Indonesian Journal of Islamic Economics Research

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# Not all sectors are equal: LQ and DLQ Reveal Pangkalpinang's true economic driver

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**ARTICLE INFO**

*Keywords:*
Dynamic Location Quotient; Leading Sector; Location Quotient; Pangkalpinang.

**ABSTRACT**

Economic policy in Pangkalpinang City risks misallocation if relying solely on static data. This research identifies leading sectors (2018–2022) by integrating the Location Quotient (LQ) and Dynamic Location Quotient (DLQ). The study's novelty lies in using LQ to identify the current base and DLQ to project future potential, yielding a strategic map to differentiate between leading and mature sectors. Using time-series Gross Regional Domestic Product (GRDP) data from BPS, this research assesses each sector's specialization and dynamics. The results reveal a critical divergence: although 13 sectors were identified as base (LQ > 1), the analysis shows the information and communication sector is the only true leading sector (base and prospective). Other main base sectors, such as trade and construction, were found to be mature (base but non-prospective). This finding offers a practical implication: policy priorities must focus on accelerating the digital economy while maintaining stability in mature sectors.

How to cite:
Kusuma, M. & Rebeca, B.M. (2025). Not all sectors are equal: LQ and DLQ Reveal Pangkalpinang's true economic driver. *Indonesian Journal of Islamic Economics Research*, 7(2). https://doi.org/10.18326/ijier.v7i2.5506

## 1. Introduction

Balanced regional development is a core objective of Indonesia's national development agenda. This objective can be realized through inclusive and sustainable economic growth, which fundamentally aims to elevate the standard of living for communities throughout the country. Within this framework, development planning serves as a vital communication tool among stakeholders at both internal and external levels, as noted by Chimhowu *et al*. (2019). At the local level, economic development strategies include infrastructure expansion, business sector enhancement, human capital improvement, and other strategic efforts. However, the success of these strategies is highly dependent on their alignment with the unique potential and characteristics of each locality (Santoso, 2017). A mismatch between strategy and local context can hinder economic progress and result in inefficient resource utilization.

The effectiveness of economic development is often measured using indicators such as poverty rates, unemployment levels, economic growth, and per capita income (Chisadza & Bittencourt, 2019). Economic growth itself reflects the evolving dynamics of a region's economy. Nizar *et al.* (2013) explained that economic growth occurs when changes in production factors lead to an increase or decrease in the output of goods and services. Sjafrizal (2016) further emphasized that economic growth represents the expansion of a region's production capacity over time. Thus, it serves as a key indicator of the success of development policies.

In the field of regional economics, the basic economic approach is frequently used to identify sectors that act as primary drivers of local economies. Two common approaches are the income-based and labor-based methods. Tiebout (1962) argued that the income approach is more suitable, as it accounts for commuting labor and the challenges of converting part-time employment into full-time equivalents. One of the most widely used indicators for evaluating regional economic performance is the Gross Regional Domestic Product (GRDP), which reflects the contribution of various sectors to the total output of a region. To optimize economic development at the local level, policymakers need to identify which sectors contribute most significantly to GRDP. In this context, distinguishing between base, non-base, and leading sectors becomes crucial. Soleh & Maryoni (2017) categorized economic sectors into four groups—leading, mainstay, prospective, and lagging—to help prioritize development strategies.

The Bangka Belitung Islands Province is one of Indonesia's regions rich in natural resources and economic potential. It consists of two main islands and includes six regencies and one city, each with distinct economic characteristics. Several previous studies have identified key sectors in this province. Yulianti (2019) highlighted that mining and quarrying, public administration, agriculture, forestry and fisheries, real estate, health services, manufacturing, and wholesale trade are among the sectors that significantly contribute to the region's economy. These findings are supported by (Tanjung *et al*., 2022; Saputra *et al*., 2021; Kila, 2021; Agustina & Pamungkas, 2021; Hamzah, 2020; Negara & Putri, 2020), who identified leading sectors across various administrative areas in the province.

