striving to provide the best service in a transparent manner transparan (Djodi Setiawan & Kurnia Nur Ramdan, 2024). Achieving efficiency is a crucial element in the principle of good governance. In the context of state financial management, it acts as a mechanism to ensure that all public funds are managed responsibly and transparently.

In state financial management, efficiency does not only mean savings, but also includes the wise and targeted use of (Lona et al., 2023). Through performance-based budgeting and the digitization of financial systems such as SAKIP and SPAN, Indonesia emphasizes micro-level efficiency. Despite progress, issues such as subsidies and high employee costs still hinder the optimization of spending. Following Presidential Instruction No. 1 of 2025, which targets budget savings of Rp306.69 trillion, considerable attention is currently being paid to budget efficiency in Indonesia (Kementrian Sekretariat Negara Republik Indonesia, 2025). To reduce waste and increase the effectiveness of state spending,

this policy focuses on reducing ministry and agency spending and adjusting transfers to the regions (Fitrah & Handayati, 2022). The economic slowdown and lack of fiscal space have caused this policy to face many problems. This has hampered budget savings. This shows that in addition to the structural context of each country, effectiveness in budget efficiency is also influenced by the policy approach (Raden Mas Rachmanninditya Dwifarchan & Umi Sulistiyanti, 2023)

Argentina also implemented budget efficiency in its government by making massive cuts to ministry spending. Due to these massive cuts and a sharp decline in inflation (Panigo & Carrera, 2025), Argentina achieved a budget surplus for the first time since 2008. Real primary government spending fell by 35% compared to the previous year. This includes a significant reduction in pensions, which fell by 36%, and a reduction in economic subsidies for energy companies. In addition, Argentina has implemented integrated fiscal reforms to reduce significant fiscal deficits and ineffective economic subsidies. The goal is to make tariffs more in line with production costs, especially for higher-income groups. Argentina is also actively reducing bureaucracy in its government to improve effectiveness and efficiency (Garay et al., 2022). This process has resulted in a reduction in inefficient government departments and a more comprehensive improvement in public financial management (Rossi, 2020). Empirical data from the implementation of Argentina's budget deficit reduction, legislative oversight, and periodic audits ensure that the reforms are being used effectively. Results obtained: From 2005 to 2010, savings of ARS 50 billion (approximately USD 3 billion or IDR 45 trillion) were achieved, reducing the deficit from 5% of GDP to 2% of GDP. (Mohammed Haidar Al-senjari & Hussein Farhan Al-anzi, 2023).

Singapore has implemented budget efficiency in its government. This strategy, which focuses on the comprehensive use of technology to improve the efficiency, transparency, and accountability of state budget management, has achieved a successful implementation index. An integrated electronic system ensures that budget planning, budgeting, implementation, and monitoring are carried out in real-time (Galih et al., 2025a). Budget monitoring is strengthened through automated audit mechanisms and open data exposure to stakeholders (Adelia, 2024). Periodic audits supported by digital data quickly identify budget waste or irregularities (Dias, 2018). The efficiency achieved shows state budget savings of 30–40% without reducing the quality of public services. From a human resources perspective, this digital advancement helps government employees obtain accurate and comprehensive information, resulting in more accurate and evidence-based decision-making processes (Galih et al., 2025b). This supports the principles of good governance, which

include transparency, public participation, and public accountability in state financial management.

Indonesia, Singapore, and Argentina were selected as the subjects of this study because they represent a spectrum of contrasting yet complementary fiscal governance systems. Singapore is recognized as one of the countries with the most efficient budget management and lowest corruption rates in the world (Priono et al., 2025), while Indonesia, as a developing country with a complex fiscal decentralization system, still faces challenges of low quality public spending and optimization of regional budget absorption (Yulisfan Yulisfan et al., 2025), and Argentina offers critical lessons as a country that has repeatedly been trapped in fiscal crises due to structural deficits and long-term budget indiscipline (Santarcángelo & Padín, 2023). The urgency of this research is increasingly relevant given that Indonesia is currently implementing performance-based budgeting reforms that require comparative benchmarks from other countries, and because post-COVID-19 pandemic fiscal pressures have forced these three countries to undertake massive spending expansions that have direct implications for the efficiency and accountability of state financial management. Therefore, this study integrates the perspectives of public administration and fiscal policy in a contextual way to compare government budget efficiency in Indonesia, Singapore, and Argentina. It analyzes efficiency in terms of numbers and analyzes the role of governance structures in determining the quality of state financial management.

