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STRATEGIC PLANNING FOR A LIVEABLE CITY: OPTIMIZING SUSTAINABLE AND COMPETITIVE ECONOMIC GROWTH IN BALIKPAPAN, EAST KALIMANTAN PROVINCE

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Abstract

This research designs a development strategy for Balikpapan City, focusing on sustainable economic growth, competitiveness enhancement, and facility improvement to support the transformation into a "Liveable City." Utilizing a quantitative descriptive method with secondary data from the Central Bureau of Statistics (2016-2022), the analysis employed tools such as Location Quotient (LQ), Shift Share, and Klassen Typology. The research findings reveal that the Processing Industry is Balikpapan's leading sector, demonstrating both comparative and competitive advantages despite experiencing fluctuations due to the COVID-19 pandemic. The Shift Share analysis identified nine high-competitive sectors, including Accommodation and Food Service, and Financial Services. Meanwhile, the Klassen Typology analysis discovered seven sectors showing rapid growth. To realize the "Liveable City" vision, economic growth optimization is crucial, focusing on leading sectors and those demonstrating high competitiveness. By leveraging existing economic potential, equalizing infrastructure, and supporting strategic investments, Balikpapan has the potential to become a successful example of achieving sustainable economic growth and providing a better quality of life for its residents. The study offers a comprehensive approach to urban development, emphasizing the importance of strategic sector development, infrastructure equality, and innovative economic strategies in creating a sustainable and competitive urban environment.

Keywords: **Location Quotient**, Shift Share, Klassen Typology, Leading Sectors

Introduction

In an era of rapid globalization, the challenges and opportunities for urban development in Indonesia have become increasingly complex. Sustainable and inclusive development is not only a necessity but also a demand from a society that is becoming more critical of their quality of life. Amidst this dynamic, Balikpapan, as one of the largest cities in East Kalimantan Province, emerges as an intriguing example in the effort to create a livable city. This city is not only known for its abundant natural resources but also for its potential to become a center for sustainable economic growth. However, despite Balikpapan's many advantages, challenges in urban planning and development persist. Economic development often becomes trapped in a narrow paradigm, focusing primarily on increasing the Regional Gross Domestic Product (PDRB) without considering broader social and environmental impacts (Agustina & Wijaya, 2024) This creates significant challenges for local governments in achieving a balance between economic growth and the quality of life for their citizens (Lestari, Ramdani, Purnamasari, & Nurfahmiyati, 2023).

Research by (Yulianita, Ramadhan, & Mukhlis, 2023) indicates that Balikpapan possesses strengths in urban governance and environmental management. Nevertheless, despite these advantages, the city still faces gaps in developing infrastructure and public facilities essential for supporting the daily lives of its residents. A critical question arises: to what extent can local government efforts optimize this potential to achieve inclusive and sustainable economic growth? Criticism of current development approaches suggests that many regions, including Balikpapan, tend to rely on specific sectors deemed superior without considering economic diversification. These sectors are often vulnerable to global market fluctuations, which can lead to long-term economic instability (Putri, Sukarniati, Asmara, & Purna, 2024). Therefore, an in-depth analysis of the comparative and competitive advantages of various economic sectors in Balikpapan is essential for formulating more holistic and sustainable development strategies.

Furthermore, strategic planning must involve active community participation in determining development priorities. Without community engagement, efforts to create livable cities risk failure because they may not reflect the needs and aspirations of local residents (Cholida, Lubis, & Salim, 2024)**).** This study aims to identify dominant sectors in Balikpapan and provide recommendations regarding the facilities that need to be developed to support sustainable economic growth and enhance the quality of life for its citizens. Thus, this research not only focuses on economic aspects but also invites us to think critically about how development can be conducted inclusively and sustainably. Only through a comprehensive and

participatory approach can Balikpapan optimize its potential as a livable city amidst increasingly complex global challenges.