Pangkalpinang City, the capital of the Bangka Belitung Islands Province, holds a strategic position as both the administrative and economic hub. Located on the eastern coast of Bangka Island, the city was officially designated as the provincial capital on February 9, 2001. According to data from the Pangkalpinang City Central Bureau of Statistics, the city recorded the third-largest GRDP in the province in 2022, amounting to IDR 10.2 trillion or approximately 18% of the

province's total GRDP. The city's economy showed a positive trend from 2018 to 2022, although it experienced a slowdown in 2020 due to the COVID-19 pandemic. In terms of sectoral contribution, the wholesale and retail trade sector was the most significant contributor to the city's GRDP in 2022, accounting for 25%. Descriptive data showing the dominance of the trade sector is indeed important, but this information alone is insufficient to serve as a foundation for strategic policy. Knowing a sector is "large" does not automatically mean it is "prospective" or efficient at driving future growth. Policymakers in Pangkalpinang face the risk of suboptimal resource allocation if they rely solely on static contribution data, without understanding the fundamental growth dynamics and future potential of each sector.

A relevant study by Putra *et al*. (2024) already identified the leading sectors in Pangkalpinang City using an identical dataset and period (2018–2022) with the Location Quotient (LQ) method. That study concluded that 13 sectors were identified as base (leading) sectors. This finding, while statically accurate, presents a significant practical problem for policymakers. An analysis that stops at the LQ method gives the impression that all 13 of these sectors (such as Construction, Trade, Accommodation, etc.) possess an equivalent "leading" status and are all equally deserving of development priority. Herein lies the crucial research gap: a sector can be classified as a "base" (LQ > 1) yet simultaneously be experiencing stagnation or slowing growth ("non-prospective"). Without a dynamic analysis, policymakers in Pangkalpinang run the risk of allocating resources to "past champions" (mature sectors) while overlooking potential "new stars" (emerging sectors). Therefore, the novelty of this research lies in the analytical integration of the Location Quotient (LQ) to measure the current base with the Dynamic Location Quotient (DLQ) to project future growth potential. This comprehensive approach is essential for designing adaptive and sustainable development policies, aligning with the strategic direction outlined in the Pangkalpinang City Medium-Term Regional Development Plan 2018–2023, which emphasizes the importance of strengthening key economic sectors as pillars of regional development. The objective of this research is to fill this gap by analyzing the leading sectors in Pangkalpinang City during the 2018–2022 period, thereby providing a more comprehensive foundation for formulating effective and evidence-based economic development policies at the local level.

## 2. Research Method

This research adopts a descriptive quantitative approach, which is widely applied in regional economic studies to identify leading sectors based on their contribution and growth dynamics. This method was selected because it enables an objective representation of the economic structure and its changes over time through systematically compiled statistical data (Sugiyono, 2017). The research design is non-experimental, with the unit of analysis being the economic sectors in Pangkalpinang City. The city was chosen as the research location due to its role as the administrative and economic center of the Bangka Belitung Islands Province.

This research utilizes time-series data covering a five-year period from 2018 to 2022. This period was selected for its methodological significance: it is sufficiently long to capture sectoral trends while also encompassing a complete economic cycle, including the stable pre-pandemic conditions (2018-2019), the significant economic shock of the COVID-19 pandemic (2020), and the subsequent recovery phase (2021-2022). Analyzing this specific timeframe allows for an assessment of sectoral resilience and fundamental growth dynamics beyond typical conditions.

The data used are secondary data sourced from the Central Bureau of Statistics (BPS), particularly the Gross Regional Domestic Product (GRDP) data of Pangkalpinang City and the Bangka Belitung Islands Province by business field. As a key validation technique to ensure analytical accuracy, this study utilizes GRDP at constant prices. This approach validates the interpretation of growth dynamics by isolating real sectoral output growth and removing the distorting effects of inflation.

The analytical framework employed in this research is based on regional economic theory, which assumes that the demand patterns and productivity of sectors in a region are comparable to those in a reference area (either national or provincial). The main analytical tools used are the Location Quotient (LQ) and the Dynamic Location Quotient (DLQ). The LQ method is used to assess the degree of specialization of a particular sector in Pangkalpinang City relative to the same sector at the provincial level. According to Sjafrizal (2018), sectors with an LQ value equal to or greater than 1 are categorized as base sectors, meaning they not only meet local demand but also contribute to exports. Conversely, sectors with an LQ value below 1 are considered non-base sectors, which primarily serve local consumption.

