Tuijin Jishu/Journal of Propulsion Technology
ISSN: 1001-4055
Vol. 45 No. 1 (2024)

Analysis of New Growth Centers in Bantaeng Regency

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***Abstract*: -** The purpose of this research is to examine the growth center in Bantaeng Regency to analyze the current state of the existing regional activity center and propose alternative activity centers to support regional development and infrastructure equalization. Furthermore, the study aims to analyze the potential of a new growth center and formulate strategies for its development in Bantaeng Regency. This research falls into the category of quantitative research. The research methods employed include data collection from institutions, observations, questionnaires, and in-depth interviews. The analyses utilized include scree plot analysis, Location Quotient (LQ), and SWOT analysis. The scree plot analysis results indicate that the districts at hierarchy level 1 are Bantaeng and Pa'jukukang. Hierarchy level 2 includes Bissappu, Tompobulu, and Gantarangkeke. Hierarchy level 3 comprises Uluere and Eremerasa, while hierarchy level 4 is represented by Sinoa. The Location Quotient (LQ) analysis reveals that the highest basic sector is electricity and gas supply, followed by the industrial sector. The strategic concept that can be implemented includes land use distribution, strengthening supervision, formulation of environmental oversight regulations, regional growth studies or evaluations, restrictions on the ratio of foreign labor admission, and prioritization of local residents. Internal support comes from Pa'jukukang District through policy support and human resources via its educational facilities. External support is derived from Bantaeng District, Bulukumba Regency, Gantarangkeke District, and Tompobulu District in the form of human resources support, ease of licensing, accessibility, and support from natural resources.

Keywords: *Growth Center, Region, Bantaeng*

I. Introduction

The designation of growth centers in a region plays a significant role in formulating development policies [1]. The impact of development often leads to disparities in economic progress across various regions, posing a universal issue that needs addressing [2]. The primary goal is to reduce growth disparities among regions, promote even development, and ensure the sustainability of the development process [3]. According to the Central Statistics Agency (BPS) in 2022, the economic growth of Bantaeng Regency reached 15.45%, the highest among six regions with the highest economic growth in Indonesia, particularly in sectors such as agriculture, forestry, fisheries, and plantations. The industrial sector also contributes significantly [4].

According to BPS in 2022, the economic growth of Bantaeng Regency reached 15.45%, the highest among the six regions with the highest economic growth in Indonesia, especially in sectors such as agriculture, forestry, fisheries, and plantations. The industrial sector also contributes significantly [4]. GDP data indicates that the economic growth of Bantaeng Regency, reaching 15.45%, is still heavily influenced by strategic sectors such as agriculture, forestry, fisheries, and plantations. Furthermore, the industrial sector also makes a significant contribution to economic growth in Bantaeng Regency.

In its development, a central service area requires other areas as support for its functioning, aiming to avoid the concentration of the population in only one specific area, which can lead to population density in certain regions and uneven development within a regency. Development in areas with significant potential will stimulate economic growth and motivate population migration seeking income improvement. Therefore, a study is needed regarding the development center in Bantaeng Regency to analyze the current state of regional activity centers and propose alternative activity centers to support development in a region and distribute infrastructure more evenly.

This approach is expected to facilitate the formulation of development strategies for each sub-district through growth centers, capable of generating evenly distributed economic growth in each sub-district of Bantaeng Regency. These new growth centers are designed with dual objectives in regional development, aiming to stimulate regional growth and create spatial balance in the region. Thus, it is expected that these growth centers will play a role as growth drivers on a broader scale [5].

The objectives of this research are to analyze which sub-districts can be designated as new growth centers in Bantaeng Regency, identify the potential regions to become growth centers in Bantaeng Regency, and formulate strategies for new growth centers in Bantaeng Regency.

II. Material And Method

This research was conducted in Bantaeng Regency, located in the South Sulawesi Province, Indonesia.

