

## **Leading and Emerging Sectors for Regional Development Planning: A Multi-Method GRDP Analysis**

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**Abstract:** This study examines regional economic structure during the 2015–2024 period using a multi-method regional analysis framework. Gross Regional Domestic Product (GRDP) data at constant prices were analyzed across 17 economic sectors, with the provincial economy serving as the reference region. The methods applied include Location Quotient (LQ), Dynamic Location Quotient (DLQ), Shift-Share Analysis focusing on the competitive share component, Klassen Typology, and Relative Sectoral Productivity (RPs). The study aims to identify leading and emerging sectors to support evidence-based regional development planning. The findings reveal a structural transformation characterized by declining competitiveness in traditional sectors such as agriculture and manufacturing, while new growth trajectories are emerging in information and communication, financial services, construction, and education. The integration of five analytical methods enables the classification of sectors into three policy priority groups: leading and sustainable sectors, emerging and scalable sectors, and declining sectors requiring revitalization. This classification provides a robust empirical basis for differentiated regional development strategies. The study recommends targeted policy interventions to strengthen high-performing sectors, accelerate promising sectors, and revitalize structurally lagging sectors.

**Keywords:** leading sectors; GRDP; regional analysis; structural transformation; regional development planning

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### **INTRODUCTION**

Indonesia's structural transformation has been marked by a reallocation of economic activity from agriculture toward industry and services, long regarded as signals of economic maturation (Hanifah & Yasin, 2024; Rifa'i & Listiono, 2021) . This transformation is far from uniform across space: interregional input-output evidence indicates provinces follow heterogeneous pathways, from agrarian to urban-oriented structures, accompanied by reconfiguration in labor markets (Abduh, 2025; Indriyanti et al., 2024). The process has been further shaped by globalization, technological progress, and digitalization, which re-organize institutions and business models and increasingly involve MSMEs (Anam & Lubis, 2025; Farliana et al., 2024; Fitri et al., 2025; Nurlaili et al., 2024).

At the same time, the transition faces institutional and governance challenges, inter-agency coordination gaps, bureaucratic capacity constraints, and infrastructural deficits, that can weaken development synergies, particularly in lagging regions (Farliana et al., 2024; Wang, 2025). Spatial disparities persist: less-urbanized areas remain more reliant on primary sectors and thus transform more slowly than metropolitan centers (Indriyanti et al., 2024). In this context, regional competitiveness hinges on innovation, human capital, infrastructure, and local governance, with sectoral clustering strategies in agriculture, fisheries, tourism, and manufacturing often cited as levers for upgrading (Chen et al., 2023; Dharmawan et al., 2025; Puteri et al., 2023; Warlina et al., 2023).

Theory and evidence jointly suggest that sectoral growth and sectoral shifts are intertwined. Long-run preference changes, intersectoral productivity gaps, and technological change drive labor reallocation from low- to higher-productivity activities, shaping aggregate growth and macroeconomic stability (Berg & Vu, 2021; Chindamo & Martin, 2022; Duernecker & Sánchez-Martínez, 2021; Gallé et al., 2022; Kulish et al., 2024). For subnational policy, this implies the need to reliably map leading and emerging sectors as a basis for targeted development.

West Sulawesi, within which Pasangkayu Regency is situated exhibits an economic structure still anchored in primary activities yet with scope for value-chain deepening through processing industries and supporting services (Boni et al., 2021; Suryani & Rinaldy, 2023). Evidence across Indonesian regions highlights the importance of domestic investment, governance quality, and education/skills upgrading for GRDP performance (Fitriady et al., 2022; Judijanto & Sudi, 2023). In this setting, Gross Regional Domestic Product (GRDP) offers a comprehensive lens for tracking regional economic health, sectoral imbalances, and diversification needs (Abdullah & Karim, 2021; Hilmawan & Clark, 2021; Ilham et al., 2021; Putra et al., 2023; Rahmahwati & Kirana, 2023).

However, many county- or city-level studies in Indonesia rely on one or two sectoral tools in isolation, risking partial and time-inconsistent recommendations. For evidence-based regional planning, a comprehensive approach is needed one that simultaneously assesses specialization, growth dynamics, sources of growth, typological position, and sectoral productivity efficiency. This study addresses that gap by integrating Location Quotient (LQ) to identify base sectors, Dynamic LQ (DLQ) to capture changes in specialization over time, Shift-Share to decompose sectoral growth into national share, industry mix, and competitive shift, Klassen Typology to classify sectors by growth-contribution profiles, and Relative Sectoral Productivity (RPs) to measure the efficiency of sectors in generating output relative to other sectors, and an Overlay procedure to synthesize cross-method results.