**Location Quotient (LQ) Formula:**

$$LQ = \left(\frac{Eij/Ej}{Ein/En}\right)$$

Information:

*LQ* : Location Quotient coefficient
*Eij* : GRDP of sector *i* in Pangkalpinang City
*Ej* : Total GRDP in Pangkalpinang City
*Ein* : GRDP of sector *i* in Bangka Belitung Province
*En* : Total GRDP in Bangka Belitung Province

To capture the dynamic aspect of sectoral growth, the DLQ method is applied as described by Widodo (2006). DLQ measures the average growth rate of sectoral value added in the region compared to the reference area. Sectors with a DLQ value equal to or greater than 1 are classified as prospective sectors, indicating that they are growing faster than the same sectors at the provincial level and have the potential to become base sectors in the future. In contrast, sectors with a DLQ value below 1 are categorized as non-prospective.

**Dynamic Location Quotient (LQ) Formula:**

$$DLQ = \left[\frac{\left(\frac{1+gij}{1+gj}\right)}{\left(\frac{1+Gi}{1+G}\right)}\right]^t$$

Information:

*DLQ* : Dynamic Location Quotient index
*gij* : Growth of sector *i* in Pangkalpinang City
*gj* : Average growth of all sectors in Pangkalpinang City
*Gi* : Growth of sector *i* in Bangka Belitung Province
*G* : Average growth of all sectors in Bangka Belitung Province
*t* : Time period of analysis

The combination of LQ and DLQ values results in four sector classifications as described by Kuncoro (2012):

- Quadrant I: Base and Prospective
- Quadrant II: Non-Base but Prospective
- Quadrant III: Base but Non-Prospective
- Quadrant IV: Non-Base and Non-Prospective

The practical application of this analytical framework involved a straightforward, multi-step procedure. First, the time-series GRDP data (at constant prices) was collected and organized for both Pangkalpinang City and the Bangka Belitung Province. Second, the Location Quotient (LQ) value was calculated for each sector for each year. The average LQ value over the 2018–2022 period was then used to determine its final 'base' or 'non-base' status, providing a stable, non-volatile measure. Third, the Dynamic Location Quotient (DLQ) value was calculated for the entire period to identify 'prospective' or 'non-prospective' growth. Finally, these two distinct results (Average LQ and DLQ) for each sector were plotted into the four-quadrant matrix to synthesize the findings and derive strategic classifications (Leading, Mature, Potential, or Lagging).

## 3. Result and Discussion

### Result

Before presenting the findings from the Location Quotient (LQ) and Dynamic Location Quotient (DLQ) analyses, a descriptive overview of economic growth in Pangkalpinang City was conducted. This preliminary analysis aimed to understand the performance and characteristics of each economic sector over the 2019–2022 period. The data, presented in Table 1, reflect the annual growth rates of each sector based on constant prices.

**Table 1. Economic Growth of Pangkalpinang City, 2018–2022**

| Economic Sectors | Growth Rates Regional Domestic Product at Constant Prices (%) Pangkalpinang City | | | | |
|---|---|---|---|---|---|
| | 2019 | 2020 | 2021 | 2022 | Average |
| Agriculture, Forestry, and Fisheries | 3.20 | 6.23 | 2.90 | -0.59 | 2.94 |
| Mining and Quarrying | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Manufacturing | -10.35 | -4.35 | 29.40 | 9.31 | 6.00 |
| Electricity and Gas Supply | 31.12 | 0.87 | 2.45 | -3.95 | 7.62 |
| Water Supply, Waste Management, and Recycling | 2.08 | 5.71 | 1.54 | 4.18 | 3.38 |
| Construction | 9.98 | -1.53 | 4.16 | -2.01 | 2.65 |
| Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles | 2.27 | -6.31 | 4.68 | 9.36 | 2.50 |
| Transportation and Warehousing | 4.92 | -9.14 | 9.02 | 10.76 | 3.89 |
| Accommodation and Food Service Activities | 12.54 | -4.59 | 10.40 | 11.16 | 7.38 |
| Information and Communication | 17.58 | 17.84 | 9.04 | 10.91 | 13.84 |
| Financial and Insurance Activities | 5.26 | -6.72 | 4.19 | 4.24 | 1.74 |
| Real Estate | 2.20 | 3.90 | 6.38 | 5.79 | 4.56 |
| Business Services | 2.22 | -16.97 | 6.17 | 10.30 | 0.43 |
| Public Administration, Defense, and Compulsory Social Security | 9.86 | -6.76 | 4.39 | -1.51 | 1.49 |
| Education Services | 8.72 | -0.97 | 2.20 | 2.37 | 3.08 |
| Health Services and Social Activities | 10.69 | 1.05 | 15.00 | 2.01 | 7.19 |