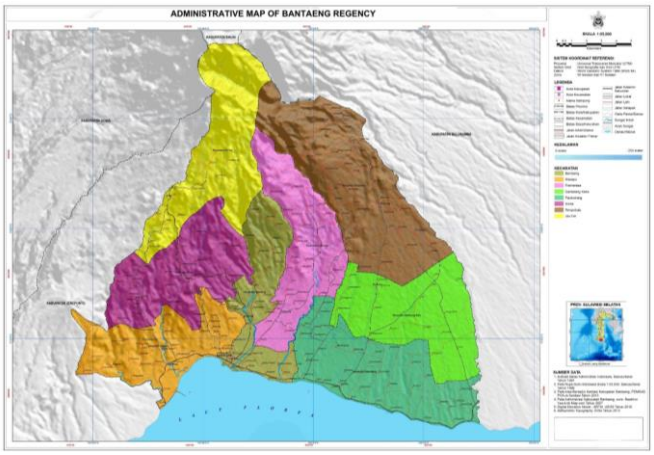

Figure 1. Administrative Map of Bantaeng Regency

This research falls into the category of quantitative research. The data utilized comprises both primary and secondary data, including facility information, data on leading sectors (Gross Regional Domestic Product or PDRB), the distribution of questionnaires, and in-depth interviews with the respondents. The respondents in this study consist of individuals from authoritative institutions involved in Bantaeng Regency's planning and academics with expertise in regional planning and development.

The analysis employed includes scalogram analysis to determine the hierarchy of supporting regional centers that contribute to the region as a hub for activity services [6]. Location Quotient (LQ) analysis is utilized to evaluate economic conditions, aiming to identify the specialization of economic activities or measure the relative concentration of economic activities to formulate leading sectors as the main sectors in an industrial economic activity [7]. Lastly, SWOT analysis is used to obtain strategies for the development of new growth centers in Bantaeng Regency. This analysis is valuable for formulating strategies based on the results supported by the opinions of the respondents.

III. Result And Discussion

a. Determination of New Growth Center in Bantaeng Regency

The scalogram analysis in this research involves a total of 117 types of functions or facilities. These facilities encompass various categories, including educational facilities, healthcare facilities, and places of worship. Meanwhile, economic facilities data involve restaurants/eateries and cooperatives. The next step in the

scree plot analysis involves converting all available facilities into a value of 1, while facilities that are not present are assigned a value of 0. After obtaining the total error, percentage calculation is performed. To determine the number of orders, the formula 1 + 3.33 log n is used, with n representing the number of sub-districts. Thus, the calculation results can be obtained as follows:

The Order Count = 1 + 3.33 Log n
Order Count = 1 + 3.33 Log 8
Order Count = 1 + 3.33 (0.90308)
Order Count = 1 + 3.0072
Order Count = 4.0072 rounded to 4 orders.

Based on the calculated order, 4 order classes were obtained for Bantaeng Regency. The next step involves calculating the interval class length. The range can be calculated using the formula:

$$\boldsymbol{Range} = \frac{\boldsymbol{Highest\ Facility\ - Lowest\ Facility}}{\boldsymbol{4}}$$

$$\boldsymbol{Range} = \frac{\boldsymbol{22-11}}{\boldsymbol{4}}$$

$$\boldsymbol{Range} = \boldsymbol{2.75}$$

Order/Hierarchy 1: ≥ 19.25 – 22
Order/Hierarchy 2: ≥ 16.50 – 19.24
Order/Hierarchy 3: ≥ 13.75 – 16.49
Order/Hierarchy 4: ≥ 11 - 13.74

In asserting that the results of the scree plot test have reached a satisfactory level of feasibility, the formula for the Coefficient of Reproducibility or (COR) is utilized as follows:

$$COR = 1 - \sum_{Nx\,K} e$$

$$COR = 1 - 22/(115\ x\ 8)$$

$$COR = 1 - 22/(920)$$

$$COR = 1 - 0{,}06875$$

$$COR = 0{,}93125$$

Therefore, the error rate in the scree plot analysis above is 0.93125, indicating that the scree plot analysis of Bantaeng Regency is considered to have achieved an adequate standard. The calculation results provide an overview of the analysis as follows:

Table 1. Hierarchy Based on Scree Plot Analysis

No	Sub-District	Total Facilities of Scalogram Analysis	Hierarchy
1	Bissapu	19	Hierarchy 2
2	Uluere	13	Hierarchy 3
3	Sinoa	11	Hierarchy 4
4	Bantaeng	22	Hierarchy 1
5	Eremerasa	16	Hierarchy 3
6	Tompobulu	18	Hierarchy 2
7	Pa'jukukang	22	Hierarchy 1
8	Gantarangkeke	19	Hierarchy 2

Source: BPS (Central Statistics Agency), Sub-District in Figures 2023, processed data.