Using constant-price GRDP data for Pasangkayu Regency over 2015–2024, with West Sulawesi Province as the reference region, this paper aims to: (i) identify base sectors; (ii) assess emerging sectors; (iii) decompose sectoral growth drivers; (iv) map sectoral typologies; and (v) determine priority sectors via an overlay of results. The study contributes by providing (1) up-to-date empirical evidence on Pasangkayu's structural dynamics; (2) a multi-method framework that strengthens the robustness of sector prioritization; and (3) operational policy implications to support competitiveness upgrading and structural transformation at the regency level.

## LITERATURE REVIEW

### Structural Transformation and Sectoral Reallocation

Structural transformation refers to the reallocation of resources, labor, capital, and innovation across economic sectors, typically from agriculture to industry and services. This process is central to the evolution of national and regional economies, as sectoral shifts are strongly associated with productivity improvements and overall economic growth (Duernecker & Sánchez-Martínez, 2021; Kulish et al., 2024). In emerging economies, these transitions are shaped by global demand, domestic policy, and institutional capacity.

In the Indonesian context, structural transformation has followed a path of declining agricultural share and increasing contributions from industrial and service sectors (Hanifah &

Yasin, 2024; Rifa'i & Listiono, 2021). However, this transformation is spatially uneven across provinces and regencies, often influenced by variations in infrastructure, human capital, and access to technology (Abduh, 2025; Indriyanti et al., 2024). Studies highlight that this unevenness demands more localized approaches to understanding sectoral change.

### **Regional Competitiveness and Sectoral Dynamics**

Regional competitiveness is defined as a region's ability to attract and retain productive resources, firms, and talent, which leads to improved economic performance (Azmi et al., 2023; Chen et al., 2023). Key determinants include innovation capacity, institutional quality, infrastructure, and human capital. In Indonesia, sectoral competitiveness is often pursued through clustering strategies in agriculture, fisheries, tourism, and manufacturing (Aprilani et al., 2023; Dharmawan et al., 2025; Nugroho et al., 2025).

Local governments play an essential role in strengthening regional competitiveness through effective planning and investment in enabling environments (Puteri et al., 2023). As competitiveness is inherently dynamic, identifying which sectors are leading or emerging becomes critical for sustained economic growth.

### **GRDP as a Basis for Sectoral Analysis**

Gross Regional Domestic Product (GRDP) serves as a comprehensive indicator to measure sectoral performance at the regional level. It allows for tracking both the contribution and growth of economic sectors over time (Putra et al., 2023). In regions such as West Sulawesi, including Pasangkayu Regency agriculture remains a dominant contributor to GRDP. However, studies have underscored the risks of over-reliance on natural resource-based sectors and emphasize the importance of diversification (Hilmawan & Clark, 2021; Rahmahwati & Kirana, 2023).

Empirical findings also link GRDP growth with investment, education, and governance quality (Fitriady et al., 2022; Judijanto & Sudi, 2023). Sector-specific contributions to GRDP are thus not only a reflection of economic strength but also of institutional and policy effectiveness.

### **Economic Base Theory and Sector Identification Tools**

Economic Base Theory (EBT) posits that the growth of a region is driven by sectors that export goods and services beyond its boundaries. These base sectors generate external income that stimulates local economic activity (Asha & Juliannisa, 2023; Sjaf et al., 2021). In Indonesia, base sectors often include agriculture, mining, and manufacturing, while micro, small, and medium enterprises (MSMEs) and tourism have also emerged as critical components of local economic systems (Setyawati et al., 2023; Sulistyaningrum et al., 2022).

To operationalize EBT, several analytical tools are employed, such as Location Quotient (LQ) to measure sector specialization, Dynamic LQ (DLQ) to track changes in sector specialization over time, and Shift-Share Analysis to analyze sectoral growth through three main components: national share, industry mix, and local competitive effects. Klassen Typology classifies sectors based on their growth and contribution patterns, while Relative Sectoral Productivity (RPs) measures sector efficiency in generating output relative to other sectors. The Overlay Analysis then synthesizes results from all these methods to prioritize relevant sectors. While each method has limitations, combining them provides a more comprehensive and consistent view of sectors that should be prioritized in regional development planning.

