Leading sector analysis for strengthening local own-source revenue: Evidence from Pulang Pisau Indonesia

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ABSTRACT

Regional economic development requires accurate identification of strategic sectors that contribute significantly to local revenue. In the context of Indonesia's fiscal decentralization, regional governments are increasingly expected to optimize their economic potential to enhance Regional Own Revenue (PAD). This study aims to identify the leading economic sectors in Pulang Pisau Regency, Central Kalimantan, and examine their influence on PAD from 2010 to 2024. The research adopts a quantitative approach using secondary data sourced from the Central Bureau of Statistics. Four analytical methods are employed to determine leading sectors: Location Quotient (LQ), Shift-Share analysis, Klassen Typology, and Overlay analysis. After identifying leading sectors, multiple linear regression is used to assess their impact on PAD. The results show that two sectors—Agriculture, Forestry, and Fisheries; and Construction—are consistently classified as leading sectors based on their high specialization, competitiveness, and structural contribution. Regression analysis reveals that the Agriculture, Forestry, and Fisheries sector has a significant positive effect on PAD, confirming its strategic role in fiscal development. Conversely, the Construction sector shows a negative and significant effect, suggesting limited fiscal retention and low tax linkage within the local economy. These findings highlight the importance of aligning economic development policies with sector-specific fiscal strategies. The study recommends that regional governments prioritize agricultural sector development through infrastructure, value chain integration, and tax system reform. In contrast, regulatory adjustments are needed in the construction sector to enhance its contribution to local revenue, such as through local content requirements and contractor tax enforcement. Future research should incorporate qualitative dimensions and governance factors to deepen the understanding of PAD performance in decentralized regions.

INTRODUCTION

The Republic of Indonesia is endowed with an abundance of natural resources, encompassing both biotic and abiotic assets. These resources span land, marine environments, and subsurface reserves. Although many have been utilized to meet the needs of the Indonesian population, a substantial portion remains untapped due to technological, economic, and infrastructural constraints. As such, equitable and rational development of natural resources is imperative for national progress. Economic development must be an ongoing effort, as prosperity, equity, and welfare are relative goals that cannot be attained absolutely or permanently (Tambunan, 2020).

Regional economic development serves as a strategic process wherein local governments and communities collaboratively manage and optimize available resources. This process fosters job creation, stimulates regional economies, and promotes sustainable growth

through synergistic partnerships between the public and private sectors (Suryahadi & Suryadarma, 2021). The mandate for such regional autonomy is enshrined in Law No. 23 of 2014 concerning Regional Government, which provides local governments the authority to manage governance, develop territories, and utilize regional potential to enhance public welfare.

Decentralization policies, particularly in regencies like Pulang Pisau, have been operationalized through the devolution of responsibilities from central to local governments. This transition must be accompanied by adequate fiscal transfers and resource allocations. A core requirement for effective regional autonomy is the capacity of local governments to independently mobilize financial resources. Within this context, Local Own-Source Revenue (Pendapatan Asli Daerah or PAD) represents a fundamental pillar for sustainable regional finance (Fitriani & Pratama, 2023).

Economic development at the local level often emphasizes the enhancement of sectoral growth as measured by the Gross Regional Domestic Product (GRDP). GRDP reflects the value of goods and services produced in a region and serves as a key indicator of economic performance. External demand plays a vital role in influencing regional economic dynamics, enabling local resources to be leveraged in generating employment, income, and regional prosperity (Arifin, 2022). Efforts to improve PAD are integral to reducing fiscal dependency on central government transfers. PAD not only serves as a critical source of revenue for financing public services but also enables local governments to tailor development according to local priorities. Strategic financial policies are thus essential to stimulate PAD growth and support regional development initiatives (Haryanto & Suharyanto, 2020).

In the case of Pulang Pisau Regency—located in Central Kalimantan and covering 8,997 km²—the potential for regional economic advancement is significant. While mining remains a core livelihood for many residents, other sectors such as agriculture, fisheries, palm oil, and horticulture contribute meaningfully to local economic activity. The regency consists of 8 districts, 4 subdistricts, and 95 villages, forming a diverse economic landscape with multifaceted development potential.

Based on data from Statistics Indonesia (BPS, 2024), 17 economic sectors contribute to the GRDP of Pulang Pisau. These sectors offer a foundation for identifying leading sectors, which possess competitive advantages and significant contributions to PAD. The identification of such sectors can inform strategic investments and policy interventions, enabling governments to optimize economic output and fiscal performance. Notably, targeted sectoral development can facilitate interregional trade and even integration into international markets, thereby enhancing regional autonomy and service delivery capacity (Widodo & Permana, 2023).