Literatur Review

Because it pertains to the government's capacity to make the best use of financial resources in order to provide efficient public services that have an influence on society, government budget efficiency is a key idea in public administration research. Theoretically, budget efficiency highlights the connection between the amount of money the government spends on the budget and the results that are generated, like advancements in community welfare, development, and public service quality. Numerous studies demonstrate that budgeting processes, institutional quality, and the bureaucracy's ability to oversee state finances all have a significant impact on the degree of public spending efficiency. Numerous studies demonstrate that budget management efficiency in the Indonesian setting still confronts difficulties, primarily as a result of variations in local governments' ability to manage budgets following the introduction of fiscal decentralization. On the other hand, due to its implementation of financial planning focused on long-term sustainability, budgetary

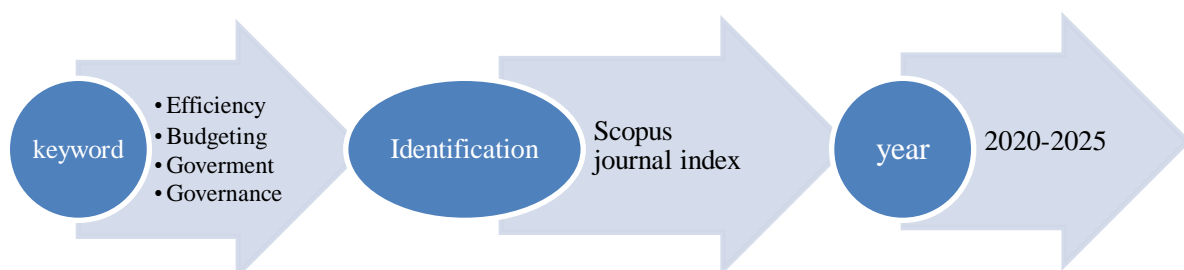
discipline, and transparency, Singapore is frequently regarded as an example of a nation with reasonably effective fiscal management. Argentina, on the other hand, had distinct dynamics as a result of fiscal deficits and economic pressures that forced the government to enact a number of policy changes to reduce state spending and boost budget efficiency. These variations demonstrate that the quality of governance and fiscal policies put in place in each nation have an impact on budget efficiency in addition to government spending levels (Uchkun Yunusovich et al., 2021).

Method

The study uses a descriptive qualitative approach with the Systematic Literature Review (SLR) technique to gain a thorough understanding of government budget efficiency through a synthesis of previous research results. The study does not focus on statistical testing, but rather on conceptual interpretations related to fiscal policy and budget management. Data dikumpulkan dengan mencari keywords seperti efficiency, budgeting, government, and governance in the Scopus database managed by Elsevier. The stages of analysis included literature reduction, theme grouping, and descriptive-comparative synthesis to find patterns, differences, and institutional factors that affect government budget efficiency. This gave a contextual interpretation of the dynamo.

The method design used in this study is Systematic Literature Review (SLR) (Wahba et al., 2023). By collecting relevant data from 2020 to 2025. This approach was used to systematically and comprehensively review the literature on factors that support and hinder budget efficiency. Through this approach, the study is expected to produce a comprehensive synthesis of findings and provide an empirical basis for strategies to improve budget efficiency in government administration.