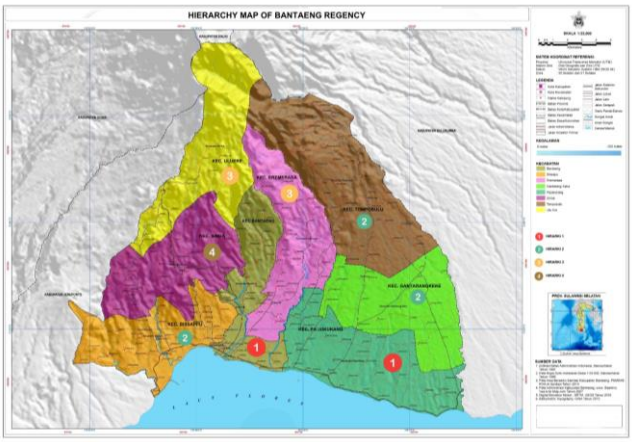

Figure 2. Hierarchy Map of Bantaeng Regency

The scree plot analysis results indicate that the sub-districts in Hierarchy 1 are Bantaeng and Pa'jukukang. Hierarchy 2 includes Bissappu, Tompobulu, and Gantarangkeke. Hierarchy 3 consists of Uluere and Eremerasa. Hierarchy 4 includes Sinoa.

b. Potential Areas as Growth Centers In Bantaeng Regency

After identifying service centers in Bantaeng Regency, the next step is to analyze the potential areas that serve as growth centers in the region. Determining the potential areas involves using the Location Quotient (LQ) analysis to identify the dominant economic sectors. These sectors can be considered as the base sectors in sub-districts that function as growth centers in Bantaeng Regency.

Table 2. The results of the LQ analysis and Sector Categories of Bantaeng Regency and the PDRB of South Sulawesi Province

No	Description	Bantaeng Regency GRDP	South Sulawesi Province GRDP	LQ	Sector Category
A	Agriculture, Forestry, and Fisheries	1,713.14	70,357.80	1.17	Base Sector
B	Mining and Quarrying	196.43	17,283.69	0.55	Non-base
C	Manufacturing Industry	1,263.92	78,421.55	1.38	Base Sector
D	Electricity and Gas Provision	38.02	405.21	4.51	Base Sector
E	Water Supply, Waste Management, Recycling	4.69	436.78	0.52	Non-base
F	Construction	977.98	43,609.99	1.08	Base Sector
G	Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	1,062.62	56,510.16	0.90	Non-base
H	Transportation and Warehousing	77.40	12,111.42	0.31	Non-base
I	Accommodation and Food Serving	58.37	5,135.60	0.55	Non-base
J	Information and Communication	222.40	28,966.31	0.37	Non-base
K	Financial and Insurance Services	140.46	11,720.73	0.58	Non-base
L	Real Estate	326.24	12,468.57	1.26	Base Sector
M,N	Business Services	7.92	1,644.24	0.23	Non-base
O	Government Administration, Defense, and Mandatory Social Security	378.84	15,132.58	1.20	Base Sector
P	Education Services	366.68	20,750.36	0.85	Non-base
Q	Health and Social Activities	177.22	8,643.79	0.99	Non-base
R,S,T,U	Other Services	89.51	4,967.33	0.87	Non-base

Source: Analysis Results 2023

From the LQ analysis, it can be concluded that several sectors can be considered as base or leading sectors in Bantaeng Regency. These sectors include agriculture, forestry, fisheries, manufacturing industry, electricity and gas provision, construction, real estate, as well as government administration, defense, and mandatory social security. The sectors with the highest base scores are electricity and gas provision, followed by the industrial sector. This aligns with the development trend in Bantaeng Regency in the industrial sector, as evidenced by the establishment of the Bantaeng Industrial Zone (Kawasan Industri Bantaeng or KIBA) based on Bantaeng Regent Regulation No. 23 of 2021 regarding the Detailed Spatial Plan for the Bantaeng Industrial Zone 2021-2041. The KIBA is planned in the Pa'jukukang Sub-District, which, according to the scree plot analysis, falls under Hierarchy 1.

