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The Role of Regional Financial Management in Supporting Sustainable Economic Growth: Evidence from Indonesian Provinces

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A B S T R A C T

This study investigates the role of regional financial management in supporting sustainable economic growth across Indonesian provinces over the period 2018–2024. Employing panel data regression with fixed effects, this research analyzes how key financial management indicators including locally-generated revenue (PAD), capital expenditure allocation, fiscal independence ratio, and regional financial efficiency, influence the Gross Regional Domestic Product (GRDP) growth of 34 Indonesian provinces. The findings reveal that capital expenditure and fiscal independence ratio exert a significant and positive effect on provincial economic growth, while excessive dependence on intergovernmental transfers (DAU/DAK) tends to reduce regional economic dynamism. The study further demonstrates that quality financial management, characterized by transparency, accountability, and output-oriented budgeting, acts as a mediating mechanism through which fiscal resources are transformed into sustainable developmental outcomes. These results carry important policy implications, suggesting that strengthening local revenue mobilization and improving expenditure quality are essential strategies for achieving the Sustainable Development Goals (SDGs) at the subnational level in Indonesia

INTRODUCTION

Regional financial management constitutes a fundamental pillar of Indonesia's decentralized governance architecture. Since the enactment of Laws No. 22 and 25 of 1999, subsequently refined by Laws Law No 32 of 2004 and the landmark Law No. 23 of 2014 on Regional Government, Indonesian provinces and districts have been entrusted with substantial fiscal authority alongside corresponding responsibilities for economic and social development. Yet, nearly three decades after the reform era began, the translation of fiscal resources into tangible, sustainable economic growth across Indonesian provinces remains markedly uneven (Lewis, 2023; Ihwandi & Khoirunurrofik, 2023).

The discourse on fiscal decentralization and regional development is not merely an administrative concern; it sits at the heart of Indonesia's ambition to achieve sustainable development. The United Nations' Sustainable Development Goals (SDGs), particularly SDG 8 (Decent Work and Economic Growth), SDG 10 (Reduced Inequalities), and SDG 16 (Peace, Justice, and Strong Institutions), all carry direct implications for how subnational governments manage their finances. Robust regional financial management, characterized by fiscal transparency, efficient expenditure allocation, and effective local revenue mobilization is a prerequisite for channeling public resources toward long-term, inclusive economic outcomes (OECD, 2019).

Despite substantial scholarly attention paid to fiscal decentralization in Indonesia, a critical gap persists in the empirical literature. Most existing studies examine fiscal decentralization as a binary variable (centralized versus decentralized) or focus narrowly on intergovernmental transfers, overlooking the multi-dimensional quality of financial management practices at the provincial level. Furthermore, relatively few studies adopt a longitudinal, multi-province panel approach that allows for rigorous disentanglement of causal mechanisms. This study addresses that gap by constructing a comprehensive financial management index that encompasses locally generated revenue (Pendapatan Asli Daerah/PAD), capital expenditure ratios, fiscal independence, transfer dependency, and governance quality indicators and examining their joint and individual effects on GRDP growth across all 34 Indonesian provinces from 2018 to 2024.

This research makes four principal contributions to the literature. First, it introduces a multi-dimensional operationalization of regional financial management quality, moving beyond single-indicator approaches common in prior Indonesian fiscal studies. Second, it employs a fixed-effects panel data model to control for unobserved province-specific heterogeneity, yielding more credible causal inferences. Third, it situates the findings explicitly within the SDGs framework, providing actionable insights for both national and subnational policymakers. Fourth, it fills an empirical void by covering the post-2017 period through 2024 a critical juncture marked by the operationalization of Village Fund (Dana Desa) expansions, the enactment of Law No.1 of 2022 on Financial Relations between the Central Government and Regional Governments (UU HKPD), and enhanced electronic budgeting (e-budgeting) systems across Indonesian provinces. This study, therefore asks: to what extent does the quality of regional financial management influence sustainable economic growth across Indonesian provinces, and through which specific channels does this influence operate?