Figure 1 Planning according to keyword criteria



Source: Analysis from Scopus

The data used in this study is secondary data obtained from previous literature reviews, including scientific articles and policy reports relevant to the research focus. Data selection criteria are based on relevance to the keywords Government, Government budget, Efficiency, Effectiveness. Literature sources were selected based on the credibility of the publisher or institution that published them, with priority given to those from 2020-2025. Literature The data sources were obtained from various scientific databases such as Scopus. They were then filtered using keywords and adjusted to the needs of the Budget Efficiency data. Data analysis in this study used a systematic literature review (SLR) (Varahrami & Novin Vajari, 2019) The bibliometric analysis tool Rstudio was used to explore the structure, development, and interaction among important documents. Rstudio was used as a tool for statistical analysis of tree diagrams, trend patterns, and visual clustering. Data processing steps included document selection, visualization creation, and keyword evaluation, despite limitations such as narrow literature coverage and possible bias. The assessment of co-occurrences and specific topics did not cover all important elements of complex relationships, which could affect the overall picture of the literature network. To evaluate the implementation of budget efficiency in government, with comparisons between Argentina, Indonesia, and Singapore. Meanwhile, SLR provides a comprehensive overview. review of the literature discussing the factors for success and obstacles in the implementation of budget efficiency in each country, covering aspects of budget planning, supervision, accountability, digitization, and bureaucratic reform. This approach allows for a comprehensive understanding of the sustainability and effectiveness of budget efficiency based on the social and policy contexts of each country.

Result and Discussion

Implementation and Dynamics of Efficiency

The implementation of budget efficiency in Indonesia is regulated by Presidential Instruction No. 1 of 2025, signed on January 22, 2025, which requires cuts to the state budget (APBN) and regional budget (APBD) amounting to Rp306.69 trillion (Kementrian Sekretariat Negara Republik Indonesia, 2025). These cuts consist of IDR 256.1 trillion in ministries and IDR 50.6 trillion in regional allocations, with an emphasis on 16 categories such as office supplies (Fatimah & Dwi Retnandari, 2024), which were cut by 90%, ceremonial events by 56.9%, and meetings and seminars by up to 45%. Singapore introduced the Budget 4.0 scheme through the consolidation of centralized resources, which provides flexibility in shifting funds from less important programs to urgent needs such as economic

change and social security, supported by cost-benefit analysis standards and periodic project evaluations (Mukherjee & Ho, 2025). Meanwhile, Argentina, under the leadership of President Javier Milei since December 2023, has implemented extreme reforms by closing nine ministries (Russian news agency, 2023) and dismissing 30,000 civil servants, thereby reducing overall fiscal expenditure by 31% in the first ten months (Deregulation and State Transformation Minister Federico Sturzenegger. | BLOOMBERG/ Pablo E. Piovano, 2024).

Efficiency dynamics in Indonesia pose a threat of economic slowdown due to capital expenditure cuts of Rp76.4 trillion and goods/services expenditure cuts of Rp179.7 trillion. This is exacerbated by criticism from LPEM FEB UI regarding planning that appears rushed amid the cabinet's expanding role, even though the SIPKD system contributes to increased transparency in local government. In Singapore, there is a dynamic of increased spending as part of gross domestic product to address global and social risks, but the country maintains fiscal balance in the medium term by conducting results-based evaluations that create high accountability (Kyiv et al., 2023). Argentina managed to record a primary fiscal surplus of 1.8% of gross domestic product for the first time since 2008, inflation fell from 300% to 100%, and positive GDP growth in the third quarter of 2024, but this also resulted in a poverty rate of 53% and unemployment of 7.7% as social impacts that must be accepted (Mugnolo, 2024).

Table 1 Aspects of Budget Efficiency Policy Comparison

Aspects	Indonesia	Singapore	Argentina
Main Approach	Cutting central government and regional spending	Outcome-based reallocation and evaluation	Mass layoffs and closure of institutions
Efficiency scale	Rp306 trillion (8.4% of state budget)	Flexible fund pool, aggregate limit	31% fiscal reduction
Initial Results	Productivity targets, slow risk	Balanced budget, social priorities	Fiscal surplus, inflation
Risks	Economic slowdown	Increased GDP expenditure	Rising poverty

Impact of efficiency

Positive impact of budget efficiency

Efficiency provides opportunities to divert funds to important programs such as infrastructure, health, and education, while minimizing waste and avoiding corruption-related leaks through the use of e-budgeting and e-procurement (Hevan Walizi, 2025). It also strengthens fiscal stability by reducing the deficit by up to 50% and minimizing dependence on foreign debt. Strict budget management contributes to sustainable economic growth through productive investment and creates a business climate that attracts investors, with strong fiscal reserves that provide protection from global shocks. Argentina achieved its first primary fiscal surplus of 1.8% of GDP since 2008, inflation fell from 300% to 100%, and GDP growth was positive in the second quarter of 2024 thanks to a 31% cut in fiscal spending.