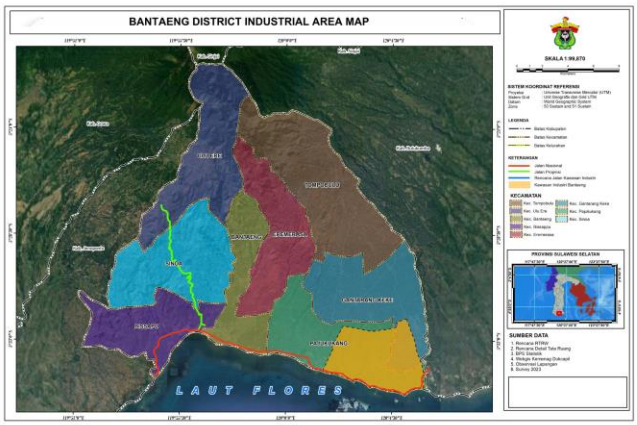

Figure 3. Bantaeng District Industrial Area Map

c. Development Of New Growth Centers In Bantaeng Regency

The determination of these growth centers must be accompanied by thorough planning and strategy formulation. Therefore, a planning analysis is conducted with the aim of analyzing the development strategies for growth center areas. The SWOT analysis is used to obtain strategies for the development of new growth centers in Bantaeng Regency. This analysis is valuable for formulating strategies based on the results supported by the opinions of respondents who have expertise in planning from various institutions in Bantaeng Regency and South Sulawesi Province.

Table 3. Strength Factors Weight and Rating

No.	Strength	Weight	Rating	Score
1	Development in the Pa'jukukang Sub-District can reduce population density in Bantaeng Sub-District	0.16	3.83	0.61
2	The geographical conditions and varied land in urban, mountainous, and coastal areas provide comprehensive natural resources support in Bantaeng Regency	0.17	4.17	0.72
3	Pa'jukukang Sub-District has the potential for an industrial area that can become a new livelihood for the people of Bantaeng Regency	0.19	4.67	0.90
4	Pa'jukukang Sub-District has sufficient and adequate infrastructure to become a new growth center in Bantaeng Regency	0.14	3.50	0.51
5	Pa'jukukang Sub-District has strong partnerships with other institutions or companies that support the growth of the region	0.15	3.67	0.56
Total Strength		**1.00**	**19.83**	**4.01**
Average			**0.80**	

Source: Data Processing Results, 2023

Table 4. Weakness Factors Weight and Rating

No.	Weakness	Weight	Rating	Score
1	The presence of industrial areas in Pa'jukukang Sub-District significantly affects the surrounding environment	0.28	4.50	1.24
2	There is a shortage of human resources or specific competencies in Pa'jukukang Sub-District	0.26	4.17	1.06
3	There is a history of conflict or instability that can be a weakness for the development of Pa'jukukang Sub-District	0.22	3.67	0.82
4	The existence of political or economic uncertainties that affect the growth of Pa'jukukang Sub-District in the development of Bantaeng Regency	0.24	4.00	0.98
	Total Weakness	**1.00**	**16.33**	**4.11**
	Average		**1.03**	

Source: Data Processing Results, 2023

Table 5. Opportunity Factors Weight and Rating

No.	Opportunity	Weight	Rating	Score
1	There are economic or industrial trends that can be utilized in Pa'jukukang Sub-District	0.23	4.00	0.91
2	There are government programs or investment incentives that can be utilized in Pa'jukukang Sub-District	0.25	4.50	1.15
3	Pa'jukukang Sub-District can become a connector for industrial growth that can influence the growth of Bantaeng Regency	0.27	4.83	1.32
4	There is the potential for collaboration with specific institutions or companies that can trigger growth	0.25	4.33	1.06
	Total Opportunity	**1.00**	**17.67**	**4.44**
	Average		**1.08**	

Source: Data Processing Results, 2023

Table 6. Threat Factors Weight and Rating

No.	Threat	Weight	Rating	Score
1	There is competition that can disturb security stability around the area	0.25	3.67	0.91
2	There is an environmental risk that needs to be anticipated	0.30	4.50	1.37
3	There are changes in regulations or policies that can hinder growth	0.21	3.17	0.68
4	Industrial development can trigger an influx of foreign workers that can threaten the economic stability of the local community	0.24	3.50	0.82
	Total Threat	**1.00**	**14.83**	**3.77**
	Average		**0.94**	