## **METHOD**

### **Research Type and Analytical Approach**

This study employs a quantitative-descriptive design with a regional economic analysis approach, aimed at identifying leading and emerging sectors as the basis for regional development planning in Pasangkayu Regency. To ensure comprehensive and reliable findings, a multi-method analytical framework is adopted, integrating Location Quotient (LQ), Dynamic Location Quotient (DLQ), Shift-Share Analysis, Klassen Typology and Overlay Analysis. Each method offers a unique lens: from measuring sectoral specialization and dynamics to assessing growth sources and typological positions. The overlay method enables the synthesis of these diverse metrics to derive robust policy priorities.

The Location Quotient (LQ) is a widely used measure in regional analysis to determine the degree of sectoral specialization (Isserman, 1977). Dynamic LQ (DLQ) extends this by capturing specialization trends over time (Bendavid-Val, 1991). The Shift-Share approach adopted in this study follows the conventional decomposition model (Richardson, 1978), dividing growth into national share, industry mix, and competitive shift. Klassen Typology and multi-method overlay frameworks have also been employed in recent regional planning research (Kharisma et al., 2021).

### Data Sources and Units of Analysis

This study utilizes secondary data obtained from official publications of the Central Statistics Agency of Indonesia (Badan Pusat Statistik, BPS). The primary dataset includes Gross Regional Domestic Product (GRDP) at constant prices (base year 2010) for the period 2015 to 2024, disaggregated by 17 economic sectors. The data sources include the GRDP of Pasangkayu Regency by sector, as well as the GRDP of West Sulawesi Province, which serves as the reference region. Additionally, the dataset includes annual growth rates and contribution rates for each sector.

The unit of analysis consists of sectoral GRDP values over time, enabling a longitudinal analysis across a 10-year period. This approach provides a more comprehensive understanding of sectoral dynamics and structural changes in Pasangkayu during the study period.

### Analytical Techniques

#### Location Quotient (LQ)

The LQ is used to measure the degree of sectoral specialization of Pasangkayu Regency compared to West Sulawesi Province. Formula:

$$LQ = \frac{(GRDP_{i,d}/GRDP_{total,d})}{(GRDP_{i,r}/GRDP_{total,r})}$$

Where:

- $GRDP_{i,d}$ : GRDP of sector  $i$  in Pasangkayu
- $GRDP_{total,d}$ : Total GRDP in Pasangkayu
- $GRDP_{i,r}$ : GRDP of sector  $i$  in West Sulawesi Province
- $GRDP_{total,r}$ : Total GRDP in the reference region

Interpretation:

- $LQ > 1$  → Sector is a local economic base (specialized)
- $LQ = 1$  → Sector has neutral specialization
- $LQ < 1$  → Sector is under-specialized

#### Dynamic Location Quotient (DLQ)

DLQ captures the change in specialization over time, indicating sectoral dynamics.

Formula:

$$DLQ = \frac{LQ_{t+n}}{LQ_t}$$

Interpretation:

- $DLQ > 1$  → Increasing specialization → potential growth sector
- $DLQ = 1$  → Stable specialization
- $DLQ < 1$  → Decreasing specialization → weakening sectoral position

#### Shift-Share Analysis

This technique decomposes sectoral growth into three components:

- National Share (NS)
- Industry Mix (IM)
- Competitive Share (CS)

Formulas:

$$NS_i = g_n \times Y_{i,t}$$

$$IM_i = (g_i - g_n) \times Y_{i,t}$$

$$CS_i = (g_{i,d} - g_i) \times Y_{i,t}$$

Where:

- $g_n$ : Growth rate of total GRDP in the reference region
- $g_i$ : Growth rate of sector  $i$  in the reference region
- $g_{i,d}$ : Growth rate of sector  $i$  in Pasangkayu
- $Y_{i,t}$ : Initial GRDP value of sector  $i$

Interpretation:

- $CS > 0 \rightarrow$  Sector exhibits local competitive advantage
- $IM > 0 \rightarrow$  Sector benefits from favorable national industrial structure
- $NS \rightarrow$  Reflects average regional economic momentum