Negative Impacts of Budget Efficiency

Budget cuts in Indonesia have resulted in uncertainty in fund allocation, a lack of transparency, and restrictions on spending in sectors such as tourism and education. This has also led to a decline in people's purchasing power, created uncertainty in investment, narrowed employment opportunities, and reduced labor productivity (Yulisfan Yulisfan et al., 2025). Singapore's strict fiscal policy has had a less strong cumulative impact on consumption in the short term, due to the high propensity to save among households and the limited number of households with access to credit. The absence of comprehensive social security worsens the reaction of consumption to income fluctuations. Javier Milei's drastic efficiency measures triggered a decline in economic activity, a reduction in public services, the suspension of infrastructure projects, and job losses for civil servants. Shock therapy policies also increased long-term unemployment and worsened income inequality (Pambudianti et al., 2020).

Achievement of budget policy efficiency (constraints hindering the implementation of efficiency)

The implementation of budget savings policies in Indonesia through Presidential Instruction No. 1 of 2025 has produced significant results, securing total savings of Rp306.69 trillion, equivalent to 8.4% of total state budget expenditure. These cuts consisted of IDR 256.1 trillion allocated to ministries and institutions (a 22.1% reduction) and IDR 50.6 trillion for regional transfers (a 5.5% reduction). This has effectively reduced the

primary fiscal deficit by nearly 50% and provided fiscal space to be redirected to national priority programs such as Free Nutritious Meals for 82 million children and pregnant women, critical infrastructure (Anguelov, 2021), and agricultural land development. This success not only improves the reputation of fiscal management in the eyes of international institutions such as the IMF and the World Bank but also strengthens short-term macroeconomic stability amid foreign debt pressures that have reached 40% of GDP.

Singapore, (Yang & Gu, 2021). Through its Budget 4.0 policy, has successfully maximized the allocation of S\$3 billion to the National Productivity Fund to support technological innovations such as artificial intelligence and quantum computing, accompanied by corporate tax incentives of up to 50% (maximum S\$40,000), which directly enhances global competitiveness while maintaining a medium-term structural fiscal surplus without compromising essential public services (Rizki et al., 2024). Argentina, under the leadership of President Javier Milei, recorded a historic achievement with a primary fiscal surplus of 1.8% of GDP for the first time since 2008 after a 31% cut in government spending in the first ten months, a decline in inflation from 300% to around 100%, (Meloni, 2022a) as well as positive GDP growth in the third quarter of 2024, demonstrating the effectiveness of shock therapy strategies in overcoming rampant bureaucratic inefficiency.

Factors Hindering the Implementation of Budget Efficiency

The main constraints in Indonesia stem from a wasteful and deeply rooted bureaucratic culture, where routine expenditures such as office supplies (ATK) have been cut by up to 90%, ceremonial activities account for 56.9%, and meetings/seminars account for 45%, all of which amounted to IDR 49 trillion in 2023. In addition, there is instability in policy due to cabinet reshuffles and the addition of special staff that enlarges the bureaucratic structure, as criticized by UGM expert Prof. Wahyudi Kumorotomo, together with LPEM FEB UI, who assessed that fiscal planning was carried out carelessly and contrary to its intended purpose (Yuliyanto et al., 2022). Difficulties in coordination between institutions, resistance from civil servants due to limited capabilities, and the impact on important sectors such as education (which was cut by Rp8 trillion) and public works infrastructure (70%) could disrupt basic public services, create multiple economic disruptions, and weaken the investment climate (Nabilah & Hernadi Moorcy, 2022).

On the other hand, Singapore only faces a minor challenge, namely an increase in spending as a percentage of GDP to address global geopolitical risks, although the existing results-based system reduces internal friction. Argentina, on the other hand, faces significant

challenges from social instability due to the mass dismissal of 30,000 civil servants as well as deregulation involving 380,000 regulations, which caused poverty rates to surge to 53% and unemployment to 7.7%, increasing the risk of political instability after the hyperinflation crisis (Meloni, 2022b).