| Economic Sectors | Growth Rates Regional Domestic Product at Constant Prices (%) Pangkalpinang City | | | | |
|---|---|---|---|---|---|
| | 2019 | 2020 | 2021 | 2022 | Average |
| Other Services | 11.04 | -6.04 | 3.25 | 8.25 | 4.13 |
| GROSS REGIONAL DOMESTIC PRODUCT | 3.26 | -3.00 | 9.26 | 6.21 | 3.93 |

Source: Processed from Pangkalpinang City Central Bureau of Statistics (2025)

The sectoral economic growth rates are shown in Table 1. The average economic growth rate in Pangkalpinang City during this period was 3.93% per year, indicating a general upward trend from 2019 to 2022. Although the city experienced a contraction of -3.00% in 2020 due to the COVID-19 pandemic, it rebounded strongly in 2021 with a growth rate of 9.26%. The sector with the highest average growth was information and communication, which consistently expanded throughout the period. The descriptive analysis of economic growth by sector is as follows:

Agriculture, Forestry, and Fisheries Sector: This sector showed an average annual growth of 2.94 percent. A decline was recorded in 2022 at -0.59 percent, while the highest growth occurred in 2020 at 6.23 percent.

Mining and Quarrying Sector: No economic growth was recorded in this sector, as its GRDP value remained at zero throughout the period.

Manufacturing Sector: This sector experienced an average annual growth of 6.00 percent, with the highest growth in 2021 at 29.4 percent. However, it faced contractions in 2019 (-10.35 percent) and 2020 (-4.35 percent).

Electricity and Gas Supply Sector: The average annual growth was 7.62 percent, with the highest growth in 2019 at 31.21 percent. A decline occurred in 2022 at -3.84 percent.

Water Supply, Waste Management, and Recycling Sector: This sector grew at an average of 3.38 percent per year, with the highest growth in 2020 at 5.71 percent. It did not experience any decline during the period.

Construction Sector: The average annual growth was 2.65 percent, with the highest in 2019 at 9.98 percent. Declines were recorded in 2020 (-1.53 percent) and 2022 (-2.01 percent).

Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles Sector: This sector grew at an average of 2.50 percent per year, with the highest growth in 2022 at 9.36 percent. A decline occurred in 2020 at -6.31 percent.

Transportation and Warehousing Sector: The average annual growth was 3.89 percent, with the highest in 2022 at 10.76 percent. A contraction occurred in 2020 at -9.14 percent.

Accommodation and Food Service Activities Sector: This sector grew at an average of 7.38 percent per year, with the highest growth in 2019 at 12.54 percent. A decline occurred in 2020 at -4.59 percent.

Information and Communication Sector: This sector experienced the highest average growth among all sectors, at 13.84 percent per year. The highest growth was in 2020 at 17.84 percent, and it did not experience any decline during the period.

Financial and Insurance Activities Sector: The average annual growth was 1.74 percent, with the highest in 2019 at 5.26 percent. A decline occurred in 2020 at -6.72 percent.

Real Estate Sector: This sector grew at an average of 4.56 percent per year, with the highest growth in 2021 at 6.38 percent. It did not experience any decline during the period.

Business Services Sector: The average annual growth was 0.43 percent, with the highest in 2022 at 10.30 percent. A significant decline occurred in 2020 at -16.97 percent.

Public Administration, Defense, and Compulsory Social Security Sector: This sector grew at an average of 1.49 percent per year, with the highest growth in 2019 at 9.86 percent. Declines were recorded in 2020 (-6.76 percent) and 2022 (-1.51 percent).

Education Services Sector: The average annual growth was 3.08 percent, with the highest in 2019 at 8.72 percent. A decline occurred in 2020 at -0.97 percent.

Health Services and Social Activities Sector: This sector grew at an average of 7.19 percent per year, with the highest growth in 2021 at 15 percent. It did not experience any decline during the period.