### Klassen Typology

This typology classifies sectors into four quadrants based on their growth rate and contribution relative to the reference region. Quadrant Classification:

1. Quadrant I (Advanced and Rapid Growth): High contribution, high growth
2. Quadrant II (Advanced but Depressed): High contribution, low growth
3. Quadrant III (Potential to Grow): Low contribution, high growth
4. Quadrant IV (Lagging): Low contribution, low growth

### Sectoral Growth Ratio (RPs)

To complement the prioritization framework, this study utilizes the Sectoral Growth Ratio (RPs) as an additional indicator to evaluate the relative dynamism of each sector. RPs compares the growth rate of an individual sector to the overall regional economic growth, offering insights into whether a sector is expanding faster or slower than the general economy. Formula:

$$RPs = \frac{LPS}{LPP}$$

Where:

- LPS refers to the average growth rate of a specific sector (Laju Pertumbuhan Sektoral),
- LPP refers to the average growth rate of the overall GRDP (Laju Pertumbuhan PDRB).

Interpretation:

- $RPs > 1 \rightarrow$  the sector is growing faster than the regional economy (relatively dynamic),
- $RPs = 1 \rightarrow$  the sector is growing at the same rate as the regional economy,
- $RPs < 1 \rightarrow$  the sector is growing slower than the regional economy (relatively stagnant).

Although not a standalone method, RPs serves as a supporting metric in refining the final sector prioritization process. It is particularly useful for validating the performance of sectors that may have low contribution ( $LQ < 1$ ) but are growing rapidly, thus identifying hidden champions or emerging sectors. Conversely, sectors with high contribution but low RPs values may require revitalization strategies.

### Overlay Analysis

Overlay analysis is used to integrate findings from LQ, DLQ, Shift-Share, and Klassen Typology to produce a consolidated sectoral prioritization map. The following decision rules are applied:

**Table 1.** Overlay Analysis Priority Categories

Criteria	Priority Category
$LQ > 1, DLQ > 1, CS > 0$ , Quadrant I or II	Priority 1 – Leading & Sustainable
$LQ \leq 1, DLQ > 1, CS \geq 0$ , Quadrant III	Priority 2 – Emerging & Scalable
$LQ > 1, DLQ < 1, CS < 0$ , Quadrant II or IV	Priority 3 – Revitalization Needed

This integration provides a basis for sectoral development policy formulation that is both methodologically sound and operationally relevant

## RESULTS AND DISCUSSION

### Research Results

This section presents the results of a multi-method quantitative analysis conducted on the economic structure of Pasangkayu Regency. The analysis integrates five key tools, Location Quotient (LQ), Dynamic Location Quotient (DLQ), Shift-Share (Competitive Share), Klassen Typology, and Relative Sectoral Productivity (RPs) to assess the specialization, growth trends, competitiveness, structural position, and productivity of 17 economic sectors based on constant-price GRDP data from 2015 to 2024. The findings are organized into two core tables. Table 1 presents the results of each method individually, while Table 2 integrates these findings into a composite sectoral prioritization framework.

**Table 2.** Sectoral Performance Indicators of Pasangkayu Regency (2015–2024)

No	Economic Sector	LQ	DLQ	CS (Competitive Share)	Klassen	RPs
1	Agriculture, Forestry, and Fisheries	1,064	0,329	-356,642	III	0,728
2	Mining and Quarrying	0,476	1,603	-6,697	IV	0,901
3	Manufacturing	2,628	1,997	-210,993	III	0,921
4	Electricity and Gas Supply	0,687	80,259	1,373	II	1,394
5	Water Supply, Waste Management, and Recycling	0,061	233,426	0,231	II	1,597
6	Construction	1,060	6,557	30,599	I	1,066
7	Wholesale and Retail Trade; Vehicle Repair	0,473	6,339	5,643	II	1,063
8	Transportation and Storage	0,948	3,569	-1,230	IV	0,990
9	Accommodation and Food Service Activities	0,527	2,955	-0,184	IV	0,969
10	Information and Communication	0,292	7,278	9,017	II	1,074
11	Financial and Insurance Activities	0,316	26,421	5,868	II	1,255
12	Real Estate Activities	0,501	5,006	3,986	II	1,031
13	Business Services	0,794	1,612	-0,116	IV	0,897
14	Public Administration and Mandatory Social Security	0,534	6,494	17,859	II	1,067
15	Education Services	0,544	8,905	5,837	II	1,108
16	Health and Social Services	1,005	1,652	-9,274	III	0,903
17	Other Services	0,252	3,736	0,765	IV	0,996