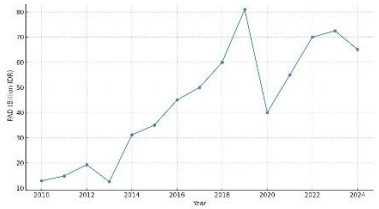

Figure 1. Realized Local Own-Source Revenue of Pulang Pisau (IDR Billion), 2010–2024

From 2010 to 2019, PAD in Pulang Pisau experienced a steady increase, peaking at IDR 81 billion in 2019. However, the onset of the COVID-19 pandemic in 2020 led to a sharp decline, reflecting global and national economic disruptions. Post-pandemic recovery was marked by a significant rebound, possibly due to enhanced tax efficiency and policy adjustments. Nevertheless, a notable drop to IDR 65.12 billion was observed in 2024, likely due to fiscal shocks, regulatory changes, or weak sectoral performance. These trends underscore the vulnerability of PAD to both internal policy and external macroeconomic factors.

Table 1. GRDP Growth Rate of Pulang Pisau Regency (2017–2024)

Year	GRDP Growth Rate (%)
2017	5.90
2018	5.91
2019	5.10
2020	3.24
2021	4.67
2022	4.70
2023	4.85
2024	4.41

Source: BPS Pulang Pisau, 2025

The regional economy exhibited varying growth rates during 2017–2024. Growth peaked at 5.91% in 2018, declined sharply to 3.24% in 2020 due to the pandemic, and gradually recovered to 4.85% by 2023. A slight contraction to 4.41% was observed in 2024. Sector-wise, Agriculture, Forestry, and Fisheries consistently served as the primary drivers of economic growth, exhibiting resilience throughout the period. However, the Construction and Transportation sectors experienced severe contractions during crisis years, indicating their vulnerability to external shocks.

Pulang Pisau's economic structure remains heavily reliant on primary sectors, reflecting limited diversification. This dependency raises concerns regarding long-term sustainability and fiscal resilience. Strategic development of key sectors is therefore essential for reinforcing PAD and achieving balanced regional development. Additionally, empirical assessment using Location Quotient (LQ), Shift-Share, Klassen Typology, and regression analysis can offer comprehensive insights into sectoral dynamics (Suharto et al., 2023).

The legal framework underpinning regional fiscal autonomy is established through Law No. 32/2004 on Regional Government and Law No. 33/2004 on Fiscal Balance. These laws emphasize the empowerment of local entities and provide mechanisms for decentralization, including revenue generation through PAD sources such as local taxes, levies, and region-owned enterprises. Enhancing PAD is not merely a fiscal objective but a developmental strategy. As such, local governments must identify leading sectors, nurture competitive advantages, and formulate inclusive economic plans that align with endogenous potentials. By doing so, regions like Pulang Pisau can reduce dependency, build fiscal independence, and accelerate inclusive development (Santoso & Nugroho, 2021).

LITERATURE REVIEW

Regional Economic Development

Regional economic development refers to a strategic effort undertaken by local governments and communities to optimize the use of local resources. This process is intended to promote balanced territorial development and improve local economic performance. According to Sotarauta and Beer (2021), sustainable regional development must integrate economic growth with equity and ecological preservation. Local governments play a crucial role in fostering innovation, infrastructure, and institutional quality to support economic dynamism. The success of regional development depends on effective decentralization and stakeholder participation. Regions with well-coordinated planning systems tend to exhibit more stable and inclusive growth outcomes.

Economic development in regions is often driven by sectoral diversification and intersectoral linkages. Strong backward and forward linkages among industries enhance multiplier effects and income generation at the local level. Rodríguez-Pose (2020) highlights that innovation ecosystems and local entrepreneurship significantly influence regional competitiveness. These elements foster endogenous growth and reduce dependency on central transfers. Successful regions often leverage niche industries and local advantages to build economic resilience. Targeted policies and public-private partnerships further accelerate regional transformation.

Decentralization has been widely recognized as a mechanism to empower regions and promote tailored development strategies. Fiscal and administrative autonomy allows local governments to craft development programs that align with local needs. Berkel and Börner (2023) found that decentralized governance systems tend to deliver better economic outcomes when supported by transparent institutions. However, disparities in fiscal capacity and institutional quality can hinder regional development. Therefore, capacity building and intergovernmental cooperation are essential for ensuring equitable development. Balanced territorial development also requires addressing geographic and infrastructure-related inequalities.

Monitoring regional development outcomes is essential for evaluating policy effectiveness. Key indicators include changes in Gross Regional Domestic Product (GRDP), employment rates, and sectoral output contributions. Scholars such as Crescenzi and Iammarino (2021) emphasize the need for disaggregated data and dynamic policy adjustments. Moreover, performance-based fiscal transfers can serve as incentives for local innovation and economic efficiency. Strengthening data systems and research capacity at the local level will enhance evidence-based policy-making. Therefore, integrating economic analysis into regional governance structures is crucial for sustainable development planning.

