

A Descriptive-Quantitative Analysis of Natural Resource Sub-Sectors and Their Impact on Regional Development Performance in Central Bangka Regency, Indonesia

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Abstract: *Central Bangka Regency is part of the Bangka Belitung Islands Province which is an integral part of the Unitary State of the Republic of Indonesia whose formation was based on Law Number 5 of 2003 concerning the Formation of South Bangka Regency, Central Bangka Regency, West Bangka Regency and East Belitung Regency in the Archipelago Province. Bangka Belitung. The purpose of the evaluation is to assist regional development planning documents, to identify potential natural resources sub-sectors in Central Bangka Regency related to regional development performance achievement indicators. The study approach used in this activity is descriptive-quantitative. Based on Location Quotient (LQ) analysis, there are 8 potential economic sectors or comparative advantage (base). There are 4 sectors that do not have a comparative advantage (non-base) or local and there are 3 sectors that are not potential (non-basic). Middle. In the second quadrant, there are commodities that have a slow growth rate but a large contribution to the GRDP of Central Bangka Regency. In the third quadrant, there are commodities that have a fast growth rate but a small contribution to the GRDP of Central Bangka Regency. In the fourth quadrant, there are commodities that have a slow growth rate and make a small contribution to the GRDP of Central Bangka Regency.*

Keywords: *Leading Sector of Natural Resources; Location Quotient; Input-Output*

JEL: R1,R15,Q34.

1. INTRODUCTION

Each region has natural resources which are capital and resources for that area. Almost every region has natural resources that have the potential to be developed. Regional potential is the overall strength that includes natural and human resources, both those that have been realized and those that have not been realized, and can be used for development and preserving the area. All materials, elements or ingredients found in an area and available naturally and useful for human life are referred to as natural resources. Natural resources include all elements of the environment, biological and physical order that are actually or potentially able to support life and meet the needs of human life (Soewartoyo & Soetopo, 2009). The economy in an area will arise from the potential possessed by each region. Each region will definitely have different economic potentials according to the resources they already have. And to continue to carry out economic development and growth from the existing potential results, targeted regional development is needed. This means that the development is in accordance with the potential possessed by the area. The economy can be said to grow if the per capita income of the people according to constant prices increases (Sari, 2022).

Economic condition is one indicator of regional economic development. The more the higher the economy in an area, the better the economy of the area (Setiawan & Primandhana, 2022). Central Bangka Regency is an area that has a fairly high diversity of natural resources. Natural resources in this Regency consist of renewable and non-renewable natural resources. Natural resources that cannot materialize include minerals such as tin and kaolin (Central

Bangka Regency Statistics Agency, 2022). Natural resources which can include forest products, agricultural products (rice fields), plantations, fisheries and animal husbandry. This potential, especially the potential of coastal and marine resources (fisheries) in Central Bangka Regency, has not been utilized optimally. These natural resources are scattered in every District and concentrated in the villages. Each village has natural resource characteristics according to geographical conditions, demography and the habits of the people so that each village has superior potential for natural resources that can be developed. By knowing the superior potential of each village, it will be known the superior potential of each sub-district which will eventually get the superior potential of the Regency. In general, the purpose of developing village potential is to encourage the realization of village/kelurahan community independence through developing superior potential and institutional strengthening and community empowerment.

2. LITERATURE REVIEW

2.1 Agriculture Sector

The Food Agriculture Sub-Sector is a food crop commodity that is cultivated in Regencies where there is a cultivated Horticultural Agriculture Sub-Sector. The Biopharmaceutical Agriculture sub-sector is a type of biopharmaceutical plant developed in Central Bangka Regency. There are ten plantation crop commodities cultivated in Central Bangka Regency. Plantation crops include pepper, rubber, coconut, coffee, palm oil, cocoa, areca nut, palm sugar, hazelnuts, cashew nuts. The livestock sector in Central Bangka Regency consists of domestic chickens, broilers, laying hens, ducks, kaolin cows and goats (BPS Kabupaten Bangka Tengah, 2022).