Table 1 provides a comprehensive diagnosis of 17 major economic sectors in Pasangkayu Regency, derived from five analytical indicators: Location Quotient (LQ), Dynamic Location Quotient (DLQ), Competitive Share (CS), Klassen Typology, and Relative Sectoral Productivity (RPs). This multi-method approach enables a nuanced understanding of which sectors are established (base sectors), emerging, competitive, efficient, stagnant, or in need of policy intervention.

The results indicate that the construction sector stands out as the strongest performer within the local economy. With an LQ of 1.060, it qualifies as a base sector, while its high DLQ score (6.557) signifies a consistent increase in specialization over time. Furthermore, the sector demonstrates strong local competitive advantages, reflected in its positive CS value of 30.599. It is also classified in Klassen Quadrant I and has a high productivity ratio (RPs = 1.066), reinforcing

its status as an efficient sector. This constellation of indicators identifies the construction sector as a leading sector a prime candidate for continued investment and strategic support.

The education sector also exhibits high performance across several indicators, despite not yet qualifying as a base sector (LQ = 0.544). Its DLQ score (8.905), positive CS (5.837), and strong productivity (RPs = 1.108) reveal a dynamic growth trajectory and operational efficiency. Although its current contribution remains moderate, it shows strong potential for structural transformation and is thus considered an emerging priority sector.

Several other sectors display similar characteristics, qualifying them as potentially emerging. These include Information and Communication, Financial and Insurance Services, Real Estate, Public Administration, and Wholesale and Retail Trade. While their LQ values remain below one indicating they are not yet dominant contributors their high DLQ and CS values suggest an upward growth trend. In addition, their RPs scores exceeding one imply that these sectors operate more efficiently than the regional average. These indicators suggest that these sectors may evolve into new economic anchors if adequately supported through public-private collaboration, digital infrastructure investment, and workforce development.

On the other hand, the analysis reveals that some sectors, although still classified as base sectors, are beginning to lose structural strength. Notably, agriculture, forestry, and fisheries maintains an LQ of 1.064, indicating a strong historical contribution. However, its DLQ (0.329) and highly negative CS (-356.642) signal a relative decline in both specialization and competitiveness. A similar pattern is observed in manufacturing, which, despite having a very high LQ (2.628) and DLQ (1.997), exhibits a negative CS (-210.993), highlighting a loss in local competitiveness. These findings underscore the need for revitalization strategies, including supply chain integration, technology adoption, and product diversification, to reverse these stagnating trends.

In contrast, sectors such as business services, accommodation and food services, transportation and warehousing, and other services fall under the low-priority or supporting categories. These sectors exhibit LQ values below 1, mixed or modest DLQ, negative or low CS, and below-average productivity. While these sectors may not be strategic drivers of regional economic transformation, they nonetheless provide critical employment opportunities and social value as part of the broader service economy.

The classification consistency with Klassen Typology reinforces the robustness of the analysis. Sectors in Klassen Quadrant II often align with those showing high DLQ and CS scores, whereas those in Quadrants III and IV exhibit stagnation or lagging performance.

In conclusion, this integrated interpretation confirms that regional economic planning must adopt a diagnostic and longitudinal approach. High-contributing sectors cannot be prioritized blindly if their growth dynamics and efficiency are faltering. Conversely, emerging sectors with dynamic trends and operational advantages should be promoted proactively, even if their current contributions are still modest. Such an approach ensures that regional policy remains responsive, forward-looking, and inclusive of structural transformation opportunities.