Leading Sectors (Basic Sector Theory)

Leading sectors are economic segments with a competitive edge and substantial export capacity beyond the local market. According to the basic sector theory, growth is primarily

driven by sectors that generate external demand and inject income into the region. These sectors are usually resource-based or labor-intensive in developing regions. Arsyad (2022) asserts that leading sectors play a pivotal role in shaping regional economic structure and development priorities. They generate spillover effects that influence non-basic sectors and household income. Proper identification of these sectors enables governments to design focused investment policies.

The criteria for determining a sector as "leading" include high growth potential, significant GRDP contribution, and locational advantage. The Location Quotient (LQ) method is frequently used to assess whether a sector's share in the regional economy exceeds that of a broader reference area. When LQ exceeds 1.0, the sector is considered specialized and likely to be a basic sector. In combination with Shift-Share and Klassen Typology, LQ helps policymakers distinguish sectors with structural competitiveness. Nasution and Setiawan (2021) suggest using multi-method analyses to avoid misinterpretation and ensure robust classification. Moreover, temporal trends in sectoral growth are essential for forward-looking policy decisions.

Sectors like agriculture, construction, and manufacturing often dominate regional economies in resource-rich or rural areas. In Kalimantan, for example, the forestry and palm oil sectors have consistently been identified as key growth drivers. Suharto et al. (2023) found that leading sectors not only support local employment but also contribute significantly to regional revenues. Their performance is directly linked to tax revenues, retributions, and profit-sharing mechanisms. Therefore, enhancing productivity and sustainability in these sectors can boost fiscal autonomy. Long-term strategies should aim to balance economic exploitation with environmental preservation.

Investing in leading sectors should be supported by enabling infrastructure, technology, and institutional coordination. Development plans must consider market access, regulatory efficiency, and skill availability. According to Arifin and Wicaksono (2024), regional governments that align sectoral priorities with macroeconomic trends achieve higher economic resilience. Sector-specific policies, such as subsidies or R&D incentives, can further enhance competitiveness. However, reliance on a few sectors also introduces risks, especially during commodity shocks. Thus, diversification within and across sectors remains a strategic imperative.

Local Own-Source Revenue

Local Own-Source Revenue (PAD) reflects a region's financial independence and capacity to fund development autonomously. PAD comprises revenues generated from regional taxes, service charges, local enterprises, and other legitimate sources. According to Mardiasmo (2020), higher PAD enables local governments to plan and execute development agendas more flexibly. It also reduces over-reliance on central transfers, increasing regional fiscal resilience. However, disparities in economic structure and administrative efficiency often lead to variations in PAD performance. Thus, PAD serves not only as a financial instrument but also as a performance indicator of governance.

The effectiveness of PAD mobilization is influenced by policy design, institutional

quality, and sectoral performance. For instance, regions with vibrant economic sectors tend to have higher taxable income and greater fiscal space. Darmawan and Fahmi (2021) assert that improving PAD collection systems and taxpayer compliance can significantly raise regional revenues. Technological integration, such as e-tax systems and digital audits, also enhances revenue transparency and efficiency. Moreover, incentives and training for tax officers are critical for institutional strengthening. Efficient revenue management requires balancing equity, legality, and administrative simplicity.

In resource-rich regions, PAD potential is often concentrated in sectors like mining, forestry, and agriculture. These sectors can generate revenues through profit-sharing schemes, resource taxes, and licensing fees. However, poorly regulated extraction and weak oversight may lead to revenue leakage and environmental degradation. Anggraeni and Latief (2022) emphasize the need for strict governance, environmental monitoring, and benefit-sharing frameworks. In contrast, regions with a stronger service sector base tend to rely on business licenses and service charges. Therefore, PAD composition reflects the structural features of the local economy.

Enhancing PAD must be accompanied by responsible expenditure management and public service delivery. Transparent reporting, citizen participation, and performance-based budgeting strengthen public trust in local institutions. According to Widodo and Permana (2023), regions with high PAD and efficient spending tend to enjoy better socioeconomic outcomes. Additionally, PAD can finance infrastructure, education, health services, and innovation, thereby creating a virtuous cycle of growth. Effective PAD utilization increases the multiplier effects on local development. Thus, revenue generation and expenditure effectiveness must go hand in hand.

Location Quotient (LQ) Analysis

The Location Quotient (LQ) is a quantitative method used to determine the specialization level of economic sectors within a region. An LQ value greater than 1.0 indicates that a sector is more dominant in the region compared to the reference area, often signifying a leading or basic sector. This method helps policymakers identify which industries are contributing disproportionately to the local economy. According to Kusumawardani and Ramadhan (2020), LQ analysis is a critical tool in regional planning and resource allocation. It informs decisions about which sectors warrant investment, protection, or diversification. However, LQ alone may not capture dynamic changes in sectoral performance over time.