2.2 Fisheries Sector

The Capture Fisheries Sub Sector is Catch production is obtained as a result of the interaction between different types of fish become a goal with catching and fishing effort of various types of fishing gear. The interaction between fish and fishing gear will have an impact on increasing catch production. Fishing effort is also a measure to produce a number of catches or a measure of the productivity of a fishing unit. The size of fishing effort can be used as an illustration of the abundance of fish in an area of water that is used as a place for fishing activities. Policies to encourage the aquaculture sub-sector to become a leading sector in national fisheries development must be supported by two main components, namely the biophysical component and the socio-economic component (Badan Pusat Statistik Kabupaten Bangka Tengah, 2022).

2.3 Number of Aquaculture Households

Aquaculture households (RTP) are households that produce or cultivate aquatic biota, both fresh, brackish and marine biota with the aim of selling part or all of their cultivated products. Aquaculture households carry out fish cultivation activities with the aim of selling part or all of the produce. The level of welfare of aquaculture households can be seen through the amount of income received by the household concerned from its cultivation business activities. High levels of income will provide greater opportunities for households to meet their primary, secondary and tertiary needs.

2.4 Fishery Product Processing Sub Sector

Fishery products are also processing capture fishery products. The product is in the form of processed dried fish or boiled fish (salted fish). Processed fish production in Central

Bangka Regency is highest in Batu Behole Village, Pangkalan Baru District. While the production of fishery processing businesses into snacks, such as crackers, kretek, kemplang, shrimp paste, getas, ampiang and other fish processing, is included in MSME products.

2.5 MSME Sector

MSMEs are people's economic institutions that rely on the environment and self-reliance. MSMEs are businesses run by individuals, households or small business entities that rely on their own abilities. Nonetheless, MSMEs proved to be very resilient when Indonesia experienced the economic crisis in 1997. Therefore, MSMEs became one of the pillars of the Indonesian economy.

2.6 Trade Sector

The Creative Economy sub-sector is Creative Economy Development, which is the development of economic activities based on individual creativity, skills and talents to create individual creativity and creativity that has economic value and influences the welfare of society. The Creative Economy Sector in Indonesia according to RI Presidential Regulation Number 142 of 2018 is divided into 17 sub-sectors namely:

1. Application
2. Game Developer
3. Architecture
4. Design interior
5. Visual communication design
6. Product Design
7. Fashion
8. Film, Animation & Video
9. Photography
10. Crafts / crafts
11. Culinary
12. Music
13. Publishing
14. Advertising
15. Performing Arts
16. Art
17. Television.

2.7 Craft Creative Sub-sector

Crafts (Kriya) are part of the superior products of applied art in Central Bangka Regency. The Culinary Creative Economy sub-sector is the most developed sub-sector in Central Bangka Regency. Performing arts are a form of cultural presentation inherent in Indonesian society. Malay culture in Central Bangka Regency can be seen clearly when there are dance performances. Music is all kinds of business and creative activities related to education, creation/composition, recording, promotion, distribution, sales and performing arts. Photography is an industry that encourages the use of individual creativity in producing images of a photographic object, including light recording media, file storage media, and media that display information to create welfare and employment.

3. RESEARCH METHODS

3.1 Study Approach

The type of study approach used in this activity is descriptive-quantitative.

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Quantitative descriptive is a method or technique for collecting, processing, presenting and analyzing quantitative data so that it can provide a systematic, factual and accurate description of the facts, nature and relationships between the phenomena being investigated. The use of a descriptive-quantitative approach type aims to determine the condition of the potential of various sectors in Central Bangka Regency in more detail.