**Table 3.** Sectoral Prioritization Based on Overlay Category

No	Economic Sector	Overlay Category	Explanation
1	Agriculture, Forestry, and Fisheries	3 – Revitalization	Base sector but stagnant, DLQ < 1 and negative CS
2	Mining and Quarrying	2 – Potential	Non-base sector with DLQ > 1, moderate growth
3	Manufacturing	1 – Leading	Strong base, high DLQ and robust growth
4	Electricity and Gas Supply	2 – Potential	Non-base sector with very high DLQ and growth
5	Water Supply, Waste Management, and Recycling	2 – Potential	Small sector, but very rapid growth
6	Construction	1 – Leading	Base sector with high growth and competitiveness

7	Wholesale and Retail Trade; Vehicle Repair	2 – Potential	Non-base sector with favorable growth trend
8	Transportation and Storage	2 – Potential	Nearly base sector, increasing DLQ, but low competitiveness
9	Accommodation and Food Service Activities	2 – Potential	Growth is increasing despite small contribution
10	Information and Communication	2 – Potential	Non-base sector, but competitive and promising
11	Financial and Insurance Activities	2 – Potential	Non-base sector, high competitiveness and DLQ
12	Real Estate Activities	2 – Potential	Good DLQ and CS despite not yet being a major contributor
13	Business Services	2 – Potential	DLQ has increased but contribution and CS remain low
14	Public Administration and Mandatory Social Security	2 – Potential	High DLQ and CS, though contribution is still small
15	Education Services	2 – Potential	DLQ and growth are both very high
16	Health and Social Services	1 – Leading	Base sector, DLQ > 1, despite negative CS
17	Other Services	2 – Potential	Non-base sector with moderate DLQ and CS

Table 2 presents the integrated results of the multi-method sectoral analysis by consolidating five key approaches LQ, DLQ, Competitive Share (CS), Klassen Typology, and RPs into a single overlay framework. This composite prioritization classifies all 17 economic sectors in Pasangkayu Regency into three primary categories: Leading Sectors (Priority 1), Emerging Sectors (Priority 2), and Sectors in Need of Revitalization (Priority 3). The classification is based on a combination of performance metrics including sectoral specialization, growth dynamics, local competitiveness, and relative productivity.

Sectors classified as leading (Priority 1) include Construction, Manufacturing, and Education. These sectors demonstrate strong overall performance. Construction, for instance, exhibits high specialization ( $LQ > 1$ ), significant dynamic growth ( $DLQ = 6.557$ ), and strong competitive advantage ( $CS = 30.599$ ). Despite being relatively new, Education also exhibits rapid expansion with strong DLQ and productivity scores, justifying its position as a high-potential driver of long-term structural transformation.

The emerging or potential sectors (Priority 2) encompass the majority of sectors in Pasangkayu's economy, including Information and Communication, Financial and Insurance Services, Real Estate, Public Administration, and Wholesale and Retail Trade, among others. These sectors are not yet dominant in terms of contribution ( $LQ < 1$ ), but show clear signs of dynamic growth and increasing specialization over time ( $DLQ > 1$ ), supported by positive or moderate CS values and above-average productivity ( $RPs > 1$ ). For example, Electricity and Gas Supply and Water Supply and Waste Management are small in scale but exhibit very high DLQ values, suggesting rapid transformation and strong potential for future structural roles.

Meanwhile, Agriculture, Forestry, and Fisheries is categorized as a sector in need of revitalization (Priority 3). Although it has historically served as a base sector ( $LQ > 1$ ), the declining DLQ and negative CS indicate stagnation and erosion of competitive strength. Given the sector's social and economic significance, it demands policy attention particularly through revitalization strategies such as productivity enhancement, product diversification, value chain integration, and adoption of agricultural technology.

The overlay analysis demonstrates the value of combining multiple indicators into a unified diagnostic tool. Rather than relying solely on LQ or sectoral contribution, the framework emphasizes a dynamic, evidence-based view of sectoral transformation. This allows for the development of regional policy that is both forward-looking and aligned with the diverse growth trajectories of each sector.

In summary, the overlay prioritization underscores the necessity of differentiated policy approaches supporting leading sectors for consolidation, nurturing emerging ones for structural diversification, and intervening in stagnating sectors to regain competitiveness. The integration of empirical methods offers a robust foundation for strategic regional development planning in Pasangkayu Regency.

## **Discussion**

The findings of this study reveal distinct patterns of structural transformation and sectoral dynamics within Pasangkayu Regency, as reflected in the multi-method assessment using LQ, DLQ, Competitive Share, Klassen Typology, and RPs. These patterns underscore a regional economy in transition where traditional sectors such as agriculture, although still dominant in contribution, are beginning to lose competitiveness, while several service-based and tertiary sectors are emerging as new engines of growth.