LQ analysis is commonly used in conjunction with GRDP data to assess economic structure. For instance, sectors such as agriculture and mining may exhibit high LQ values in rural or resource-abundant regions. In contrast, urban regions may show specialization in services or industry. Arsyad (2022) notes that combining LQ with time-series analysis can provide insights into emerging sectors. Such analysis helps distinguish between temporarily inflated sectors and genuinely competitive ones. It also allows for more refined development targeting.

LQ is particularly valuable in formulating place-based policies for local economic development. Regions can prioritize high-LQ sectors for subsidies, training, and infrastructure

support. According to Rahmawati and Yusuf (2023), sectors with high LQ and job creation potential should be aligned with local workforce development. However, over-specialization in a few high-LQ sectors may pose risks during economic shocks. Therefore, LQ findings should be balanced with diversification strategies and social impact assessments. Strategic investment must consider both economic efficiency and resilience.

Limitations of LQ include its static nature and sensitivity to GRDP data inconsistencies. Moreover, it does not account for sectoral interdependencies or value chain dynamics. To address this, many researchers advocate combining LQ with Shift-Share and Input-Output analysis. Yuliani and Prasetyo (2021) argue that multi-method approaches offer a more comprehensive view of regional competitiveness. In policy-making, triangulating data improves confidence in planning decisions. Hence, while LQ is a powerful diagnostic tool, its application should be complemented by broader economic frameworks.

Shift-Share Analysis

Shift-Share Analysis (SSA) is used to decompose regional economic growth into national, industrial, and regional competitive components. This technique identifies whether a region's growth is due to national trends or local advantages. According to Bappenas (2022), SSA is instrumental in distinguishing competitive sectors from those that benefit merely from national momentum. It allows policymakers to isolate region-specific factors that influence performance. The model is particularly useful for long-term development planning. Additionally, SSA enables benchmarking between regions or time periods.

SSA breaks down growth into three components: national share (NS), industry mix (IM), and regional shift (RS). NS indicates how much of the region's growth is attributable to overall national growth. IM shows whether the region's industrial composition is oriented toward fast-growing sectors. RS measures the region's unique competitive performance relative to national trends. Sectors with high positive RS values are considered regionally competitive. According to Hardjosoekarto and Maulana (2023), a consistently positive RS across sectors signals a dynamic and adaptive economy.

The results of SSA can guide strategic investment and policy prioritization. Regions may use it to reinforce high-performing sectors or rehabilitate lagging ones. In Pulang Pisau, for instance, SSA can determine whether agriculture's dominance reflects structural advantage or national commodity trends. By identifying sectors with declining RS, targeted interventions can be formulated. This analysis also supports evidence-based budgeting and grant allocation. Therefore, SSA strengthens decision-making in regional economic management.

Nevertheless, SSA has limitations in capturing qualitative and structural aspects of development. It does not directly incorporate factors like labor quality, technology, or innovation. To overcome these, SSA should be used alongside qualitative assessments and field studies. According to Santoso and Nugroho (2021), incorporating institutional and governance indicators enhances its policy relevance. Moreover, SSA relies heavily on accurate and timely economic data. As such, investment in data systems and capacity building is critical for maximizing its utility.

Gross Regional Domestic Product (GRDP)

Gross Regional Domestic Product (GRDP) is a core indicator of economic performance at the subnational level. It reflects the total value of goods and services produced within a region over a specific period. GRDP provides insights into sectoral contributions, regional disparities, and growth trajectories. According to BPS (2023), GRDP data are vital for regional planning, budgeting, and development monitoring. It is also a benchmark for comparing economic performance across regions. High GRDP growth signals expansion, while stagnation may indicate structural issues.

GRDP can be calculated using current prices or constant prices (real GRDP). Constant-price GRDP eliminates inflation effects, allowing for accurate growth comparisons. Sectoral analysis of GRDP identifies industries that are expanding or contracting over time. Rahman and Siregar (2022) emphasize that trends in GRDP guide the formulation of spatial and economic strategies. For example, rising contributions from services or digital sectors may prompt shifts in development focus. GRDP thus acts as both a performance metric and a policy tool.

In the context of PAD, GRDP performance directly influences revenue potential. Higher sectoral output often translates to increased taxes, levies, and economic transactions. According to Supriyanto and Farhan (2023), there is a strong correlation between GRDP and PAD, especially in industrial and commercial regions. Policymakers must monitor GRDP components closely to identify emerging growth engines. This relationship also highlights the importance of integrating fiscal and economic policies. A well-aligned strategy will enhance both economic vitality and financial self-sufficiency.

