GOVERNANCE QUALITY, REVENUE AUTONOMY, AND FISCAL SUSTAINABILITY: INSIGHT FROM EAST JAVA INDONESIA

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Abstract

This study evaluates fiscal management effectiveness and efficiency across region in East Java, Indonesia, particularly for Kota Surabaya and Kabupaten Bangkalan. Employing a quantitative approach, the research analyzed data from 2015 to 2024, including regional revenue (PAD), effectiveness ratios, efficiency ratios, and advanced forecasting techniques using Double Exponential Smoothing with Damped Trend models. Results revealed considerable variations among regions. Kota Surabaya exhibited superior fiscal performance, characterized by effective revenue realization and optimal budget utilization. Conversely, Kabupaten Bangkalan faced severe fiscal inefficiencies and limited revenue autonomy, highlighting significant institutional and governance deficits. These findings underscore the critical role of governance quality and institutional capacity in achieving sustainable fiscal management. This research significantly enhances the literature by providing detailed empirical insights into regional fiscal performance and proposes strategic recommendations for improved fiscal governance and policy interventions.

Keywords: Fiscal; budget, effectiveness; efficiency; governance

INTRODUCTION

Efficient and effective regional budget management is a cornerstone of sustainable economic growth, development, and governance quality. Public sector budgeting is critical in translating fiscal resources into tangible economic and social outcomes, directly impacting local government performance and regional development. With increasing fiscal decentralization globally, local governments have assumed greater autonomy and responsibility for budget management. This decentralization aims to promote economic efficiency, enhance public service quality, and ensure responsive governance tailored to local contexts. However, significant disparities persist among regions, notably in developing countries, where institutional capacity, governance quality, and financial management vary considerably. Understanding these variations is essential for developing targeted policies to optimize fiscal outcomes and support sustainable regional development. Recent literature has confirmed that governance quality significantly influences the effectiveness and efficiency of fiscal management within decentralized systems (Alonso & Andrews, 2018; Simone et al., 2019).

The literature extensively discusses the relationship between governance quality and fiscal management efficiency. Musgrave and Musgrave (2012) highlight that efficient allocation and utilization of fiscal resources constitute fundamental principles of effective public sector governance. Efficiency in public sector budgeting implies achieving desired outputs with minimal wastage of resources, reflecting good governance and institutional capacity. Recent studies emphasize performance-based budgeting as an effective strategy to enhance efficiency. Shin et al. (2020) demonstrate that adopting performance-based budgeting significantly improves public expenditure efficiency by linking resource allocation to measurable performance outcomes. Similarly, Halaskova et al. (2018) argue that budgeting reforms alone are insufficient without corresponding institutional strengthening and integrated planning frameworks. These findings underscore the importance of robust institutional frameworks, transparent governance, and performance-oriented budgeting practices for enhancing fiscal management efficiency. Furthermore, research shows that high-quality governance, characterized by transparency and accountability, reduces the likelihood of corruption and mismanagement, thereby enhancing fiscal efficiency (Rocha et al., 2025; Prijaković, 2022; Montes et al., 2019). Conversely, inadequate governance can exacerbate inefficiencies, especially in regions with low fiscal capacity or high deprivation (Xu & Warner, 2021).

Moreover, decentralization policies are widely recognized as crucial determinants of local fiscal performance. Fiscal decentralization theoretically enhances economic efficiency and accountability by aligning public service provision with local preferences and resources. Ouertani et al. (2018) identify significant inefficiencies in local government spending, particularly in regions with weak fiscal capacity and institutional structures. Such inefficiencies result in misallocated resources and diminished public service quality, undermining the potential benefits of decentralization. Further, Afonso et al. (2021) emphasize the critical role of consistency in implementing result-oriented budgeting practices, highlighting the significance of sustainable fiscal management reforms. These insights collectively suggest that effective fiscal decentralization requires supportive institutional frameworks and sound fiscal policies tailored to regional contexts. Recent trends across developing countries confirm both the opportunities and the persistent challenges in decentralization efforts, such as fiscal capacity inequality and central government dominance (Arends, 2020; Xu & Warner, 2021; Nabieu et al., 2021). The COVID-19 pandemic has further intensified the need for efficient and adaptive spending frameworks to mitigate fiscal shocks (Obeidat et al., 2022).