Factors Supporting Budget Efficiency Implementation

Important supporting factors in Indonesia include political commitment demonstrated by the executive through Presidential Instruction No. 1/2025 signed by President Prabowo on January 22, 2025, (Putri & Salmah, 2025). The integration of digital systems such as SIPKD to increase transparency in regional management, and redistribution mechanisms that protect social support and labor-intensive programs, which overall accelerate the implementation of administrative savings without affecting employee salaries. Oversight from the Indonesian Ombudsman and global fiscal pressure also increase accountability in implementation. Singapore has highly advanced institutional infrastructure, including centralized resource management, cost-benefit analysis standards, (Rafif Nabil Protugus et al., 2025). And innovations in minimalist bureaucracy that allow for flexible redistribution between priorities without resistance from the bureaucracy (Rafif Nabil Protugus et al., 2025). Argentina took advantage of the political opportunity under Milei's leadership to implement structural shock therapy, which included the creation of a Ministry of Deregulation and State Transformation led by an economist from MIT, which accelerated the closure of 18 m ctorates (Afonso & Fraga, 2024).

Annual scientific production

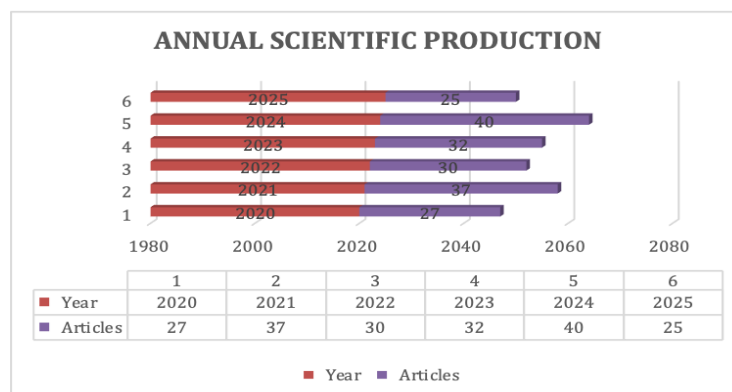


Figure 1 Annual scientific production

Source: analysis from Scopus

Based on Figure 1, which shows the development of articles published on the topic of budget efficiency, there has been an increase and decrease as seen in the data table above. The number of articles published in 2020 was 27. In 2021, there was a significant increase to 37 articles, indicating a surge in publication productivity. Entering 2022, the number of publications decreased slightly to 30 articles, but rose again in 2023 to 32 articles, so that publishing activity was relatively consistent at around thirty articles per year. 2024 was the year with the highest number of publications, reaching 40 articles, which illustrates the peak of productivity in the observation period. However, in 2025, the number of publications fell significantly to 25 articles, lower than in previous years. This decline may indicate challenges in the research or publication process, so it is necessary to analyze in more depth the factors that influenced this decline.

Countries Collaboration Subject

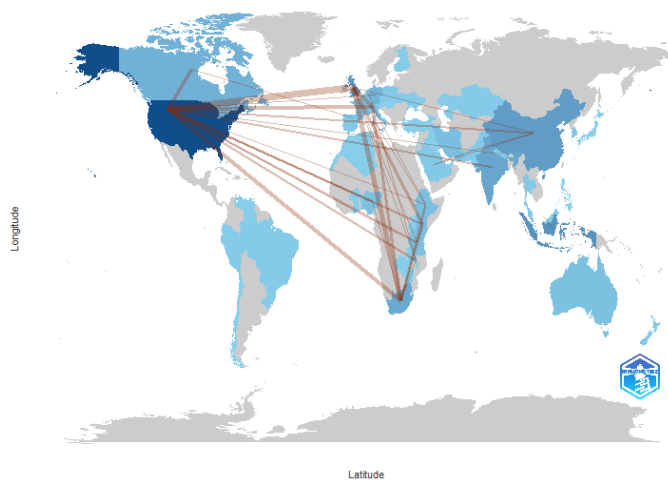


Figure 2 Countries Collaboration Subject

Source: analysis from Scopus

Figure and Table 2 show the network of collaboration between countries related to the topic of Government Budget Efficiency. The world map shows the distribution of countries involved in scientific collaboration with other countries. They are marked with two different colors. The darker blue color indicates countries with high levels of publication and collaboration, while the lighter blue color indicates countries with low publication levels; the brighter the color, the lower the publication level of that country.