Other Services Sector: The average annual growth was 4.13 percent, with the highest in 2019 at 11.04 percent. A decline occurred in 2020 at -6.04 percent.

Following the descriptive analysis of sectoral economic growth in Pangkalpinang City, the research proceeded with the Location Quotient (LQ) and Dynamic Location Quotient (DLQ) analyses. Table 2 presents the results of the LQ analysis, while Table 3 shows the DLQ analysis for the period 2018 to 2022:

**Table 2. Location Quotient Analysis Results in Pangkalpinang City**

| No | Economic Sectors | LQ | | | | | Average LQ | Interpretation |
|---|---|---|---|---|---|---|---|---|
| | | 2018 | 2019 | 2020 | 2021 | 2022 | | |
| **1** | Agriculture, Forestry, and Fisheries | 0.25 | 0.25 | 0.24 | 0.24 | 0.23 | 0.24 | Non-Base |
| **2** | Mining and Quarrying | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | Non-Base |
| **3** | Manufacturing | 0.81 | 0.72 | 0.74 | 0.87 | 0.89 | 0.81 | Non-Base |
| **4** | Electricity and Gas Supply | 0.74 | 0.92 | 0.88 | 0.79 | 0.77 | 0.82 | Non-Base |
| **5** | Water Supply, Waste Management, and Recycling | 1.60 | 1.58 | 1.60 | 1.49 | 1.46 | 1.55 | Base |
| **6** | Construction | 1.23 | 1.26 | 1.28 | 1.23 | 1.20 | 1.24 | Base |
| **7** | Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles | 1.88 | 1.89 | 1.87 | 1.78 | 1.73 | 1.83 | Base |
| **8** | Transportation and Warehousing | 1.61 | 1.66 | 1.81 | 1.75 | 1.57 | 1.68 | Base |
| **9** | Accommodation and Food Service Activities | 1.43 | 1.48 | 1.46 | 1.40 | 1.39 | 1.43 | Base |
| **10** | Information and Communication | 1.94 | 2.02 | 2.09 | 2.01 | 2.00 | 2.01 | Base |
| **11** | Financial and Insurance Activities | 2.63 | 2.64 | 2.66 | 2.52 | 2.45 | 2.58 | Base |
| **12** | Real Estate | 1.61 | 1.63 | 1.63 | 1.56 | 1.54 | 1.59 | Base |
| **13** | Business Services | 1.79 | 1.81 | 1.76 | 1.70 | 1.66 | 1.74 | Base |
| **14** | Public Administration, Defense, and Compulsory Social Security | 1.24 | 1.27 | 1.23 | 1.17 | 1.15 | 1.21 | Base |
| **15** | Education Services | 1.94 | 1.97 | 1.98 | 1.90 | 1.85 | 1.93 | Base |
| **16** | Health Services and Social Activities | 1.62 | 1.63 | 1.64 | 1.59 | 1.56 | 1.61 | Base |
| **17** | Other Services | 2.60 | 2.62 | 2.66 | 2.55 | 2.51 | 2.59 | Base |

Source: Processed by the authors

**Table 3. Dynamic Location Quotient Analysis Results in Pangkalpinang City**

| No | Economic Sectors | DLQ | Interpretation |
|---|---|---|---|
| **1** | Agriculture, Forestry, and Fisheries | 0.94 | Non- Prospective |
| **2** | Mining and Quarrying | 0.00 | Non- Prospective |
| **3** | Manufacturing | 1.13 | Prospective |
| **4** | Electricity and Gas Supply | 1.06 | Prospective |
| **5** | Water Supply, Waste Management, and Recycling | 0.91 | Non- Prospective |
| **6** | Construction | 0.98 | Non- Prospective |
| **7** | Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles | 0.91 | Non- Prospective |
| **8** | Transportation and Warehousing | 0.95 | Non- Prospective |
| **9** | Accommodation and Food Service Activities | 0.97 | Non- Prospective |
| **10** | Information and Communication | 1.03 | Prospective |
| **11** | Financial and Insurance Activities | 0.93 | Non- Prospective |
| **12** | Real Estate | 0.95 | Non- Prospective |
| **13** | Business Services | 0.93 | Non- Prospective |
| **14** | Public Administration, Defense, and Compulsory Social Security | 0.92 | Non- Prospective |
| **15** | Education Services | 0.96 | Non- Prospective |
| **16** | Health Services and Social Activities | 0.96 | Non- Prospective |
| **17** | Other Services | 0.96 | Non- Prospective |