In addition, local fiscal independence, measured by the proportion of local revenue generated independently (PAD - Pendapatan Asli Daerah), plays a significant role in achieving effective and efficient regional budget management. Regions with high local revenue generation typically exhibit greater fiscal autonomy, enabling tailored budgeting strategies that reflect local priorities. Conversely, regions heavily reliant on central government transfers often face limited flexibility in fiscal management, which may result in suboptimal allocation of resources and limited accountability. Zhang et al. (2023) and Tirtosuharto (2022) indicate that institutional quality, local investment climate, and revenue collection effectiveness significantly influence PAD growth. Therefore, enhancing local fiscal capacity through improved revenue collection strategies and institutional reforms emerges as a pivotal factor for successful regional budget management. In the Indonesian and broader ASEAN context, revenue autonomy has evolved significantly post-decentralization reforms, although it remains constrained by tax base limitations and bureaucratic challenges (Strow & Strow, 2018).

Despite the theoretical clarity regarding effective fiscal management strategies, empirical evidence indicates substantial variations in fiscal management performance across regions. In Indonesia, for example, diverse regional contexts have exhibited significantly different levels of fiscal effectiveness and efficiency. Regions such as Surabaya and Sidoarjo have consistently demonstrated high fiscal management performance, characterized by optimal effectiveness and relatively high efficiency. These regions leverage strong institutional capacities, effective governance practices, and performance-based budgeting systems. Conversely, regions such as Bangkalan and Lamongan persistently face substantial inefficiencies and low local revenue generation capacities. This regional heterogeneity highlights the complexities and multifaceted nature of fiscal management practices, necessitating nuanced policy interventions.

This study builds on existing literature by specifically investigating the effectiveness and efficiency of budget management across regions within the Gerbangkertosusila area of Indonesia. The region offers a unique setting due to significant heterogeneity in fiscal management performance, reflecting variations in institutional capacity, governance quality, and local fiscal independence. Previous literature has not extensively explored regional variations within this specific context, highlighting a notable research gap. Addressing this gap can provide targeted insights for policymakers to implement nuanced fiscal management strategies tailored to local contexts. Therefore, this study aims to examine critical determinants influencing regional budget management effectiveness and efficiency in the Gerbangkertosusila region. It contributes novel insights by explicitly analyzing regional disparities and identifying key institutional and governance factors influencing fiscal performance. By focusing on fiscal performance variations across six municipalities and districts over a ten-year period (2015-2024), this research addresses existing empirical gaps. The novelty of this study lies in its targeted analysis of regional variations and comprehensive assessment of fiscal management strategies. The research specifically contributes to the literature on regional fiscal governance, providing valuable policy implications to enhance local fiscal autonomy, improve governance quality, and optimize fiscal efficiency and effectiveness.

LITERATURE REVIEW

Public finance fundamentally determines the extent to which a country can achieve its economic and social goals. Musgrave and Musgrave (2012) emphasize that public finance encompasses the allocation of fiscal resources and the measurement of fiscal performance, particularly in decentralized fiscal systems. Effective financial management within regional governments is pivotal for translating fiscal inputs into meaningful outputs and outcomes. According to Rosen and Gayer (2008), fiscal decentralization not only involves fiscal resource distribution across government levels but also necessitates rigorous evaluation of regional financial performance, including assessments of budget effectiveness and efficiency.

Effective regional budgeting begins with comprehensive planning. Wirawan et al. (2015) argue that optimal planning should integrate social and economic conditions along with regional fiscal capacity. This approach serves as the cornerstone in aligning budgeting processes with development objectives, thus ensuring that fiscal resources address the most pressing local needs effectively. Therefore, meticulous planning directly correlates with the efficiency and effectiveness of subsequent fiscal implementations.