Methods

This study employs a descriptive quantitative approach using secondary data obtained from BPS (Statistics Indonesia) and relevant literature. The research focuses on Balikpapan City, East Kalimantan, aiming to identify dominant economic sectors, analyze comparative and competitive advantages, optimize economic growth, and provide recommendations for facility development. The data utilized includes time series data on the GRDP of Balikpapan City and East Kalimantan Province for the 2016–2022 period. The analytical methods applied in this study include:

Location Quotient Analysis (LQ)

Analyzes base and non-base sectors to understand the comparative advantages of a region. The formula for calculating LQ is as follows:

$$LQ = \frac{V_i/V_t}{Y_i/Y_t}$$

Explanation:

V_i GRDP value of sector i in the smaller region

V_t Total GRDP in the smaller region

Y_i GRDP value of sector i in the larger region

Y_t Total GRDP in the larger region

Shift-Share Analysis (SS)

According to (Abidin, 2015), Shift-Share analysis is used to compare the growth rates across sectors within a region. Its primary goal is to identify sectors experiencing significant growth. This analysis consists of three main components:

$$D_{ij} = N_{ij} + M_{ij} + C_{ij}$$

Explanation :

D_{ij} = Shift of sector i in region j
N_{ij} = National share of sector i in region j
M_{ij} = Proportional shift of sector i in region j
C_{ij} = Differential shift of sector i in region j

$$SN_{ij} = M_{ij} + C_{ij}$$

Explanation:

SN_{ij} = Net Shift of sectior i in region j
M_{ij} = Proportional shift of sector i in region j
C_{ij} = Differential shift of sector i in region j

In Shift-Share analysis, an additional component known as net shift is also recognized. Net shift represents the sum of the proportional shift (Mij) and the differential shift (Cij). The formula for calculating net shift is as above.

Klassen Typology Analysis

The Klassen Typology Analysis classifies regions into four categories based on economic growth and GRDP per capita: Leading Sector, Mainstay Sector, Prospective Sector, Underdeveloped Sector. The formula for Klassen Typology, derived from Location Quotient (LQ) and Shift-Share (SS), combines the analysis of base sectors and economic growth to classify regions into four categories based on their comparative and competitive advantages.

Based on the results of LQ and Shift-Share calculations, regions can be grouped into four quadrants:

Quadrant I (Leading Sector)	**Quadrant II (Mainstay Sector)**
LQ > 1 and SNij > 1 Has advantages, both comparative and competitive.	LQ >1 and SNij < 1 Has competitive advantages, but lacks comparative advantages.

Quadrant III (Prospective Sector)	Quadrant IV (Underdeveloped Sector)
LQ < 1 and SNij > 1 Has comparative advantages, but lacks competitive advantages.	LQ < 1and SNij < 1 Lacks advantages, both competitive and comparative.

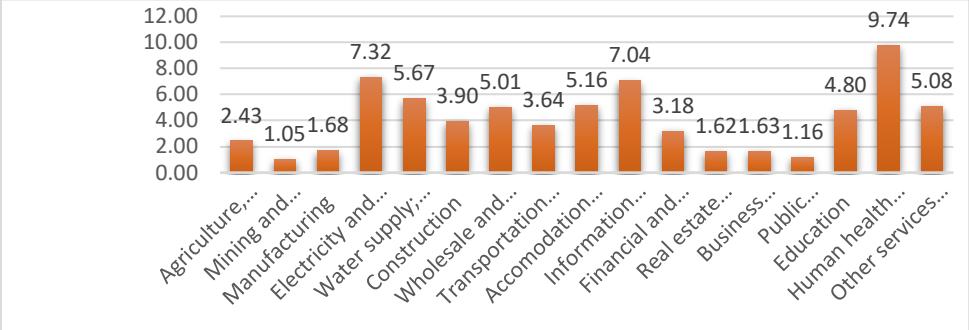
Table 1 Explanation of Quadrants

Source Author's Illustration (2023)