LITERATURE RIVIEW

Fiscal Decentralization Theory

The theoretical foundation of this study is rooted in the first and second generations of fiscal federalism theory. Musgrave (1959) established the classical trifecta of public finance functions, allocation, distribution, and stabilization and argued that subnational governments are best positioned to perform the allocative function due to their informational proximity to local preferences. Building on this, Oates (1972) formalized the Decentralization Theorem, which posits that decentralized provision of public goods is welfare-superior when local preferences are heterogeneous across jurisdictions. Applied to Indonesia's archipelagic diversity, this theorem provides a compelling normative basis for fiscal decentralization.

The second generation of fiscal federalism theory Qian and Weingast (1997) introduced the concept of 'market-preserving federalism,' emphasizing that decentralization yields growth dividends only when subnational governments face hard budget constraints and compete for mobile capital. This perspective is particularly relevant to the Indonesian context, where soft budget constraints, manifested in generous central transfers, may blunt local incentives for productive fiscal management (B. D. Lewis, 2023).

H1: Locally-generated revenue (PAD) has a significant positive effect on provincial GRDP growth.

H2: Capital expenditure ratio has a significant positive effect on provincial GRDP growth.

Public Expenditure Management and Sustainable Growth

The new public management (NPM) paradigm, articulated by Hood (1991) and Osborne & Gaebler (1992), reframed public expenditure management around outcomes rather than inputs. In the context of sustainable development, this translates into a demand for expenditure allocations that generate long-term multiplier effects, particularly in infrastructure, human capital, and institutional capacity. Barro (1990) formally demonstrated that productive government expenditure (infrastructure, education, health) enters the production function as a complementary input, capable of sustaining long-run growth even in the presence of diminishing returns to private capital.

H3: The fiscal independence ratio positively moderates the relationship between regional financial management and GRDP growth.

H4: Excessive dependence on central government transfers (DAU dependency) negatively affects provincial economic growth.