Source: Data Processing Results, 2023

The total weighting score is obtained by summing the weighting scores of all strategic factors. Based on the scoring and weighting results of internal and external factors, the results are as follows:

Internal Factors (IFAS):
Strengths (S) – Weaknesses (W)
= 4.01 – 4.11
= -0.10

External Factors (EFAS):
Opportunities (O) – Threats (T)

= 4.44 – 3.77
= 0.66

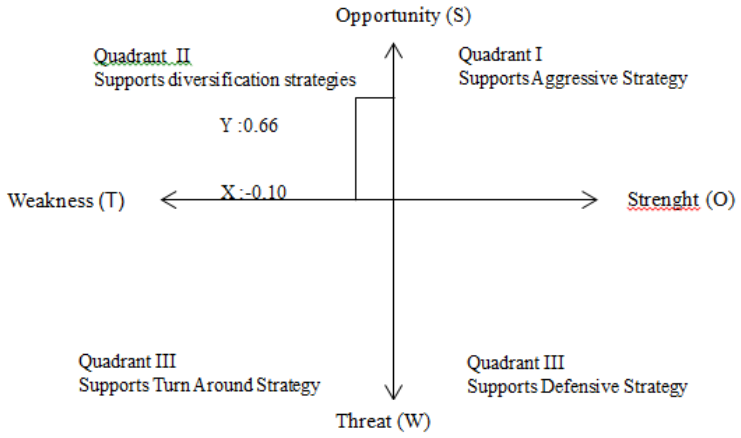

Figure 4. SWOT Quadrant Score Results

Based on the results of the strategy formulation analysis, it can be concluded that the appropriate strategic concept falls within quadrant 2 or the S-T strategy (strengths - threats). Therefore, the strategic concept that can be implemented includes the distribution of land use, strengthening supervision from the social aspect and maintaining public order, formulation of regulations and environmental monitoring, routine evaluation of regional growth policies, restriction of the ratio of foreign labor admission, and prioritizing local residents. Additionally, optimizing the potential of resources in each sub-district to synergize, preparing highly competitive and superior human resources as early as possible, and enhancing the capacity of the local community through training and scholarship provision.

The form of interaction (mutual support) from surrounding regions towards the growth center can be obtained internally from Pa'jukukang Sub-district itself, in the form of policy support and human resources through its educational facilities. External support comes from Bantaeng Sub-district, Bulukumba Regency, and Gantarangkeke Sub-district, comprising support in terms of human resources, ease of permits, accessibility, and support for natural resources.

IV. Conclusion

a. The results of the scalogram analysis indicate that the sub-districts in Hierarchy 1 are Bantaeng and Pa'jukukang, both having the highest scalogram scores. Hierarchy 2 includes Bissappu, Tompobulu, and Gantarangkeke, with scores indicating moderate potential. Hierarchy 3 consists of Uluere and Eremerasa, while Hierarchy 4 includes Sinoa.
b. The Location Quotient (LQ) analysis results provide information that several sectors in Bantaeng can be categorized as basic or leading sectors. These sectors involve agriculture, forestry, and fisheries, manufacturing, electricity and gas supply, construction, real estate, as well as government and defense administration. The sector with the highest basic score is electricity and gas supply, followed by the manufacturing sector.
c. The strategy that can be employed is the ST strategy, maximizing strengths to address existing threats. The strategic concept that can be implemented includes land use distribution, strengthening supervision, social aspects, and maintaining public order, formulation of regulations, and environmental monitoring. Additionally, regular evaluations of regional growth policies, restricting the ratio of foreign labor admission, prioritizing local residents, optimizing the potential of resources in each sub-district for synergy, preparing competitive human resources as early as possible, and enhancing the capacity of the local community through training and scholarship provision.
d. Support from surrounding regions towards the growth center can be obtained internally from Pa'jukukang Sub-district itself, in the form of policy support and human resources through its educational facilities. External support comes from Bantaeng Sub-district, Bulukumba Regency, and Gantarangkeke Sub-district,

comprising support in terms of human resources, ease of permits, accessibility, and support for natural resources.

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