However, GRDP does not capture income distribution, poverty, or social equity. A region may exhibit high GRDP but still suffer from inequality or underdevelopment. To address this, GRDP should be complemented by indicators like HDI, Gini ratio, and employment rates. According to Arifin (2022), multidimensional assessment ensures that growth is inclusive and sustainable. Thus, while GRDP is essential, it must be interpreted within a broader socio-economic context. Balanced development requires economic output, social justice, and environmental sustainability.

METHODS

This study employs a quantitative descriptive approach to identify the leading economic sectors in Pulang Pisau Regency and examine their contribution to Regional Original Revenue (PAD). The research uses secondary data sourced from the Central Bureau of Statistics (BPS) and official regional publications, covering the years 2010 to 2024. Variables include sectoral Gross Regional Domestic Product (GRDP) and realized PAD figures, measured in billion Indonesian Rupiah (IDR). The independent variables comprise 17 economic sectors, while PAD serves as the dependent variable. All data were compiled through document review and processed using standardized templates for statistical consistency. This approach allows for empirical, time-series analysis of regional sectoral performance and revenue trends.

To analyze the data, three main regional economic tools were employed: Location

Quotient (LQ), Shift-Share Analysis, and Klassen Typology. LQ identifies basic sectors with a comparative advantage (LQ > 1.0), while Shift-Share Analysis decomposes sectoral growth into national, industrial, and regional components to highlight local competitiveness. Klassen Typology classifies sectors into quadrants based on their relative growth and contribution to GRDP. Additionally, multiple linear regression was applied to examine the influence of leading sectors on PAD. These combined methods provide both classification and causal insights into sectoral contributions to local fiscal capacity, supporting evidence-based regional development strategies.

RESULT AND DISCUSSION

Location Quotient (LQ) Analysis

The LQ analysis compares the relative contribution of each economic sector in Pulang Pisau Regency to that of the broader region (Central Kalimantan Province). A sector is considered a base sector if its LQ value exceeds 1. The results are presented below.

Table 2. Location Quotient Results for Pulang Pisau Regency, 2010–2024

No.	Economic Sector	Average LQ Value	Classification
1	Agriculture, Forestry and Fisheries	> 1	Base Sector
2	Construction	> 1	Base Sector
3	Accommodation and Food Service	> 1	Base Sector
4	Information and Communication	> 1	Base Sector
5	Business Services	> 1	Base Sector
6	Education Services	> 1	Base Sector
7	Health and Social Services	> 1	Base Sector
8	Mining and Quarrying	< 1	Non-Base Sector
9	Manufacturing	< 1	Non-Base Sector
10	Electricity and Gas Supply	< 1	Non-Base Sector
11	Water Supply, Waste Management, and Recycling	< 1	Non-Base Sector
12	Wholesale and Retail Trade	< 1	Non-Base Sector
13	Transportation and Warehousing	< 1	Non-Base Sector
14	Financial and Insurance Activities	< 1	Non-Base Sector
15	Real Estate	< 1	Non-Base Sector
16	Public Administration, Defense, and Mandatory Security	< 1	Non-Base Sector
17	Other Services	< 1	Non-Base Sector

Source: Processed from BPS Data

The Location Quotient (LQ) analysis for Pulang Pisau Regency from 2010 to 2024 reveals that seven sectors are categorized as base sectors, indicated by LQ values greater than 1. These sectors include Agriculture, Forestry and Fisheries; Construction; Accommodation and Food Service; Information and Communication; Business Services; Education Services; and Health and Social Services. Their classification as base sectors suggests that these sectors are more dominant in Pulang Pisau compared to the provincial average, reflecting regional specialization and competitive advantage. In contrast, ten other sectors are classified as non-base, with LQ values below 1, implying that these sectors are underrepresented in the regency relative to the provincial structure. These results indicate that Pulang Pisau's economy is primarily driven by its natural resource base and service-oriented sectors, which should be prioritized in regional development planning and fiscal support strategies.

Shift-Share Analysis

Shift-Share analysis decomposes economic growth into three main components: Regional Share, Proportional Shift, and Differential Shift. These components allow for distinguishing between growth due to external influences, sectoral structure, and local competitiveness.