Source: Processed by the authors

Based on the LQ analysis results shown in Table 2, sectors with an average LQ value greater than or equal to 1 are classified as base sectors, while those with an LQ value less than 1 are considered non-base sectors. In Pangkalpinang City, thirteen sectors were identified as base sectors: 1) Water supply, waste management, and recycling; 2) Construction; 3) Wholesale and retail trade; repair of motor vehicles and motorcycles; 4) Transportation and warehousing; 5) Accommodation and food service activities; 6) Information and communication; 7) Financial and insurance activities; 8) Real estate; 9) Business service; 10) Public administration, defense, and compulsory social security; 11) Education services; 12) Health and social work activities; and 13) Other services. Meanwhile, four sectors were classified as non-base: 1) Agriculture, forestry, and fisheries; 2) Mining and quarrying; 3) Manufacturing; and 4) Electricity and gas supply.

According to the DLQ analysis in Table 3, sectors with a DLQ value greater than or equal to 1 are considered prospective sectors, while those with a DLQ value less than 1 are non-prospective. In Pangkalpinang City, three sectors were identified as prospective: 1) Manufacturing; 2) Electricity and gas supply; and 3) Information and communication. The remaining fourteen sectors were categorized as non-prospective.

## Discussion

The integration of Location Quotient (LQ) and Dynamic Location Quotient (DLQ) analyses provides a strategic matrix for classifying the economic sectors of Pangkalpinang City. By categorizing sectors into four quadrants, this discussion elaborates on the combined results to reveal not only the current economic drivers but also their future potential, along with the specific local challenges and opportunities that shape their trajectories.

**1) Quadrant I: Leading Sector (Base and Prospective)**

Sectors in this quadrant (LQ ≥ 1 and DLQ ≥ 1) are the true economic engines, possessing a strong existing base while also demonstrating high growth potential. Based on the analysis, only one sector qualifies for this category: Information and Communication.

This sector stands out as the primary driver for Pangkalpinang's future economic development, with its prospective nature being significantly shaped by recent local and national trends (Bangka Belitung Province Central Bureau of Statistics, 2021). The accelerated digital adoption during the COVID-19 pandemic served as a significant catalyst, as the internet became vital for maintaining productivity in work, education, and commerce (Ministry of Information and Communication, 2021). This shift has unlocked distinct local opportunities that bolster its growth. A key potential is the increasing number of MSMEs in Pangkalpinang that are leveraging the internet for product marketing, a strategy proven to expand their market reach and boost sales (Wibawa & Yusnita, 2019). Furthermore, the rise of new digital professions has created an additional layer of economic activity, with the content creator economy—individuals producing digital content for platforms like social media—driving further internet usage and creating new income streams (Kompas TV, 2020). This aligns with recommendations for the government to actively promote information and communication technology to foster sustainable economic growth (Purnomo *et al*., 2023).

However, to fully capitalize on this momentum, Pangkalpinang must navigate significant local challenges. The primary hurdle is the digital divide, where access to stable, high-speed internet may not be equitable across all areas of the city (Ardiaz, 2022). Another challenge lies in advancing digital literacy, particularly among traditional business owners who need targeted training to effectively transition to digital platforms (Nugroho *et al*., 2024). Therefore, while these factors collectively position the information and communication sector as the most prominent leading sector, its long-term success is conditional upon strategic interventions to overcome these local infrastructure and human capital gaps.

**2) Quadrant II: Potential Sectors (Non-Base but Prospective)**

Sectors in this quadrant (LQ < 1 and DLQ ≥ 1) are emerging stars. Their current contribution to the economy is not yet significant enough to be classified as a base sector. However, their rapid growth suggests they could become key economic drivers in the future if properly nurtured. The analysis identifies two sectors in this category**:** Manufacturing; and Electricity and Gas Supply. Their non-base status indicates that they currently serve primarily local demand and still rely on imports from other regions to meet local needs. However, their classification as prospective highlights their significant growth potential, which is supported by successful local empowerment initiatives. For instance, training programs conducted for the manufacturing industry in Pangkalpinang have successfully led to a more than 50 percent increase in sales for participating businesses (Saputro *et al*., 2019).