3.2 Analysis Method Location Quotient (LQ) and Input-Output (IO)

LQ Analysis Method

LQ analysis is used to determine which commodities are superior in each sector. LQ analysis is assessed by looking at the production value of a commodity against the overall value of the commodity in the sector. Then this value is compared with the production value of the same commodity at a higher level, in this case the sub-district level in which each village is located. The formula used is:

$$LQ_i = \frac{S_i/N_i}{S/N} = \frac{S_i/S}{N_i/N}$$

Information :

Lq_i = LQ value in sector i

S_i = The magnitude of a particular activity sector/commodity to be measured in the planning area

N_i = The total amount of a certain sector/commodity activity that will be measured in a wider area

S = the total amount of all sector/commodity activities to be measured in the planning area

N = the total amount of all sector/commodity activities to be measured in a wider area

The selection of each alternative for superior commodities is determined based on the research/opinions of informants obtained through meetings or during field monitoring and evaluation with resource persons at the sub-district level (Sub-district level Facilitators, Sub-district Agriculture/Fisheries Extension Officers and Sub-district Head of Economic Affairs). The formulation of the Exponential Comparison Method analysis adopted from Marimin (2004) is as follows:

$$\text{Total Nilai (TNI)} = \sum_{j=1}^m (\text{RK}_{ij}) \text{TKK}_j$$

Information :

TNI = Total value of alternative to (i)

RK_{ij} = Degree of relative importance of the jth criterion in the decision choice i

TKK_{ij} = The degree of importance of the jth decision criterion, TKK > 0 ; round

i = 1,2,3...n ; n = Number of decision choices

m = Number of decision criteria

Bangka Regency into four groups. This grouping aims to position the superior product in terms of the theory of excellence. These groupings are:

1. Comparative superior products, namely products produced through the domination of natural resources, where other regions are unable to produce similar products.
2. Competitive superior products are products that are produced in an efficient and effective manner. These products have added value and business competitiveness, both in terms of quality, quantity, continuity and price.

3. Specific superior products, namely products resulting from the innovation and competence of entrepreneurs and the products produced have advantages because of their specific characteristics.
4. Strategic superior products are superior products because they have an important role in social and economic activities.

3.3 Input-Output (IO) Analysis Method

Input-Output table is basically a statistical description in the form of a matrix which presents information about transactions of goods and services that are interrelated between economic activity units (sectors) in a region at a certain period. As a quantitative model, the Input-Output table provides an overall picture of: 1. The structure of the national or regional economy which includes the structure of output and added value of output; 2. intermediate input structure, namely the use of various goods and services by a production sector; 3. the structure of the supply of goods and services, both in the form of domestic production and goods originating from imports; 4.

Table 1. Form of Input-Output Table

I (nxn) Transactions between sectors	II (nxm) Final request and import
III (pxn) Primary Inputs	IV (pxm)

Source: BPS, Indonesian input-output

The output produced by a sector i is distributed by the two users. The first is the user who uses the output for further production processes, namely the production sector; and the two users who use the output for end users are called end users. For the first user, the output of sector i is the raw material or intermediate input, while for the second user, the output of sector i is the final demand. In intermediate inputs, there can be flows of movement of goods between sectors, for example from sector i to sector j and there can also be movements within the sector itself (intra-sectoral movements), transfers occur from sector i to sector j if $i = j$. For example the value of the flow of goods from sector i to sector j denoted z_{ij} ,

$$X_i = z_{i1} + z_{i2} + \dots + z_{in} + Y_i \quad (2.1)$$

The above equation shows the distribution of sector i output. The output of sector i (X_i) is distributed to other production sectors (z_{in}) and can also be allocated to end users (Y_i). End users consist of households, companies, governments and foreign parties. The final demand for households is household consumption, the final demand for companies is investment, the final demand for the government is government spending, and the final demand from abroad is exports.