In the context of budgetary effectiveness and efficiency, structural aspects of government expenditure play a significant role. Koromath (2020) finds that inefficient budget management in Manokwari District is largely attributable to the dominance of indirect expenditures, such as personnel and social assistance costs. While overall budget effectiveness might remain adequate, inefficient allocation impedes achieving optimal fiscal outcomes. Thus, budget structures substantially influence fiscal performance, underscoring the necessity for strategic and outcome-oriented expenditure frameworks. Effectiveness in public budgeting extends beyond mere financial ratios to include the achievement of tangible program outcomes. Lestari et al. (2020) highlight this perspective in their study on village fund management in Klungkung, where although financial ratios indicated 100% effectiveness, actual program realization reached only 90%. This finding emphasizes that true fiscal effectiveness should encompass both financial execution and the attainment of developmental and service delivery goals. Thus, comprehensive effectiveness assessment requires integrating financial and non-financial performance measures.

Transparency and accountability in fiscal governance further bolster public budget efficiency. Halaskova et al. (2018) underscore the critical impact of government size, internal oversight systems, and fiscal accountability on public expenditure efficiency within European Union countries. Their findings suggest that smaller, more transparent governments typically exhibit superior efficiency. This insight aligns with broader institutional reform needs, especially in Indonesian regions characterized by complex and extensive bureaucratic structures, thereby highlighting transparency and accountability as essential elements for enhancing fiscal management efficiency. Performance-based budgeting emerges as an effective tool for improving expenditure efficiency through result-oriented financial management. Shin et al. (2020), in their comparative study of South Korea and OECD countries, demonstrate that budgeting focused on results and cross-sector performance evaluation significantly enhances efficiency. Adopting similar approaches within regions such as Gerbangkertosusila can potentially enhance spending quality and accountability, reinforcing the value of linking budgeting processes explicitly to measurable outcomes.

Empirical studies have extensively explored the practical application of budgeting theories, highlighting structural and contextual factors affecting budget management efficiency. For instance, Koromath's (2020) research in Manokwari demonstrates how expenditure structures dominated by indirect costs compromise overall budget efficiency, despite maintaining adequate effectiveness levels. Similarly, Lestari et al. (2020) indicate that effectiveness in fiscal management should not solely rely on financial ratios but also consider the actual realization of development programs, revealing a broader perspective on measuring fiscal performance. Halaskova et al. (2018) further elucidate that efficient public spending in the EU context is closely linked to streamlined government structures, robust internal control mechanisms, and high fiscal accountability. Countries adopting smaller and more transparent government models consistently outperform larger bureaucratic entities in terms of efficiency. These insights suggest significant potential for regions in Indonesia to enhance efficiency through institutional reform and governance optimization.

Performance-based budgeting practices, as investigated by Shin et al. (2020), present empirical evidence of improved expenditure outcomes. By comparing public expenditure practices between South Korea and OECD countries, the authors affirm the effectiveness of result-oriented budgeting and cross-sector performance evaluation systems in elevating efficiency. This empirical evidence supports the practical applicability of such budgeting frameworks within regional contexts in Indonesia, suggesting considerable scope for improving public financial management practices. Furthermore, Meleddu and Pulina (2018) examined public spending efficiency within renewable energy sectors in Italy, revealing superior efficiency outcomes in regions employing pro-environment fiscal policies. Their research highlights the importance of integrating sectoral priorities into broader fiscal management strategies. Given environmental and energy concerns in regions like Gerbangkertosusila, such integrative fiscal strategies could significantly enhance both fiscal and environmental outcomes.