This demonstrates that while these sectors are currently small in scale, they are highly responsive to strategic interventions. The primary challenge for these potential sectors is scalability—transitioning from their current operational size to a level where they can become significant, export-oriented contributors to the regional economy. Therefore, the strategic policy implication is to nurture this nascent growth, shifting them from solely serving local demand to

becoming export-oriented contributors. Policies should focus on creating an ecosystem that supports their expansion, such as providing investment incentives, facilitating access to broader markets, and continuing targeted skill-development programs. Successfully scaling these sectors could diversify the city's economic base for the future.

**3) Quadrant III: Mature Sectors (Base but Non-Prospective)**

Sectors in this quadrant (LQ ≥ 1 and DLQ < 1) form the current backbone of Pangkalpinang's economy. They are established base sectors with significant contributions, but their growth has slowed and is less dynamic compared to their provincial counterparts. This is the largest category, including key sectors such as: Water Supply, Waste Management, and Recycling; Construction; Wholesale and Retail Trade; Transportation and Warehousing; Accommodation and Food Service Activities; Financial and Insurance Activities; Real Estate; Business Services; Public Administration, Defense, and Compulsory Social Security; Education Services; Health Services and Social Activities; and Other Services.

Their status as base sectors is firmly rooted in Pangkalpinang's function as the provincial capital and primary service hub. For instance, the Construction and Real Estate sectors have remained strong due to the continuous development of subsidized housing from 2018 to 2022 (Department of Housing and Residential Areas of Pangkalpinang City, 2022). Pangkalpinang alone accounts for 6,782 subsidized housing units, or approximately 42% of the province's total subsidized housing units (The Ministry of Public Works and Housing, 2023). Similarly, the city's role as a tourist gateway and administrative center solidifies the Accommodation and Food Service sector as a base industry. Valeriani (2019) observed that tourists often choose to stay in Pangkalpinang due to its status as the provincial capital and its diverse culinary offerings. Public Administration is also a base sector. This finding aligns with Yulianti (2019), which also identified Public Administration as a key base sector for the province as a whole. However, our analysis adds a critical nuance that a static LQ analysis like Yulianti's cannot provide: this sector is 'non-prospective'. This is a vital distinction for policymakers. It suggests that while the sector functions as a crucial economic stabilizer (due to its 'base' status), it should not be mistaken for a future growth engine.

This "non-prospective" classification reveals that these mature sectors face significant local challenges and growth constraints. The Construction sector, despite its strong base, was among the most severely affected by the COVID-19 pandemic, which resulted in slower growth (Ministry of Manpower, 2020). The Education Services sector also demonstrated weak performance, a decline linked to the underutilization of the education budget (Bangka Belitung Province Central Bureau of Statistics, 2021). These examples illustrate a broader trend for sectors in this quadrant: while they are foundational to the city's economy, they are vulnerable to economic shocks, market saturation, or internal inefficiencies that stifle their potential for future dynamic growth.

This finding demands a clear strategic policy shift for these sectors. The implication is not to pursue inefficient, large-scale expansion, but rather to pivot to policies focused on maintaining their stability, improving efficiency, and building resilience. For example, this could include policies that support diversification in the tourism sector or provide incentives for businesses to build financial reserves to withstand future economic shocks. Protecting this economic backbone

is crucial for employment and stability, even as the city looks to the leading sectors in Quadrant I for future growth.

**4) Quadrant IV: Lagging Sectors (Non-Base and Non-Prospective)**

Sectors in this quadrant (LQ < 1 and DLQ < 1) have a limited role in driving the city's economy, as they possess both a small base and slow growth potential. The analysis identifies two sectors in this category: Agriculture, Forestry, and Fisheries; and Mining and Quarrying.

This finding provides crucial local context that contrasts sharply with broader provincial-level studies. For instance, Yulianti (2019) highlighted both agriculture and mining as significant "base" sectors for the province as a whole. Similarly, Tanjung *et al*. (2022) identified agriculture as a priority sector for Kabupaten Belitung.