Table 3. Shift-Share Analysis of Pulang Pisau Regency, 2010–2024

Component	Value (Billion IDR)
Regional Share	2,128.361,77
Proportional Shift	-83.735,78
Differential Shift	140.696,36
Total Economic Growth (ΔY)	2,185.322,36

Source: BPS and Excel Calculations

The results of the shift-share analysis show that the total economic growth of Pulang Pisau Regency over the 2010–2024 period amounted to IDR 2,185.32 trillion. This growth is primarily driven by the Regional Share component, contributing IDR 2,128.36 trillion, indicating that general growth trends at the provincial level (Central Kalimantan) have had a strong external influence on the regency's economy. However, the Proportional Shift component is negative at IDR-83.73 billion, which suggests that Pulang Pisau has not specialized in sectors with relatively faster growth at the provincial level. In contrast, the Differential Shift contributes positively by IDR 140.70 billion, indicating that some sectors within the region possess higher competitiveness and outperform similar sectors at the provincial level. This component is crucial in identifying sectors with strong local advantages that can be further developed for strategic economic planning.

Klassen Typology Analysis

Klassen Typology categorizes sectors based on their growth rate and contribution to regional GDP, using provincial averages as benchmarks. Sectors are placed into four quadrants: advanced and fast-growing; advanced but declining; developing; and underdeveloped.

Table 3. Klassen Typology Results for Pulang Pisau Regency, 2010–2024

Quadrant	Classification	Economic Sectors
I	Advanced and Rapidly Growing	Agriculture, Forestry, and Fisheries; Construction; Business Services
II	Advanced but Depressed	Accommodation and Food Service; Information and Communication; Education; Health and Social Work
III	Potential to Grow	Mining and Quarrying; Manufacturing; Real Estate; Public Administration and Social Security; Other Services
IV	Relatively Underdeveloped	Electricity and Gas; Water Supply and Waste Management; Wholesale and Retail Trade; Transportation and Warehousing; Financial and Insurance Services

The Klassen Typology analysis categorizes the economic sectors of Pulang Pisau Regency into four distinct quadrants based on their growth rate and contribution to the regional economy compared to the provincial average. In Quadrant I, sectors such as Agriculture, Forestry and Fisheries; Construction; and Business Services are considered advanced and

rapidly growing, indicating both high growth and strong sectoral contribution—making them prime candidates for strategic development. Quadrant II includes sectors that are well-established but currently experiencing growth stagnation, such as Education, Health, and Communication. Quadrant III comprises sectors with potential for future growth but currently underperforming in contribution, suggesting an opportunity for investment and development intervention. Lastly, Quadrant IV consists of sectors that are lagging in both contribution and growth, such as Electricity and Gas, and should be addressed cautiously in development planning due to their low regional impact.

Overlay Analysis

Overlay analysis integrates the results from the three prior methods to isolate sectors that simultaneously demonstrate sectoral dominance, competitive strength, and favorable structural dynamics.

Table 5. Overlay Analysis of LQ, Shift-Share, and Klassen Typology

Economic Sector	LQ > 1	Competitive (DS > 0)	Klassen Quadrant I	Classification
Agriculture, Forestry and Fisheries	✓	✓	✓	Leading Sector
Construction	✓	✓	✓	Leading Sector
Information and Communication	✓	✗	✗	Not Leading
Accommodation and Food Service	✓	✗	✗	Not Leading
Business Services	✓	✗	✓	Not Leading
Education Services	✓	✗	✗	Not Leading
Health and Social Services	✓	✗	✗	Not Leading
Mining and Quarrying	✗	✓	✗	Not Leading
Manufacturing	✗	✓	✗	Not Leading
Electricity and Gas Supply	✗	✗	✗	Not Leading
Water Supply and Waste Management	✗	✗	✗	Not Leading
Wholesale and Retail Trade	✗	✗	✗	Not Leading
Transportation and Warehousing	✗	✗	✗	Not Leading
Financial and Insurance Activities	✗	✗	✗	Not Leading
Real Estate	✗	✓	✗	Not Leading
Public Administration and Social Security	✗	✓	✗	Not Leading
Other Services	✗	✓	✗	Not Leading

The overlay analysis—based on the intersection of Location Quotient (LQ), Shift-Share's Differential Shift (DS), and Klassen Typology—identifies Agriculture, Forestry and Fisheries and Construction as the only sectors that simultaneously satisfy all three criteria for leading sectors in Pulang Pisau Regency. These sectors have LQ values greater than one, indicating regional specialization; positive DS values, indicating competitiveness; and are classified in Quadrant I of Klassen Typology, signifying high growth and high contribution. The remaining sectors, despite occasionally fulfilling one or two criteria, do not meet all three conditions and thus are not categorized as leading sectors. This integrated approach helps

ensure that selected sectors for development policy are both locally dominant and competitively positioned for sustainable economic growth

Descriptive Statistics

Descriptive analysis provides an overview of the variables used in the regression model. The dependent variable is Regional Original Revenue (PAD), while the independent variables are the Gross Regional Domestic Product (GRDP) of the leading sectors identified through overlay analysis. Descriptive results are summarized in the table below.