The above demand also shows that there are n sectors in the economy, thus there are n equations for the entire economy. $X_1 = z_{11} + z_{12} + \dots + z_{1n} + Y_1$ $X_2 = z_{21} + z_{22} + \dots + z_{2n} + Y_2$ \dots $X_n = z_{n1} + z_{n2} + \dots + z_{nn} + Y_n$ (2.2) If notated in the form of a matrix table, for each column one column vector can be written which contains:

$$\begin{pmatrix} z_{11} \\ z_{21} \\ z_{31} \\ \vdots \\ z_{n1} \end{pmatrix}$$

The coefficient Z_{11} reflects the amount of input needed by sector 1 which comes from sector 1 itself and Z_{21} is the amount of input for sector 1 which comes from sector 2. The column vector above shows the input structure of sector 1. The vector shows the amount of sector 1 input from other production sectors and also from the sector itself. Such an input is called an intermediate input. In addition to intermediate inputs, the production process also requires primary inputs, including labor, capital, land, and others. By using these factors of production, there will be remuneration that will be received. This production factor compensation is called the added value of the production process.

Table 2. Input-Output Transactions

		Production Sector		Final Request				Total Outputs
		1	2	C	I	G	E	
Production Sector	1	Z_{11}	Z_{12}	C_1	I_1	G_1	E_1	X_1
	2	Z_{21}	Z_{22}	C_2	I_2	G_2	E_2	X_2
Mark Plus	L	L_1	L_2	L_c	L_t	L_G	L_E	L
	N	N_1	N_2	N_c	N_t	N_G	N_E	N
Import	M	M_1	M_2	M_c	M_t	M_G	M_E	M
Total Inputs	X	X_1	X_2	C	I	G	E	X

Source: Input-output analysis, Suahasil Nazaara.

The table above shows transactions between components of an economy at one point in time. It is assumed that in the economy there are only two production sectors, namely sectors 1 and 2, there are four components of final demand, namely household consumption (C), corporate investment (I), government spending (G), and foreign exports (E). the two factors of production, namely labor with wage remuneration (L) and capital with rental remuneration (N). Besides that, production sectors and end users can also buy goods from abroad in the form of imports (M). In accordance with the definition and also as seen in the table above, the total input equals the total output. From the existing Input Output transaction table, intermediate input matrices and primary matrices can be formed; Intermediate input matrix (Fajar, 2021).

$$Z = \begin{bmatrix} Z_{11} & Z_{12} \\ Z_{21} & Z_{22} \end{bmatrix}$$

Primary Input Matrix :

$$W = \begin{bmatrix} L_1 & L_2 \\ N_1 & N_2 \end{bmatrix}$$

The form of the final demand matrix for each sector of the economy is:

$$Y = \begin{bmatrix} C_1 + G_1 + I_1 + E_1 \\ C_2 + G_2 + I_2 + E_2 \end{bmatrix} = \begin{bmatrix} Y_1 \\ Y_2 \end{bmatrix}$$

By knowing the z_{ij} and X_j of each economic sector, the technological coefficient a_{ij} or what is called the input-output coefficient or the direct input coefficient will be obtained as follows:

$$Z_{ij} = a_{ij} X_j$$

or

$$a_{ij} = \frac{Z_{ij}}{X_j}$$

Where the equation shows that all the coefficients a_{ij} reflect the relationship between the output sector of sector j and the input of sector i and the relationship between the two is fixed. this coefficient indicates the amount of sector i input needed to produce one unit of sector j output. If there are n sectors in the economy, $n \times n$ coefficients a_{ij} will be obtained. If expressed in the matrix, all of these coefficients will become a technology matrix:

$$A = \begin{pmatrix} a_{11} & a_{12} & \dots & a_{1n} \\ a_{21} & a_{22} & \dots & a_{2n} \\ \dots & \dots & \dots & \dots \\ a_{n1} & a_{n2} & \dots & a_{nn} \end{pmatrix}$$