Table 2 Frequency figures between countries

From	To	Frequency
ALGERIA	IRAQ	43,7435315
AUSTRALIA	THAILAND	101,002881
BELGIUM	BENIN	2,32785254
BELGIUM	NETHERLANDS	5,28144793
BRAZIL	FRANCE	-2,76172945
BURKINA FASO	UGANDA	32,3690797
CANADA	BRAZIL	-53,0978311
CANADA	FINLAND	26,2746656
CANADA	FRANCE	-2,76172945

Source: analysis from Scopus

Referring to the frequency figures listed in the “From–To–Frequency” table, the relationship between Australia and Thailand ranks highest with a frequency of approximately (101.002881). This indicates that collaboration between these two countries has the most significant volume and intensity in the context of the article on budget efficiency in the data. Next are Burkina Faso and Uganda with a frequency of around (32.3690797), followed by Canada and Finland with a frequency of around (26.2746656), and Algeria and Iraq with a frequency of around (43.7435315). This shows the existence of a fairly solid publication network, although not as strong as the Australia-Thailand collaboration. On the other hand, relationships with low frequencies, such as Belgium and Benin at around (2.32785254), and Belgium and the Netherlands at around (5.28144793), show limited collaborative contributions. Meanwhile, the negative frequency values that appear, for example between Brazil and France, as well as Canada and Brazil, can be understood as a manifestation of weak or unbalanced relationships, so that the collaborative contribution of these two countries to the literature on budget efficiency is very small when compared to other country pairs that show high positive frequencies.

Subject Collaborations

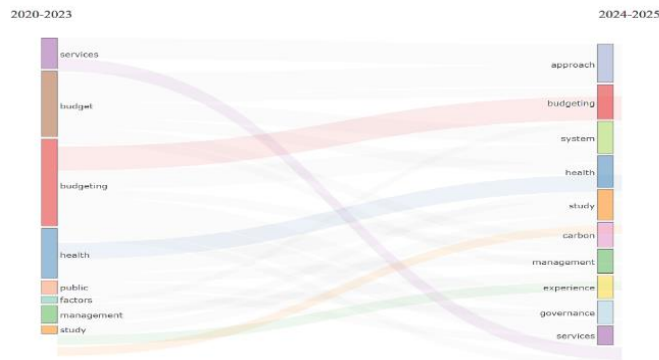


Figure 3 Subject Collaborations

Source: analysis from Scopus

Figure 3 shows the results of thematic evolution, indicating the development of research on government budget efficiency from early 2020 to the latest findings in 2024-2025. In the early stages, the most frequently appearing themes consisted of budget, budgeting, health, public services, management, factors, and studies. This shows that the focus of research was on the allocation and management of public budgets, especially in the health and basic services sectors, as well as various factors that affect their efficiency in providing services to the community. Over time, the themes studied shifted and deepened towards strategy and governance, as evidenced by the emergence of keywords such as systems, governance, approaches, experiences, and carbon, while still maintaining the themes of budgeting, management, health, studies, and services. This change shows that research now focuses not only on measuring budget efficiency at the operational level, but also shifts to analyzing systems and governance in budgeting, managerial approaches adopted by the government, user experiences, and the impact of budget efficiency on sustainability issues such as carbon emissions management. Thus, overall, this thematic evolution illustrates a transition from sectoral budget efficiency studies to more comprehensive and strategic government budget efficiency studies, with an emphasis on governance.