Table 6. Descriptive Statistics of PAD and Leading Sectors (2010–2024)

Variable	Mean	Std. Deviation	N
Regional Original Revenue (Y)	55,228.90	42,125.23	30
Agriculture, Forestry, and Fisheries	1,109,559.47	228,332.94	30
Construction	450,857.67	104,629.43	30

The results show that the mean PAD for Pulang Pisau Regency from 2010 to 2024 was IDR 55,228.90 million, with a standard deviation of IDR 42,125.23 million, indicating relatively high variation in local revenue over the years. The average value of the Agriculture, Forestry, and Fisheries sector was IDR 1,109,559.47 million, with a standard deviation lower than the mean, suggesting moderate fluctuations around the average. Similarly, the Construction sector recorded a mean of IDR 450,857.67 million with a standard deviation of IDR 104,629.43 million, indicating relatively consistent sectoral performance across the period.

Multiple Linear Regression Analysis

Multiple regression analysis was used to determine the extent to which the two leading sectors influence PAD. The model used logarithmic transformation to reduce heteroscedasticity, as expressed in the following equation:

$$\mathbf{LogY = \beta_0 + \beta_1 logX_1 + \beta_2 logX_2 + e}$$

Description:
Y = PAD
X1 = Agriculture, Forestry, and Fisheries Sector
X2 = Construction Sector
β0 = Constant
β1 = Elasticity of PAD to GRDP of the 1st Leading Sector
β2 = Elasticity of PAD to GRDP of the 2nd Leading Sector
log = Logarithm
e = Error Term

Table 7. Multiple Linear Regression Results

Variable	B Coefficient	Std. Error	t-value	Sig.
(Constant)	-83,083.49	28,522.99	-2.913	0.007
Agriculture, Forestry, and Fisheries	0.336	0.079	4.245	0.000
Construction	-0.520	0.173	-3.011	0.006

The regression results show that the Agriculture, Forestry, and Fisheries sector has a positive and statistically significant effect on PAD, with a coefficient of 0.336 ($p < 0.001$). This implies that a 1% increase in this sector's output leads to an estimated 0.336% increase in local revenue, assuming other variables remain constant. In contrast, the Construction sector displays a negative and significant relationship with PAD, as indicated by its coefficient of -0.520 ($p < 0.01$). This negative sign suggests that despite its status as a leading sector structurally, increased output in construction may not yield direct fiscal benefits to local government revenue, potentially due to inefficiencies in tax collection, profit repatriation, or reliance on external contractors.

Partial t-Test

To assess the individual significance of each independent variable on PAD, a t-test was conducted.

Table 8. t-Test Results for Partial Significance

Variable	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t-value	Sig. (p-value)
(Constant)	-83,083.490	28,522.987	—	-2.913	0.007
Agriculture, Forestry and Fishery (X1)	0.336	0.079	1.821	4.245	0.000
Construction (X2)	-0.520	0.173	-1.291	-3.011	0.006

The t-test results reaffirm the regression findings. The Agriculture, Forestry, and Fisheries sector has a t-statistic of 4.245 and a significance level of 0.000, confirming its strong and positive influence on local revenue. Meanwhile, the Construction sector has a t-statistic of -3.011 and a significance value of 0.006, indicating that it significantly and negatively affects PAD. Therefore, the Agriculture sector remains a strategic revenue contributor, while the construction sector's relationship with revenue generation may require further scrutiny and policy intervention.

Simultaneous F-Test

The F-test was conducted to evaluate whether the independent variables, when considered jointly, have a significant impact on PAD.

Table 9. F-Test (ANOVA) Results

F	Sig.
14.363	0.000

With an F-statistic of 14.363 and a significance value of 0.000, the results indicate that the two independent variables jointly exert a statistically significant influence on PAD at the 5% level. This suggests that the model is valid for explaining variations in regional revenue and that the combination of Agriculture and Construction outputs is an important determinant

of PAD dynamics.

Coefficient of Determination (R^2)

The R^2 value indicates how much of the variation in the dependent variable (PAD) can be explained by the independent variables included in the model.

Table 10. Coefficient of Determination (R^2)

R	R^2	Adjusted R^2
0.718	0.515	0.480

The model yielded an R^2 of 0.515, meaning that approximately 51.5% of the variation in local revenue can be explained by the Agriculture and Construction sectors. The remaining 48.5% may be attributed to other factors not captured in the model, such as administrative efficiency, other economic sectors, fiscal policies, or socio-political dynamics. This level of explanatory power indicates a moderate fit, suggesting that while the identified sectors are important, additional variables should be considered in future studies to enhance model comprehensiveness.