Results and Discussions

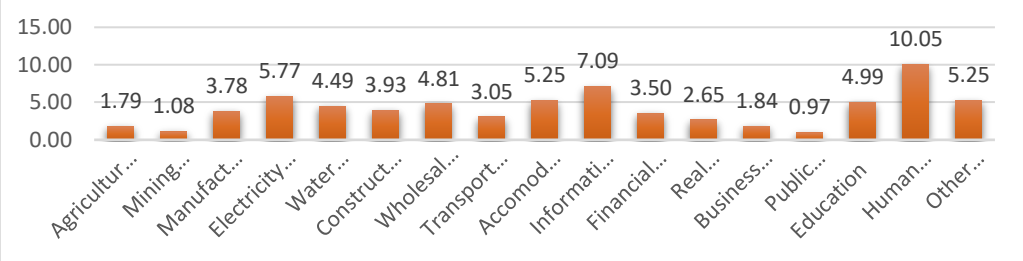
Location Quotient Analysis

Based on Table 1 below, it can be seen that the Gross Regional Domestic Product (GRDP) at constant prices by business sector in East Kalimantan Province experienced an increase from 2016 to 2019. However, there was a decline in 2020, followed by a recovery and continued growth in 2021 and 2022.



Figures 1 Gross Regional Domestic Product (GRDP) of East Kalimantan Province at Constant Prices by Business Sector (2016-2022)

The Gross Regional Domestic Product (GRDP) of Balikpapan City at constant prices for the period 2016-2022, as shown in Table 2, indicates a general increase in output from 2016 to 2022, with the exception of a decline in 2020. However, the decrease was within a similar range, and notably, there was a recovery in growth from 2021 to 2022.



Figures 2
Gross Regional Domestic Product (GRDP) of Balikpapan City at Constant Prices by Business Sector (2016-2022)

The decline in the Gross Regional Domestic Product (GRDP) of East Kalimantan in 2020 can be attributed to several key factors, such as the impact of the COVID-19 pandemic, which severely affected various economic sectors including tourism, hospitality, and mining. Restrictions on movement, business closures, and decreased global demand significantly influenced the economic performance of the region.

Analisis *Location Quoetient (LQ)*

The analysis of the Location Quotient (LQ) serves to classify economic sectors as either basic or non-basic by comparing the Gross Regional Domestic Product (GRDP) at constant prices in Balikpapan City with that of East Kalimantan Province.

Table 2 Results of Location Quotient (LQ) Analysis of Balikpapan City for the Years 2016-2022

No	Economic Sectors	LQ							Averages of LQ
		2016	2017	2018	2019	2020	2021	2022	
1.	Agriculture, forestry, and fishing	0,14675	0,13638	0,13514	0,13632	0,1297	0,13028	0,1297	0,1349
...	...	...	...	...	...	...	...	...	...
17.	Other services activities	1,25853	1,25916	1,22244	1,24737	1,21667	1,19462	1,184	1,2261

Source: Data processed by the author.

The calculations detail of table 3 are as follow :

SLQ = $\frac{Si/S}{Ni/N} = \frac{700989{,}75/73221462{,}06}{28639398{,}13/439003832{,}39}$ = 0,146749860 for 2016

As for the average LQ is $\frac{0{,}14675+0{,}13638+0{,}13514+0{,}13632+0{,}1297+0{,}13028+0{,}1297}{7}$ = 0,1349

Where, the results of SLQ calculations will be juxtaposed with the results of DLQ calculations, which will be followed by a typology klassen analysis with the output, namely knowing the superior sectors, potential sectors, developing sectors, and underdeveloped sectors.

Based on the coefficient indicators, the LQ values are categorized into two parts: LQ > 1 and LQ < 1. If the LQ is greater than 1, it indicates that the sector has a comparative advantage in that year, meaning it produces a significant output that can meet local needs or can still be exported. Conversely, if the LQ is less than 1, it indicates that the sector does not have a comparative advantage in that year.

Table 3 Description of Basic and Non-Basic Sectors

No.	Economic Sectors	LQ	Sector Basis/ Non Basis
1.	Agriculture, forestry, and fishing	0,134891736	Non Basis
2.	Mining and quarrying	0,000947682	Non Basis
3.	Manufacturing	2,787650737	Basis
4.	Electricity and gas	1,559315275	Basis
5.	Water supply; sewerage, waste manajement, and remediation activities	1,436664192	Basis
6.	Construction	1,700223501	Basis
7.	Wholesale and retail trade; repair of motor vehicles and motorcycles	1,48626519	Basis
8.	Transportation and storage	2,500660489	Basis
9.	Accomodation and food service activities	1,718707882	Basis
10.	Information and communication	2,214006707	Basis
11.	Financial and insurance activities	2,145948824	Basis
12.	Real estate activities	1,884995352	Basis
13.	Business activities	1,349563343	Basis

14.	Public administration and defence	0,691813817	Non Basis
15.	Education	0,930581059	Non Basis
16.	Human health and social work activities	0,901516951	Non Basis
17.	Other services activities	1,226107451	Basis

Source: Data processed by the author.