Co-occurrence Network

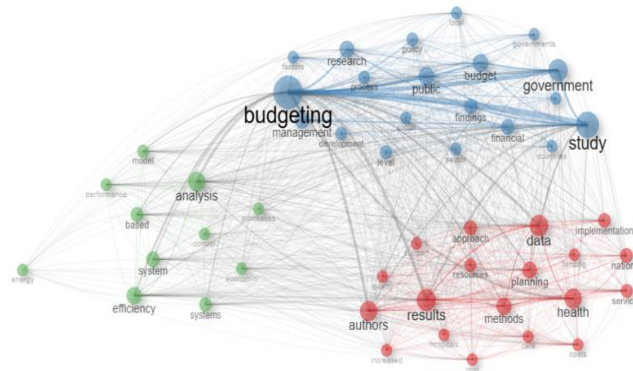


Figure 4 Co-occurrence Network
Source: analysis from Scopus

The Co-occurrence Network visualization in Figure 4 depicts three interacting clusters and maps research centers on the effectiveness of government budgets. The blue cluster focuses on the terms budgeting, government, public, policy, and studies, indicating the dominance of studies on the budgeting process in the public sector and its relationship to policy design and governance. The close connections around the budgeting node imply that effectiveness is seen as the result of planning and budgeting in line with policy objectives and good governance practices in government agencies. The green cluster highlights the terms efficiency, system, analysis, model, performance, and process, reflecting a methodological approach to measuring efficiency through a systems perspective and performance evaluation. The relatively large size of the analysis and system nodes, as well as their connections to models and performance, indicate that this study places analytical instruments—such as performance indicators, evaluation models, and process frameworks—as prerequisites for detecting waste and optimizing budget outcomes. In bibliometric literature, co-occurrence clusters such as this do indeed indicate groupings of terms that frequently appear together due to similar keywords and metrics. The red cluster focuses on outcomes, data, planning, methods, health, and services, emphasizing outcome evaluation and data utilization in the public service sector. The density of the relationship between outcomes–data–methods indicates an evidence-based orientation in assessing whether budget allocations improve service quality, for example in the health sector, and how planning and implementation affect the cost efficiency of services. Previous bibliometric findings show that co-occurrence analysis is often used to map the interrelationships between outcomes–data–methods as the end of the policy–budget cycle. The relationships between

clusters show a complete conceptual path: the budgeting and policy processes in the blue cluster are upstream; the analytical tools and systems in the green cluster provide evaluation mechanisms; and data-based outcome measurement in the red cluster is downstream, assessing the actual efficiency of public services. In other words, budget effectiveness is positioned as a function of the alignment between government budget planning, analytical capacity and performance information systems, and program outcome validation using empirical data. This pattern of interconnection is consistent with the use of co-occurrence networks to interpret dominant themes and interdisciplinary knowledge flows in public administration and policy studies.

Thematic Map

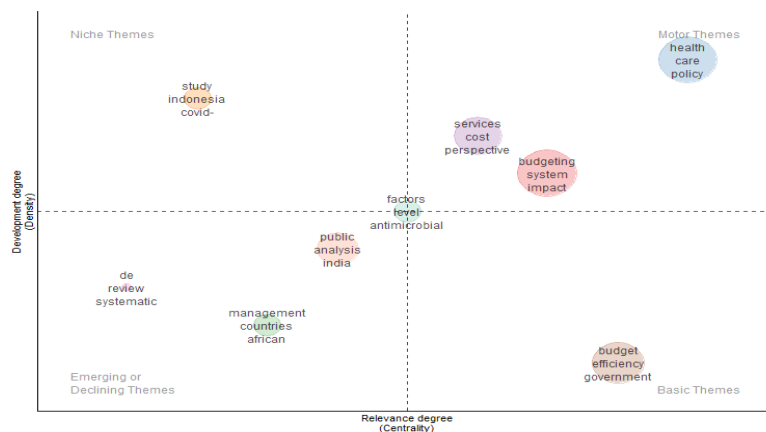


Figure 5 Thematic Map
Source: analysis from Scopus

This thematic map illustrates elements of government budget efficiency in four quadrants based on two parameters: relevance (centrality) on the horizontal axis and theme development (density) on the vertical axis. The further to the right, the more significant a keyword is as a connector in the overall literature; the higher its position, the more mature and intensive the theme is in its development. In the Motor Themes quadrant (top right), a collection of keywords such as health-care-policy, services-cost-perspective, and budgeting-system-impact indicate elements that are central and advanced in their development. This narrative indicates that budget efficiency is primarily driven by: effective budgeting systems, transparent service cost measurement, and sector policies (especially in health) that demand clear cost-benefit evidence. In this area, efficiency is understood as the capacity of the budget system to generate service impact at a controlled cost. The Basic Themes quadrant (bottom right) covers budget-efficiency-government, which serves as the conceptual basis. This theme is highly relevant to all fields, but its depth is scattered across various studies. This