Discussion

The results of the multiple linear regression analysis reveal that two leading sectors—Agriculture, Forestry, and Fisheries and Construction—have statistically significant effects on Pulang Pisau Regency's Regional Original Revenue (PAD) from 2010 to 2024. The regression model has strong explanatory power, as reflected by an R^2 value of 0.515, indicating that 51.5% of the variance in PAD can be explained by these two sectors.

Influence of the Agriculture, Forestry, and Fisheries Sector

The coefficient for the Agriculture, Forestry, and Fisheries sector is positive and statistically significant ($B = 0.336$; $t = 4.245$; $p < 0.001$). This implies that a 1% increase in GRDP from this sector corresponds to a 0.336% increase in PAD, holding other variables constant. The strong positive association supports the hypothesis that agriculture remains a vital economic pillar in Pulang Pisau, with direct implications for revenue collection, particularly from land-based taxes, retribution from agricultural markets, forest resource levies, and related economic multipliers.

This finding is consistent with prior research by Ramli (2019) and Syafitri (2021), who found that agriculture-based economies in rural or semi-rural districts in Kalimantan tend to exhibit strong elasticity with local revenue, especially when agricultural production is coupled with local value chains and processed commodities. In theoretical terms, this is in line with base sector theory, which posits that sectors with external demand generate surplus income that stimulates local fiscal growth. The positive relationship is also reinforced by the fiscal structure of regions like Pulang Pisau, where primary sectors contribute not only to GRDP but also to sources of PAD such as agricultural land taxes (PBB-P2), forest product levies, and

retributions from farming facilities and irrigation. Moreover, the sector's labor intensity ensures broader income distribution, stimulating consumption and service sectors that feed back into tax revenue.

The local government should continue strengthening agriculture-related infrastructure, such as irrigation systems, agro-logistics, and land productivity programs. Moreover, improving the fiscal instruments attached to this sector—such as optimal pricing of retributions, support for formalization of farmer groups, and downstream processing—can maximize PAD while maintaining equity.

Influence of the Construction Sector

Interestingly, the Construction sector exhibits a negative and statistically significant coefficient (B = -0.520; t = -3.011; p = 0.006), indicating that an increase in GRDP from construction is associated with a decline in PAD. This counterintuitive result suggests that although the sector may be growing in output, its contributions to local revenue are not proportionate—and in fact, may displace or crowd out other sources.

One plausible explanation lies in the structure and financing of construction activities in the region. Much of the construction work may be funded by central or provincial government transfers, with limited local procurement or tax generation. Additionally, large construction contracts are often awarded to external contractors, whose profits and taxes are not captured by the local fiscal system. These dynamics have been highlighted in previous studies, such as Handayani (2020) and Simanjuntak (2022), which found similar negative or insignificant relationships in other districts reliant on externally financed infrastructure. From a theoretical perspective, this pattern reflects the "enclave effect", where economic activity grows in a sector without sufficient integration into the local economic or fiscal structure. It also demonstrates the limits of relying on gross output figures (GRDP) without considering local content, labor absorption, and tax linkages.

To ensure the construction sector contributes meaningfully to PAD, local authorities should enforce local content policies, require contractors to register and pay local taxes, and incentivize the use of local labor and materials. Additionally, reevaluating licensing fees, construction permits, and business service taxes associated with construction projects could improve revenue capture.

The findings underline the need for sector-specific fiscal strategies. While the agriculture sector should be supported and leveraged for its strong contribution to PAD, the construction sector requires targeted reforms to align economic output with local fiscal benefits. Development planning should not merely prioritize sectors based on GRDP size, but also consider fiscal elasticity, tax linkage, and local integration of each sector. Furthermore, the government of Pulang Pisau Regency should enhance its revenue administration capacity, such as by improving PAD data systems, digitizing tax collection, and training staff in sector-based revenue forecasting. Diversifying PAD sources through value-added services in agriculture and regulating underperforming sectors like construction will strengthen fiscal independence and resilience.

CONCLUSION

This study concludes that among the various economic sectors in Pulang Pisau Regency, only Agriculture, Forestry and Fisheries and Construction qualify as leading sectors based on the combined results of Location Quotient, Shift-Share, and Klassen Typology analyses. However, when tested using multiple linear regression, only the Agriculture, Forestry and Fisheries sector shows a positive and statistically significant influence on Regional Original Revenue (PAD), indicating its strong role in driving local fiscal capacity. In contrast, the Construction sector, despite its structural and competitive strengths, exhibits a negative and significant relationship with PAD, likely due to its low fiscal retention and reliance on externally funded projects. These findings underscore the importance of distinguishing between economic growth and fiscal impact, and they call for policy interventions that prioritize high-yield, locally embedded sectors like agriculture, while reforming revenue mechanisms and procurement practices in construction to improve their contribution to local income.

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