However, LQ analysis alone is not sufficient to identify which sectors are considered superior in a region because a high output does not necessarily mean it can compete with similar sectors from other areas in terms of quality. Interpreting this, it suggests that certain sectors in Balikpapan City are not able to fully meet their own needs, which may necessitate imports from outside the region. The lowest LQ value is found in the Mining and Quarrying sector, even though Balikpapan is known as a center for Indonesia's oil and gas industry due to its abundance of oil refineries. It is not surprising that many large companies, such as Chevron and Pertamina, operate in Balikpapan. Additionally, Balikpapan is rich in coal. Unfortunately, despite this abundant potential, it still has a low LQ value below 1.

There are many challenges related to environmental management, making it important for local governments, communities, and companies to collaborate to ensure that the mining sector operates sustainably. The involvement of local community empowerment, infrastructure development to support logistics activities, and anticipation of resilience against commodity price fluctuations are also necessary.

Shift-Share Analysis Result

The shift-share analysis for Balikpapan City was conducted using GRDP data at constant prices for the years 2016 and 2022. The benchmark region selected was East Kalimantan Province. Table presents the development of GRDP in Balikpapan City and East Kalimantan Province, as well as the growth rates of GRDP in both regions.

Table 4 Results of the Shift Share Analysis

	INDUSTRY	Nij/ RS	Mij/ PS	Cij/ DS	Dij	SNij
A	Agriculture, Forestry and Fishing	1072314538	1539389975	-3824542357	84380	-2285152382
B	Mining and Quarrying	5361972329	-152141369	-1707058639	2134	-3228472329
C	Manufacturing	6448829078	-3790374673	6499657495	9158112	2709282822
D	Electricity and Gas	1010754906	2356753584	-108730549	22802	1269448094
E	Water supply, Sewerage, Waste Management and Remediation Activities	7661727509	1130119197	-100331948	17960	1029787249
F	Construction	1325583525	1721639327	-4440335226	2603189	1277605805
G	Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	8946620132	1221812493	-1204714267	1996003	1101341067
H	Transportation and Storage	8594944695	463942813	-5358252525	787612	-7188243951

.

I	Accommodation and Food Service Activities	1558081488	1717112891	1727072087	329247	1734383612
J	Information and Communication	374722108	8449981257	1009736764	1320694	945971802
K	Financial and Insurance Activities	3670284385	1584125983	6856281323	594004	2269754115
L	Real Estate Activities	1929242099	-32614582	1293258215	173242	-1968199985
M,N	Business Activities	2947986446	2232777821	2339147723	34052	4571925544
O	Public Administration and Defence; Compulsory Social Security	1523459556	-3934521053	-7315946504	39841	-1125046756
P	Education	1441001171	1339956453	1308991759	291186	1470855629
Q	Human Health and Social Work Activities	5528242101	2124237388	1194469024	279651	224368429
R,S,T,U	/Other Services Activities	7017386309	6958705386	9110943047	148872	7869799691

Source: Data processed by the author.

The Shift-Share analysis is used to evaluate changes in economic sectors in Balikpapan City compared to the national level. This analysis includes three key indicators:

- Mij Component: Represents the growth rate of a sector. Mij > 0 indicates faster growth than the national average, while Mij < 0 signifies slower growth.
- Cij Component (Competitive Advantage): Measures competitiveness. Cij > 0 indicates higher competitiveness compared to East Kalimantan Province, whereas Cij < 0 reflects lower competitiveness.
- SNij Component: Describes the level of sectoral development. SNij > 0 signifies positive development, while SNij < 0 indicates stagnation.

The analysis reveals that the sectors of Accommodation and Food Services, Information and Communication, Financial and Insurance Activities, Business Activities, Education Services, Health and Social Services, and Other Services in Balikpapan City exhibit rapid growth, high competitiveness, and significant development compared to similar sectors in East Kalimantan.