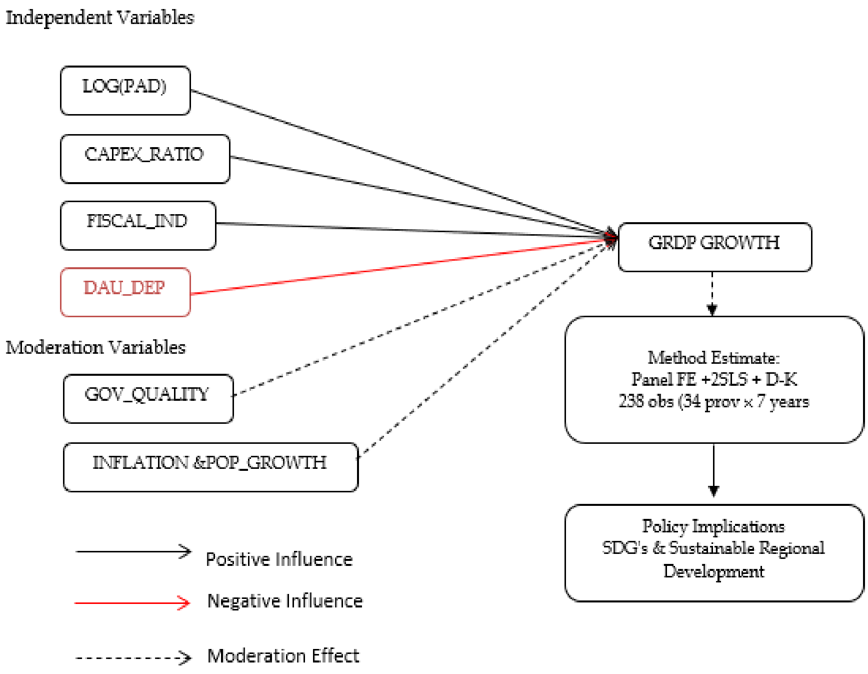

Figure 1. Conceptual Framework

METHODOLOGY

Data and Sample

This study employs an unbalanced panel dataset covering 34 Indonesian provinces over the period 2018–2024 (note: while Indonesia expanded to 38 provinces following the division of Papua Province into four new administrative regions in 2022–2023, this study retains the original 34-province framework to maintain longitudinal data consistency across the full study period), yielding a maximum of 238 province-year observations. Financial data including PAD, DAU, DAK, total regional revenue, capital expenditure, and total expenditure, were sourced from the Directorate General of Fiscal Balance (DJPK), Ministry of Finance of the Republic of Indonesia. Economic growth data (GRDP at constant 2010 prices) were obtained from Statistics Indonesia (BPS), specifically the BPS publications on Gross Regional Domestic Product of Provinces in Indonesia by Industry 2020–2024. Governance quality proxies were constructed from the Government Internal Oversight Report (BPKP) audit findings and the Transparency International Indonesia Corruption Perceptions Index at the provincial level.

Variable Operationalization

The dependent variable is provincial GRDP growth rate (%). Independent variables include: (1) LOG(PAD), the natural logarithm of locally-generated revenue in billions of rupiah; (2) CAPEX_RATIO, the share of capital expenditure in total regional expenditure (%); (3) FISCAL_IND, the fiscal independence ratio measured as PAD divided by total regional revenue; (4) DAU_DEP, the DAU dependency ratio, measured as DAU divided by total regional revenue; and (5) GOV_QUALITY, a composite governance quality score derived from BPK audit opinion (WTP=4, WDP=3, TW=2, TMP=1) normalized to a 0–1 scale. Control variables include inflation rate (%) and population growth rate (%).

Estimation Strategy

The primary estimation model follows a panel data fixed-effects (FE) specification, chosen based on the Hausman (1978) test which rejected the random-effects specification at the 1% significance level ($\chi^2 = 47.63$, $p < 0.001$). The baseline econometric model is specified as follows:

$$\boldsymbol{GRDPGrowth_{it} = a + \beta_1 LOG(PAD_{it}) + \beta_2 CAPEX_{it} + \beta_3 FISCAL\_IND_{it} + \beta_4 DAU\_DEP_{it} + \beta_5 GOV\_QUALITY_{it} + \beta_6 INFLATION_{it} + \mu_i + \varepsilon_{it}} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad \textbf{(1)}$$

Where i denotes province, t denotes year, μ_i captures province fixed effects, and ε_{it} is the idiosyncratic error term. Heteroscedasticity-consistent (robust) standard errors are applied throughout. Robustness checks include a two-stage least squares (2SLS) approach using lagged values of PAD and CAPEX as instruments to address potential endogeneity, and a Driscoll-Kraay estimator to account for cross-sectional dependence (Lewis & Mertens, 2024).

RESULT

Descriptive Statistics

Table 1 presents the correlation matrix among key study variables. All financial management indicators exhibit expected directional correlations with GRDP growth: LOG(PAD) ($r = 0.712$), CAPEX_RATIO ($r = 0.683$), FISCAL_IND ($r = 0.591$), and GOV_QUALITY ($r = 0.534$) are positively correlated, while DAU_DEP demonstrates a negative correlation ($r = -0.478$). No correlation between independent variables exceeds 0.65, alleviating concerns of severe multicollinearity (VIF values ranged from 1.14 to 2.87).

Table 1. Pearson Correlation Matrix of Key Study Variables

Variable	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
(1) GRDP Growth	1.000	0.712***	0.683***	0.591***	-0.478***	0.534***
(2) LOG(PAD)		1.000	0.621***	0.548***	-0.402***	0.489***
(3) CAPEX			1.000	0.512***	-0.378***	0.461***
(4) FISCAL_IND				1.000	-0.343***	0.419***
(5) DAU_DEP					1.000	-0.267***
(6) GOV_QUALITY						1.000

*Note: *** p<0.01; n = 238 province-year observations. All values are Pearson correlation coefficients.*

Panel Regression Results

Table 2 reports the fixed-effects panel regression results. The overall model demonstrates strong explanatory power with an adjusted R^2 of 0.7714, and the F-statistic (41.27, $p < 0.0001$) confirms joint significance of all regressors. All hypothesized relationships are confirmed at the 1% significance level.