shows that the core factor of efficiency is the integration of the budget framework, government functions, and efficiency objectives as basic principles of governance; from this, further themes (service costs, budgeting systems, sector policies) develop. The Niche Themes quadrant (top left) presents study-indonesia-covid-, a mature contextual focus that is not central to the overall literature. Efficiency factors here are highly contextual—for example, the adaptation of budget procedures and policy communication in emergency conditions—which deepen understanding of efficiency but do not make it a cross-cutting theme.

The Emerging/Declining Quadrant (bottom left), such as management-countries-african and review-systematic, reflects elements that are still developing or less popular. This theme indicates research opportunities to strengthen cross-country managerial aspects and an emphasis on methodological standards (systematic review) to assess efficiency more comparatively. Overall, the narrative about efficiency factors implied by the map is: (1) governance-budget-efficiency foundations that establish principles and accountability; (2) budgeting system instruments, service cost measurement, and sector policies as the main drivers of efficiency; (3) contextual learning (e.g., Indonesia-Covid-19) that enriches practice; and (4) managerial and methodological areas that need to be strengthened so that efficiency evaluations are more integrated and comparable.

Conclusion

Effective budget management is a vital element in strengthening financial conditions and improving the government's ability to provide quality public services despite limited fiscal resources. Governments that successfully manage their budgets tend to be more efficient in directing spending towards priority programs that have a truly positive impact on economic and social progress and the overall welfare of society. However, a number of studies show that achieving effective spending depends heavily on many factors, such as the quality of performance-based planning and budgeting, human resource capabilities, transparency and accountability systems, and adequate institutional design and governance. There is still a gap between the concept of efficiency and its actual implementation, which is a major challenge, especially in local governments that lack administrative infrastructure, adequate data, and fully consistent regulatory support.

Bibliometric study and comparison of budget effectiveness in the public administration of Indonesia, Singapore, and Argentina shows that successful efficiency is highly dependent on a combination of structural changes, the use of digital technology, and

performance-based monitoring. For example, Indonesia managed to save IDR 306.69 trillion thanks to Presidential Instruction No. 1/2025, Singapore flexibly adjusted its Budget 4.0, while Argentina cut state spending by 31 percent, resulting in a primary surplus of 1.8 percent of GDP. In general, budget efficiency does create savings in the state treasury, but it also has impacts such as slowing economic growth in Indonesia and increasing poverty rates to 53 percent in Argentina. This emphasizes the need for support such as political will and digital tools to mitigate these negative effects.

This study has a number of advantages. First, by avoiding partial or solely domestic study, the cross-country comparative approach offers a more comprehensive knowledge of the dynamics of budget efficiency. Second, this study combines governance studies with public finance viewpoints, allowing the analysis to take institutional and political factors into account in addition to fiscal indicators. Third, a more thorough identification of the structural elements influencing variations in budget efficiency levels is made possible by the choice of three nations with distinct economic traits and governance structures. However, there are a number of limitations to this study that should be recognized in the academic community. First, the operational level study of the budget policy implementation process is limited by the use of secondary data. Second, it is important to use caution when extrapolating conclusions from comparisons since historical background, political culture, and economic structure variations among nations might affect the outcomes. Third, this research focuses on macro-fiscal analysis rather than closely examining micro-aspects like the effectiveness of particular sectoral initiatives or their direct influence on public welfare.

Therefore, to improve empirical validity and broaden the study's reach, future research should create a mixed techniques approach or more quantifiable quantitative analysis. The database should be expanded to include non-Scopus sources like Google Scholar, SSRN, and official government policy repositories; quantitative techniques like panel data regression or Data Envelopment Analysis (DEA) should be used to measure budget efficiency levels between countries empirically and comparatively; and the object of study should be expanded to include other comparable ASEAN nations like Malaysia and Thailand so that the findings.

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