### **Structural Shifts and Economic Base Challenges**

The decline in the performance of long-standing base sectors, particularly agriculture and manufacturing, indicates structural vulnerabilities. Despite a high LQ and historical importance, the agriculture sector in Pasangkayu shows a stagnating trend in DLQ and a negative competitive share, suggesting diminishing regional specialization and eroding competitiveness. This aligns with broader national patterns in Indonesia, where the agricultural sector is gradually being displaced by services and industrial activities due to labor migration and low productivity growth (Isnuradiansyah et al., 2025; Shang et al., 2022). Moreover, without targeted policy interventions, such shifts risk creating labor market imbalances and spatial inequalities across regions.

Economic Base Theory (EBT) provides a useful framework to interpret this transition. According to Meyer & Niyimbanira, (2021), regional development is often driven by externally-oriented sectors that serve as the economic base. However, in the case of Pasangkayu, several traditional base sectors now show declining productivity and growth, suggesting the need for revitalization policies, such as value chain integration, agricultural modernization, and enhanced infrastructure (Firmantoko et al., 2024; Subhi & Azkiya, 2022).

### **The Rise of Emerging and Dynamic Sectors**

The study identifies several non-base sectors that exhibit strong signs of emerging specialization and dynamism, including Information and Communication, Financial and Insurance Services, and Real Estate. Although these sectors have LQ values below 1, they show high DLQ, positive CS, and RPs > 1, indicating rapid growth, increasing efficiency, and rising competitiveness. These trends reflect a structural realignment consistent with global transitions, where service sectors have overtaken manufacturing as key drivers of GDP and employment in developing economies (Banerjee & Rajmal, 2022; Bhowmik, 2023).

Furthermore, these findings resonate with the Indonesian national agenda on digital transformation and economic diversification. Initiatives such as Making Indonesia 4.0 promote the development of digital infrastructure and service-oriented sectors to enhance productivity and regional integration (Farliana et al., 2024; Kunasegaran et al., 2024). The increasing performance of tertiary sectors in Pasangkayu suggests that local economies are beginning to benefit from these broader shifts, particularly through digital inclusion and the expansion of service-based entrepreneurship (Asma et al., 2023).

### **Sectoral Productivity, Competitiveness, and Policy Implications**

The integration of Relative Productivity Scores (RPs) and Competitive Share (CS) provides insight into sectoral efficiency and competitive positioning. Leading sectors such as Construction and Education not only exhibit strong LQ and DLQ values, but also maintain high RPs, suggesting that they are capable of driving regional growth efficiently. This is aligned with prior studies emphasizing the role of infrastructure and human capital development in enhancing regional economic resilience (Eljawati et al., 2021; Hudalah et al., 2021).

Conversely, sectors with low RPs and negative CS such as accommodation, transportation, and certain public services reveal structural inefficiencies that may stem from regulatory

constraints, skills mismatches, or inadequate market connectivity (Martinez et al., 2021; Méndez et al., 2023). Addressing these challenges requires a combination of institutional reforms, investment in education and skills training, and improved regulatory environments, particularly to support SMEs and informal sectors (Rohimah, 2023; Setyawati et al., 2023).

### **Regional Competitiveness and Sectoral Clustering**

The study also reinforces the interconnectedness between regional competitiveness and sectoral productivity. Agglomeration economies where productive sectors co-locate and benefit from shared infrastructure and knowledge can amplify growth and innovation within a region (Bianchi et al., 2021; Wu et al., 2022). Pasangkayu's emergent service sectors could benefit from clustering strategies that enhance collaboration, reduce costs, and attract skilled labor. Encouraging sector-specific zones (e.g., digital economy clusters, agro-processing zones) may help accelerate transformation and boost Pasangkayu's position within the regional economic hierarchy.

### **Sectoral Priorities Based on Overlay Results**

As part of the final synthesis, the overlay approach was employed to integrate the results of the five sectoral analysis methods LQ, DLQ, Competitive Share (CS), Klassen Typology, and Relative Sectoral Productivity (RPs) into a consolidated prioritization framework. This overlay classification grouped the 17 economic sectors in Pasangkayu Regency into three strategic categories: leading sectors (Priority 1), emerging sectors (Priority 2), and sectors requiring revitalization (Priority 3).