Klassen Typology Analysis

Sectors with competitive and comparative advantages can be analyzed using the Klassen Typology, a method that combines Shift Share and Location Quotient (LQ) calculations to understand regional economic structure.

Table 5 Results of the Klassen Typology Analysis for Balikpapan City in 2016-2022

Indeks SS	LQ > 1	LQ < 1
(Cij+1)	**Leading Sector** C. Manufacturing	**Mainstay sector**
SS(Cij-1)	**Prospective sector** D. Electricity and Gas Electricity and Gas E. Water supply, Sewerage, Waste Management and Remediation Activities F. Construction G. Wholesale and Retail Trade; Repair of Motor H. Transportation and Storage I. Accommodation and Food Service Activities J. Information and Communication K. Financial and Insurance Activities L. Real Estate Activities M,N. Business Activities R,S,T,U. Other Services Activities	**Underdeveloped sector** A Agriculture, Forestry and Fishing B. Mining and Quarrying O. Public Administration and Defence; Compulsory Social Security P. Education Q. Human Health and Social Work Activities

Source: Data processed by the author.

Tabel 6 Explanation of Quadrants

Quadrant I Has advantages, both comparative and competitive	**Quadrant II** Has competitive advantages, but lacks comparative advantages
Quadrant III Has comparative advantages, but lacks competitive advantages	**Quadrant IV** Lacks advantages, both competitive and comparative

Source Author's Illustration (2023)

The quadrant determination (1, 2, 3, and 4) is based on LQ values, where an LQ>1 indicates comparative advantage, and Cij+ represents competitive advantage. When a sector demonstrates both advantages LQ greater than one and a positive Cij it is classified as a Leading Sector.The Klassen Typology Analysis of Balikpapan City from 2016-2022 reveals that the dominant sector category is Prospective Industries, comprising 11 sectors. One sector falls under the Leading Sector category, with no Mainstay Industries and 5 Backward Industries. The 11 sectors identified as Potential Sectors are particularly promising, as they have a significant potential to advance to Leading Sector status.

Through the analysis, we can identify that the Manufacturing Industry achieved both comparative and competitive advantages in Balikpapan City. The sectors exhibiting comparative advantage include Electricity and Gas Supply; Water Supply, Waste Management and Recycling; Construction; Wholesale and Retail Trade; Motor Vehicle and Motorcycle Repair; Transportation and Warehousing;

Accommodation and Food Service; Information and Communication; Financial Services; Real Estate; Business Services; and Other Services. However, no sectors demonstrated competitive advantage, and the Backward Industries include Agriculture, Forestry, and Fishing; Mining and Quarrying; Public Administration and Defense; Mandatory Social Security; Education Services; and Human Health and Social Work Activities.

Balikpapan City has a strong Manufacturing sector that has driven its economy, despite fluctuations during the COVID-19 pandemic. Analysis identified nine competitive sectors, including Accommodation and Food Service, Information and Communication, and Financial Services, with seven sectors showing rapid growth. To achieve the vision of a Liveable City that is comfortable and sustainable, it's crucial to optimize economic growth by focusing on these leading and high-competitiveness sectors. Enhancing infrastructure and attracting investment in strategic areas will help Balikpapan become an exemplary Liveable City, improving residents' quality of life. The government should proactively align infrastructure to attract investors and boost economic growth

Conclusion

This paper, "Strategic Planning for a Liveable City: Optimizing Sustainable and Competitive Economic Growth in Balikpapan, East Kalimantan Province," would not have been possible without the support and contributions of various individuals and organizations. We would like to express our gratitude to the local government of Balikpapan for their cooperation and willingness to share insights about the city’s development strategies. Their commitment to fostering a sustainable urban environment has been instrumental in shaping this research.We also appreciate the input from community members who participated in surveys and discussions, providing valuable perspectives on livability and economic growth. Their engagement has enriched the findings of this study.

Special thanks are due to various organizations focused on sustainable development, whose resources and publications informed our analysis. Their work continues to inspire efforts towards creating livable cities. Lastly, we extend our heartfelt appreciation to our families and friends for their unwavering support throughout this journey. Their encouragement has been a source of strength during the research process.

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