Several empirical solutions have been proposed to address fiscal management inefficiencies. Charles et al. (2022) advocate for a two-stage budgeting model designed to enhance accountability within public sectors. This model emphasizes initial broad resource allocation followed by detailed, outcome-oriented budgeting. Additionally, fiscal reform strategies such as spending reviews and zero-based budgeting, extensively analyzed by Halaskova et al. (2018) and Meleddu and Pulina (2018), have proven effective in improving fiscal efficiency across various advanced economies, underscoring their potential applicability within Indonesian regional contexts. Institutional and geographical factors significantly influence fiscal efficiency in Indonesia, as identified by Tirtosuharto (2022). His research concludes that variability in regional budget performance stems largely from differences in local fiscal capacities and governance frameworks. Complementary findings from Ouertani et al. (2018) further confirm institutional weaknesses as primary contributors to inefficiencies in strategic sectors like education and health, reinforcing the critical need for capacity-building initiatives within regional governance structures.

RESEARCH METHODS

This study employs a quantitative research approach to analyze the effectiveness and efficiency of regional budget management in the Gerbangkertosusilo region, comprising Kabupaten Gresik, Kabupaten Bangkalan, Kabupaten Mojokerto, Kota Surabaya, Kabupaten Sidoarjo, and Kabupaten Lamongan. The region was selected due to its significant role in industry, commerce, and transportation within East Java and Indonesia. Additionally, Gerbangkertosusilo's relatively advanced infrastructure considerably impacts regional economic growth, rendering it an ideal setting for evaluating regional fiscal management practices (Musgrave & Musgrave, 2012; Rosen & Gayer, 2008). However, this study only focused on Kabupaten Bangkalan and Kota Surabaya.

The analysis period spans from 2015 to 2024, providing an extensive temporal scope to identify and understand long-term trends and patterns in regional budget management. Data was primarily sourced from Local Government Financial Reports (*Laporan Keuangan Pemerintah Daerah* - LKPD) and Regional Budget documents (APBD). These documents provided comprehensive information on regional fiscal performance, specifically focusing on Regional Original Revenue (*Pendapatan Asli Daerah* - PAD). PAD represents revenues independently collected by regional governments according to applicable local and national regulations, serving as a critical indicator of fiscal autonomy (Tirtosuharto, 2022). Best practices for evaluating such data include comparative benchmarking, adjusting for socio-economic context, and integration with qualitative insights (Slijepčević, 2019; Yadava & Neog, 2019).

To ensure comprehensive insights, the study adopts a forecasting method, specifically Double Exponential Smoothing (DES) with a Damped Trend model, to project future fiscal performance. This model is particularly suited to financial data characterized by stable trends interspersed with fluctuations due to macroeconomic factors or national fiscal policies. DES is preferred in public finance contexts for its ability to adapt to structural changes in revenue and expenditure patterns without overfitting noise (Prijaković, 2022; Ross & Mughan, 2016):

$$S_t = \alpha X_t + (1-\alpha)(S_{t-1} + \emptyset T_{t-1}) T_t = \beta(S_t - S_{t-1}) + (1-\beta)\emptyset T_{t-1}$$

$$Y_{t+m} = S_t + \sum_{i=1}^{m} \emptyset^i T_t$$

where:

- X_t : Actual data for period t
- S_t : Level value for period t
- T_t : Trend value for period t
- α, β : Smoothing parameters between 0 and 1
- Y_{t+m} : Forecast for *m* periods ahead
- *m* : Number of periods forecasted
- $\emptyset$: Damped forecast parameter

The accuracy of the forecasting model was evaluated using the Mean Absolute Percentage Error (MAPE), a widely recognized accuracy measure in forecasting. A MAPE value below 5% indicates a high level of forecasting accuracy, suggesting reliable predictive capability for regional fiscal planning and management. In recent public sector applications, MAPE has been widely adopted due to its interpretability and ease of communication, especially when supported by complementary metrics such as RMSE and Theil's U (Rupérez et al., 2019; Ramage et al., 2021).