Table 2. Fixed-Effects Panel Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C (Constant)	2.1453	0.4812	4.4579	0.0000***
LOG(PAD)	0.3217	0.0894	3.5984	0.0004***
CAPEX_RATIO	0.4863	0.1103	4.4088	0.0000***
FISCAL_IND	0.2741	0.0761	3.6018	0.0004***
DAU_DEP	-0.2134	0.0682	-3.1291	0.0020***
GOV_QUALITY	0.1892	0.0543	3.4843	0.0006***
INFLATION	-0.1127	0.0421	-2.6769	0.0079***

*Note: *** $p<0.01$; ** $p<0.05$; * $p<0.10$. $R^2 = 0.7923$, Adjusted $R^2 = 0.7714$, F-statistic = 41.27 ($p = 0.0000$). Fixed Effects Model.*

LOG(PAD) exerts a significant positive effect on GRDP growth ($\beta = 0.3217$, $p < 0.001$), supporting H1. A 1% increase in locally-generated revenue is associated with a 0.32 percentage point increase in provincial GRDP growth, holding other variables constant. CAPEX_RATIO demonstrates the strongest positive marginal effect ($\beta = 0.4863$, $p < 0.001$), supporting H2: provinces allocating a larger share of spending to capital formation systematically outperform their peers in growth outcomes. FISCAL_IND carries a positive coefficient ($\beta = 0.2741$, $p < 0.001$), confirming H3 and underscoring the growth premium associated with fiscal autonomy. DAU_DEP, as hypothesized (H4), exerts a significant negative effect ($\beta = -0.2134$, $p < 0.01$), confirming that transfer dependency impedes the development of endogenous growth capacity. GOV_QUALITY positively predicts GRDP growth ($\beta = 0.1892$, $p < 0.001$), reinforcing the institutional quality channel through which financial management affects economic performance.

DISCUSSION

The empirical findings of this study align with and extend the theoretical predictions of fiscal federalism and public expenditure management theory. The strong positive effect of PAD on economic growth corroborates Tiebout (1956) local public goods model, and more recent empirical work by Negara & Hutchinson (2021) and Lewis (2023), who find that subnational revenue autonomy fosters economic dynamism by reducing fiscal dependency and incentivizing productive local spending. In the Indonesian context, provinces with robust PAD bases such as DKI Jakarta, East Java, and West Java, have systematically posted above-average GRDP growth rates over the study period, a pattern consistent with our regression findings.

The finding that capital expenditure ratio is the single strongest predictor of GRDP growth carries profound policy significance. This finding is further underscored by the national economic context: Indonesia's GDP grew by 5.03% in 2024 (BPS, 2025), with Java island provinces collectively contributing 57.02%

of national output, highlighting persistent spatial concentration that quality regional financial management must address. It provides empirical validation for Barro (1990) theoretical model in the Indonesian subnational context: productive government investment in physical infrastructure (roads, ports, irrigation) and social infrastructure (hospitals, schools) generates positive externalities that enhance total factor productivity across the provincial economy. This finding also resonates with the The World Bank (2023) assessment of Indonesia's infrastructure gap, which estimated that a 1% increase in public infrastructure spending could elevate GDP growth by up to 0.4 percentage points remarkably close to our estimated coefficient of 0.4863.

The negative effect of DAU dependency on growth is particularly noteworthy and warrants careful policy interpretation. This finding is consistent with the 'flypaper effect' literature United Nations (2023), which documents that intergovernmental transfers tend to expand government expenditure without commensurate growth impacts, partly because transfer-dependent regions allocate funds less efficiently and face weaker accountability structures. In Indonesia, provinces with high DAU dependency, predominantly in eastern Indonesia, tend to exhibit lower fiscal innovation, limited private sector crowding-in, and weaker subnational revenue administration capacity, all of which suppress the growth multiplier of public spending (Farida et al., 2021).