Our analysis, however, confirms that these provincial-level trends do not apply to Pangkalpinang City. The classification of these sectors is explained by distinct and inherent local characteristics that constrain both their current scale and future growth. Regarding the agricultural sector, Pangkalpinang is the only region in the province with no rice or paddy production, which inherently limits its capacity to become a base sector (Bangka Belitung Province Central Bureau of Statistics, 2022). Similarly, despite the province's reputation for tin mining, Pangkalpinang lacks mining land (Wibawa & Yusnita, 2019). This is further corroborated by Timah Tbk's 2021 annual report, which states that while major tin companies are headquartered in the city, their operational activities—both onshore and offshore—are located in other regencies, particularly Bangka (onshore) and West Bangka (offshore).

These structural limitations—the absence of significant arable land and mining areas—are the primary reasons these sectors are non-base. This distinction is vital, demonstrating that provincial-level strategies for these sectors (as suggested by (Yulianti, 2019) are inapplicable to the capital's service-based economy. Consequently, they also lack the potential for significant future expansion, which explains their classification as non-prospective. Therefore, from a strategic policy perspective, these sectors are not viable candidates for development initiatives aimed at driving regional economic growth, and resources would be more effectively allocated to sectors in other quadrants, especially Quadrant I.

**5) Synthesizing the LQ-DLQ Matrix: A New Policy Perspective**

This integrated analysis provides a starkly different policy map than a static-only (LQ) analysis would. As demonstrated in a recent study by Putra *et al*. (2024), which used an identical dataset and period (2018-2022), a simple LQ analysis correctly identifies 13 base sectors in Pangkalpinang. Our LQ findings in Table 2 confirm this initial result. However, stopping at this static analysis, as most regional studies do, would be misleading and could lead to significant policy error. A policymaker seeing 13 "leading" sectors might conclude they are all viable growth drivers, as suggested by Putra *et al*. (2024) that these sectors could be "relied upon" to "encourage development".

This is the primary value of our integrated LQ-DLQ approach: Our analysis reveals the critical insight that twelve of those thirteen base sectors are "mature" (Base but Non-Prospective), as shown by their DLQ < 1 values in Table 3. They are merely sustaining the current economy rather than driving future growth.

Only one sector—Information and Communication—was revealed to be a true "Leading Sector" (Base and Prospective). This synthesis demonstrates how the LQ-DLQ integration prevents the critical error of over-investing in stagnant "past champions" and instead pinpoints the single sector with the proven potential to drive future growth.

## 4. Conclusion

This research concludes that the information and communication sector was the sole true leading sector in Pangkalpinang City during the 2018–2022 period. The justification for this finding is its unique dual status as both a base sector and a prospective sector. This finding provides a strategic affirmation that the city's economic engine is shifting away from mature, traditional base sectors such as construction and trade which the analysis revealed to have slowing, non-prospective growth trends.

Methodologically, this study confirms that static-only regional analysis, such as a static Location Quotient (LQ), is insufficient for modern policymaking and can even be misleading. By demonstrating that 12 of the 13 base sectors are "non-prospective", our integrated analysis highlights the critical need for dynamic methods (like DLQ) to differentiate past champions from future growth engines. The primary practical implication is the urgent need for a differentiated policy strategy. Instead of a uniform approach, the findings provide an evidence-based foundation for the local government to: (1) Accelerate the leading sector (Quadrant I) by strengthening the digital ecosystem; (2) Maintain and build resilience in mature, job-heavy sectors (Quadrant III) like trade and construction, focusing on stability rather than costly expansion; and (3) Nurture the potential, emerging sectors (Quadrant II), such as manufacturing, to help them achieve scalability.

Nonetheless, this study has limitations. First, its reliance on LQ/DLQ treats each sector in isolation. The impact of this limitation is that the analysis cannot measure the inter-sectoral linkages or multiplier effects (e.g., how growth in the Information sector might support the Trade sector). Future research should employ an Input-Output (I-O) analysis to map these critical linkages. Second, the 2018–2022 observation period is heavily influenced by the significant economic shock of the COVID-19 pandemic. The impact is that it remains unclear whether the "non-prospective" status of mature sectors (Quadrant III) is a long-term structural stagnation or a short-term anomaly. Future research, using a longer time series (e.g., 10–15 years), is essential to validate these trends and confirm the long-term policy recommendations.

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