Sectors classified as leading include Construction, Manufacturing, and Education. These sectors demonstrate consistently strong performance across most indicators, such as high specialization ( $LQ > 1$ ), growing dynamic trends ( $DLQ > 1$ ), competitive advantages ( $CS > 0$ ), and above-average productivity ( $RPs > 1$ ). In particular, the construction sector stands out as a key economic driver, while the education sector although not yet dominant in contribution shows rapid growth and strategic relevance in supporting human capital development.

The emerging sectors, such as Information and Communication, Financial Services, Public Administration, and Real Estate, are characterized by increasing specialization (high DLQ), positive or stable competitiveness (CS), and high productivity, despite currently low sectoral dominance ( $LQ < 1$ ). These findings reflect broader structural transitions occurring in developing regions, where tertiary sectors are gradually gaining prominence as engines of inclusive and sustainable growth. With appropriate policy support and investment, these sectors could evolve into future base sectors.

On the other hand, the agriculture, forestry, and fisheries sector while still a dominant contributor in terms of GRDP is classified as requiring revitalization. Its declining DLQ and negative CS suggest weakening competitiveness and structural stagnation. Given its historical and socio-economic importance, revitalizing this sector will require targeted strategies such as technological upgrading, improved market access, and better value chain integration.

Overall, the overlay analysis underscores that sectoral prioritization should not rely solely on current contribution or specialization, but must also consider long-term growth trends, competitiveness, and productivity. This integrated classification provides a more comprehensive and evidence-based foundation for determining policy priorities and guiding regional development strategies in Pasangkayu Regency.

## **CONCLUSIONS**

This study has provided a comprehensive assessment of the economic structure of Pasangkayu Regency through a multi-method analytical framework that includes Location Quotient (LQ), Dynamic LQ (DLQ), Competitive Share (CS), Klassen Typology, and Relative Sectoral Productivity (RPs). The integration of these tools into a composite overlay model enabled the identification of sectoral development priorities across 17 economic sectors.

The findings reveal a regional economy in transition. While traditional sectors such as agriculture and manufacturing continue to play a significant role, signs of stagnation and

weakening competitiveness suggest the need for structural revitalization. Simultaneously, emerging sectors such as information and communication, financial services, education, and construction demonstrate dynamic growth, rising efficiency, and potential to evolve into new economic bases.

### **POLICY RECOMMENDATIONS**

Based on the sectoral prioritization results derived from the overlay approach, several strategic policy directions can be formulated to support economic development planning in Pasangkayu Regency. Sectors categorized as Priority 1, such as construction, education, and manufacturing, have demonstrated strong performance in terms of contribution, competitiveness, and productivity. These sectors should be strengthened through increased investment in essential and productive infrastructure, workforce development via vocational training and technical education, and the provision of incentive schemes for local enterprises to enhance inter-sectoral linkages within the regional economy.

Meanwhile, Priority 2 sectors classified as non-base but high-potential such as information and communication, financial services, and real estate, require acceleration strategies. Relevant policy measures include facilitating innovation and digital transformation through MSME empowerment, expanding access to ICT infrastructure and seed funding, and fostering strategic partnerships with higher education institutions and local business incubators. These interventions are expected to accelerate capacity building and improve the competitiveness of these sectors.

Sectors under Priority 3, namely agriculture, forestry, and fisheries, although still dominant in GRDP contribution, show declining specialization and competitive strength. Revitalizing these traditional sectors is critical and may be achieved through the modernization of production technology, adoption of efficient agricultural and fisheries tools, and strengthening agribusiness systems through upstream–downstream value chain integration. Microfinance schemes and expanded market access for smallholder farmers and fishers should also be prioritized to ensure the sustainability of primary sector livelihoods.

Beyond sectoral strategies, the success of regional economic development also depends heavily on institutional reform and improved governance. Local governments need to enhance coordination across agencies and sectors, reform local regulatory frameworks to better respond to market dynamics, and build institutional capacity for evidence-based planning, budgeting, and policy monitoring.

Finally, to accelerate structural transformation and promote more balanced regional growth, local authorities are encouraged to promote cluster-based development and regional economic integration. Establishing sector-specific economic zones, such as agro-industrial clusters, digital economy zones, or financial services hubs, can maximize agglomeration benefits and strengthen sectoral interlinkages. At the same time, regional integration within West Sulawesi Province should be facilitated through improved infrastructure connectivity and harmonized inter-district policy frameworks.

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