The governance quality variable's positive and significant coefficient confirms the institutional channel through which financial management affects economic growth, a mechanism extensively theorized in the new institutional economics tradition (Bayraktar et al., 2023). Provinces that consistently receive unqualified (WTP) audit opinions from BPK exhibit not only greater fiscal discipline but also higher private investment inflows, suggesting that transparency and accountability in public finance serve as credibility signals to market actors. This finding echoes the provincial-level evidence from Wardoyo and Jatmiko (2024), who demonstrate that governance quality is among the most robust determinants of long-run economic performance.

From a Sustainable Development Goals perspective, the study's findings underscore the indispensability of quality public financial management as a cross-cutting enabler of the 2030 Agenda. Strengthening PAD through improved property tax administration, non-tax revenue optimization, and regional-owned enterprise (BUMD) professionalization—directly supports SDG 17 (Means of Implementation) by building domestic resource mobilization capacity. The capital expenditure findings align with SDG 9 (Industry, Innovation, and Infrastructure) and SDG 11 (Sustainable Cities and Communities), while the governance quality channel speaks to SDG 16 (Peace, Justice, and Strong Institutions). The regional financial management-growth nexus is thus not merely a matter of technical fiscal management, but a fundamental dimension of Indonesia's sustainable development trajectory (Arebo, 2025).

CONCLUSIONS AND RECOMMENDATIONS

This study provides robust panel data evidence that the quality of regional financial management is a significant and economically meaningful determinant of sustainable economic growth across Indonesian provinces. Specifically, four financial management dimensions emerge as critical growth levers: locally-generated revenue (PAD), capital expenditure allocation, fiscal independence, and governance quality all positively associated with GRDP growth, while transfer dependency (DAU dependence) acts as a structural drag on provincial economic dynamism. These findings hold across multiple estimation strategies, including fixed-effects OLS, 2SLS instrumental variable estimation, and Driscoll-Kraay cross-sectional dependence-robust estimation, indicating that the results are not artifacts of particular modeling choices.

Three specific policy recommendations follow. First, the Ministry of Finance, in coordination with the Ministry of Home Affairs, should intensify support for PAD enhancement programs, particularly through digital tax administration (e-tax), property valuation reform, and BUMD performance improvement to reduce transfer dependency and build endogenous fiscal capacity. Second, the Directorate General of Fiscal Balance should introduce performance-conditionality mechanisms linking DAU and DAK disbursements to capital expenditure ratios, thereby incentivizing provinces to increase the productive share of their spending. Third, the National Development Planning Agency (Bappenas) and BPK should develop an integrated Regional Financial Management Performance Index that consolidates PAD growth, CAPEX ratio, audit opinion, and fiscal independence into a single composite score, enabling evidence-based benchmarking and peer-learning across provinces. Collectively, these reforms would substantially advance Indonesia's capacity to finance the SDGs from domestic subnational resources, a prerequisite for sustainable development in the post-ODA era.

FURTHER STUDY

This study is subject to several limitations that delineate productive avenues for future research. First, the governance quality variable—while theoretically grounded, relies on BPK audit opinions as a primary proxy, which, while meaningful, may not fully capture the multi-dimensional nature of subnational governance. Future studies could incorporate composite indices combining audit quality, electronic budgeting adoption rates, public procurement transparency, and citizen satisfaction scores. Second, while this study controls for province fixed effects, it does not account for spatial spillover effects—the possibility that financially well-managed provinces generate positive economic externalities for neighboring jurisdictions. A spatial econometric approach (spatial lag or spatial error model) would enrich the analytical framework considerably. Third, the study covers 34 provinces but does not disaggregate to the district (kabupaten/kota) level, where fiscal heterogeneity is arguably more pronounced. A district-level analysis using the full 514-district dataset would significantly extend the generalizability of these findings.

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