RESULTS AND DISCUSSION

The analysis conducted in this study reveals significant variations in regional fiscal management capabilities within Kota Surabaya and Kabupaten Bangkalan reflecting the necessity for tailored institutional and strategic interventions. These patterns align with previous empirical findings that regional disparities in fiscal performance are closely linked to differences in governance quality, revenue autonomy, and socio-economic conditions (Slijepčević, 2019; Chalil, 2020). DEA-based evaluations have shown metropolitan areas tend to perform better due to stronger institutional frameworks and administrative capacity (Zulham et al., 2024).

Kota Surabaya demonstrated superior fiscal performance, with effectiveness ratios consistently approaching or exceeding 100%, indicative of high budget realization capacity aligned with planned targets. Surabaya also recorded commendable efficiency, with ratios frequently below 110%, reflecting optimal budget utilization and minimal wastage (Rosen & Gayer, 2008). Table 1. outlines the forecasting results for Kota Surabaya using the Double Exponential Smoothing method. Forecasting accuracy, measured via the Mean Absolute Percentage Error (MAPE), ranged from 2.47% to 12.14%, suggesting reliable forecasting models. Projections indicate stable growth, with PAD reaching Rp6,209.77 billion by 2027, reinforcing Surabaya's status as a regional fiscal benchmark. This supports broader literature showing that regions with high governance capacity often outperform others in both revenue collection and spending efficiency (Mohanty & Bhanumurthy, 2020; Ferrara & Nisticò, 2019).

Table 1. Forecasting Result using Double Exponential Smoothing: Kota Surabaya

No.	Variables	*Forecasting*			
		Alpha (α)	Beta (β)	Damping (ϕ)	MAPE (*Mean Absolute Percentage Error*)
1	Revenue	0.000113	0.000113	0.976109	5.282042
2	Expenditure	0.0001	0.0001	0.972800	5.123247
3	Gross Regional Domestic Product	0.0001	0.0001	0.975295	2.474559
4	PAD	0.0001	0.0001	0.962937	12.1427431

No.	Variables (in billion Rp.)	*Forecasting*		
		2025	2026	2027
1	Revenue	9899,963	10165,073	10423,849
2	Expenditure	9877,535	10124,999	10365,733
3	Gross Regional Domestic Product	482874,1	496005,4	508812,3
4	PAD	5985,193	6099,6	6209,767

Kota Surabaya stands out prominently in terms of fiscal management efficiency and effectiveness. Its consistent performance, characterized by effectiveness ratios that closely approximate or exceed 100%, aligns with Rosen and Gayer's (2008) assertions that regions with robust fiscal capacities can achieve sustained fiscal stability. Surabaya's budgeting practices, which emphasize strategic expenditure and effective revenue mobilization, have provided substantial fiscal autonomy and flexibility. The city's capacity to consistently maintain expenditure efficiency, indicated by ratios frequently below 110%, further validates Musgrave and Musgrave's (2012) framework, which underscores efficient allocation and utilization of fiscal resources as critical to achieving economic and social objectives. Surabaya's advanced infrastructure, institutional capability, and governance practices evidently facilitate robust budget management and efficient utilization of fiscal resources. This aligns with Alonso and Andrews (2018), who argue that transparency and accountability mechanisms embedded in local institutions enhance revenue mobilization and service delivery outcomes.

Kabupaten Bangkalan consistently encountered substantial fiscal challenges, evidenced by notably poor expenditure efficiency. Efficiency ratios remained alarmingly high (1046.7% in 2015 and 641.5% in 2024), signaling significant resource wastage. PAD stagnated at low levels, emphasizing a heavy reliance on central government transfers. Forecasting results (Table 2) indicated stable but minimal growth in PAD (Rp404.60 billion by 2027), highlighting the urgent need for institutional strengthening to improve fiscal performance, in line with Ouertani et al.'s findings (2018) regarding the detrimental impact of weak institutional capacity. The case of Bangkalan reflects broader patterns in fiscal underperformance in low-governance areas, where poor administrative systems hinder effective public spending (Amusa & Fadiran, 2024; Chalil, 2020).

Table 2. Forecasting Result using Double Exponential Smoothing: Kabupaten Bangkalan

No.	Variables	*Forecasting*			
		Alpha (α)	Beta (β)	Damping (ϕ)	MAPE (*Mean Absolute Percentage Error*)
1	Revenue	0.0001	0.0001	0.967384	4.04200
2	Expenditure	0.0001	0.0001	0.971845	2.51399
3	Gross Regional Domestic Product	0.0001	0.0001	0.977923	2.81873
4	PAD	0.0001	0.0001	0.977284	13.85694

No.	Variables (in billion Rp.)	*Forecasting*		
		2025	2026	2027
1	Revenue	2410,855	2452,847	2493,469
2	Expenditure	2426,748	2470,828	2513,666
3	Gross Regional Domestic Product	29238,56	30087,24	30917,18
4	PAD	372,8121	388,8907	404,6042

Kabupaten Bangkalan illustrates substantial challenges in achieving both fiscal efficiency and effectiveness, underscored by persistently high expenditure inefficiencies and minimal growth in PAD. Such performance aligns closely with Ouertani et al.'s (2018) conclusions, which pinpoint weak institutional capacity as a primary contributor to poor fiscal outcomes. Bangkalan's reliance on external fiscal transfers rather than robust internal revenue generation underlines severe constraints in achieving sustainable fiscal management. Future fiscal strategies must prioritize enhancing institutional governance capacities, reinforcing local revenue mobilization efforts, and adopting more stringent budget control mechanisms to transition from dependency to sustainable fiscal autonomy. The case supports Wardhani et al. (2017), who show that expenditure efficiency significantly improves when subnational governments adopt governance reforms and improve administrative control over spending.

The forecasting results provided in Tables 1 and 2 offer additional critical insights into regional fiscal management capacities. High forecasting accuracies (low MAPE values) across most regions validate the reliability of using advanced quantitative forecasting methods like Double Exponential Smoothing with Damped Trend for fiscal planning. These models assist policymakers in identifying critical fiscal trends and formulating evidence-based strategies to address underlying inefficiencies and optimize resource allocation. As shown by Novi et al. (2019), regions that integrate sophisticated forecasting into fiscal planning typically achieve more stable revenue trajectories and improved expenditure targeting.

This comprehensive discussion illustrates that effective fiscal management is a multifaceted phenomenon influenced by a combination of internal governance capabilities, institutional frameworks, strategic budgeting practices, and external fiscal environments. Each region's unique challenges and strengths underline the necessity for tailored fiscal management strategies. The critical role of institutional reforms, governance enhancement, and performance-oriented budgeting emerges repeatedly across all regions, reinforcing existing literature advocating comprehensive structural reforms to improve regional fiscal outcomes. This confirms extensive empirical work that links institutional reform—such as improving budget transparency, planning systems, and oversight capacity—with enhanced public finance outcomes (Ain et al., 2024; Alonso & Andrews, 2018; Wardhani et al., 2017).

CONCLUSION

The study thoroughly examined fiscal management effectiveness and efficiency for Kota Surabaya and Kabupaten Bangkalan, highlighting substantial variations linked to local governance, institutional strength, and budgetary practices. Kota Surabaya emerged as a benchmark, demonstrating optimal fiscal effectiveness and commendable efficiency, signifying robust institutional capabilities and governance practices. Meanwhile, Kabupaten Bangkalan struggled significantly with fiscal dependency and institutional weaknesses, resulting in pronounced inefficiencies and limited fiscal independence. This research contributes significantly to the existing literature by offering detailed empirical evidence on regional fiscal performance, stressing the importance of institutional and governance frameworks in achieving fiscal efficiency and effectiveness. Future studies should delve deeper into analyzing specific institutional reforms and governance strategies, employing longitudinal and comparative methods across different regions or countries.

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