After getting the coefficients of the a_{ij} technology and through algebraic manipulation it produces:

$$(1 - a_{11})X_1 - a_{12}X_2 - \dots - a_{1n}X_n = Y_1$$

$$-a_{21}X_1 + (1 - a_{22})X_2 - \dots - a_{2n}X_n = Y_2$$

$$-a_{n1}X_1 - a_{n2}X_2 - \dots + (1 - a_{nn})X_n = Y_n$$

The system of equations can be written in simple matrix notation as follows:

$$(I - A)X = Y$$

Where I is the identity matrix of size $n \times n$ while A is the technology coefficient matrix, X and Y are the n column vectors. If there is a change in the pattern of national income and write:

$$X = (I - A)^{-1}Y$$

Matrix $(I - A)^{-1}$ with Leontief's inverse matrix. The elements of this matrix are denoted by a_{ij} and reflect the direct and indirect effects of changes in final demand on the output of sectors in the economy. The final request is an exogenous variable. One of its components is government spending, the amount of which is fully regulated by the government itself. Meanwhile, the components of the final demand are variables whose magnitude can be influenced by the government with its various policies. In this context, the final request can become a government policy tool. For this reason, the government has a certain target rate of economic growth, so the government can choose which instrument will be used to boost the final demand.

3.4 Data analysis technique

This analysis technique is carried out based on information obtained from stakeholders and data collected and then reprocessed through several mathematical considerations. Data for the Central Bangka Input Output Table for 2022 were obtained by updating on the basis of the Central Bangka Input Output Table for 2020 using the RAS method. In simple terms, the RAS method is a method for estimating the new input coefficient matrix in year t " $A(t)$ " by using the input coefficient information for the base year " $A(0)$ ", the total demand between year t and the total input between year t . Mathematically the RAS method can be described as follows:

(decreasing this method follows the kaneko method, *ibid* pages 1-2 with some changes in notation and explanation).

Suppose the input coefficient matrix in the base year is:

$$A(0) = \{a_{ij}(0)\}, i, j = 1, 2, \dots, n$$

Then the input coefficient matrix for the projection year t is estimated by the formula

$$A(t) = R A(0) S$$

Where :

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R = diagonal matrix whose elements show the effect of substitution, and

S = diagonal matrix whose elements describe the effect of fabrication.

The effect of substitution shows how far a commodity (read according to the rows in the input-output table) can be used by other commodities in the production process. The effect of fabrication shows how far a sector (read according to the columns in the input-output table) can absorb intermediate inputs from the total available inputs.

3.5 Inter-Sector Linkage Analysis

To find out the linkages between sectors, which can then be known which sectors are the leading sectors in Central Bangka in 2010, inter-sectoral linkages are used, by calculating the spreading power and degree of sensitivity using a multiplier matrix. Spreading power is also known as the backward linkage and the degree of sensitivity of the forward linkage or the level of forward linkage.

3.6 Impact of Backward Linkage

In the IO table, the relationship between the output and the final request is as follows:

$$X = (IA d) - 1 F d \quad (3.7)$$

If described in matrix form, the relationship can be written as follows:

$$\begin{pmatrix} X_1 \\ \vdots \\ X_i \\ \vdots \\ X_n \end{pmatrix} = \begin{pmatrix} b_{11} & b_{12} \\ \vdots & \vdots \\ b_{i1} & b_{i2} \\ \vdots & \vdots \\ b_{n1} & b_{n2} \end{pmatrix} \begin{pmatrix} F_1^d \\ \vdots \\ F_i^d \\ \vdots \\ F_n^d \end{pmatrix} \quad (3.8)$$

Where :

b_{ij} = Reverse matrix cell $(IA d) - 1$ in row i and column j

X_{ij} = Production activity output

F_i^d = domestic final demand production activity i

i = Production activities 1,2,3,4,.....,110 in row form

j = Production activities 1,2,3,4,.....,110 in column form

In equation (3.8) it can be seen that a change of 1 unit of F_i^d will have an impact on a change in X_1 of b_{11} , in X_2 of b_{21} , and so on. Likewise, a change in 1 unit of F_2^d has an impact on X_1 of b_{12} ; to X_2 by b_{22} , and so on. In general, the amount of impact due to changes in the final demand of a production activity on the output of the entire economy is

$$r_j = b_{1j} + b_{2j} + b_{3j} + \dots + b_{110j} = \sum_{t=1}^{110} b_{tj} \quad (3.9)$$

Where:

r_j = Total impact due to changes in the final demand of a production activity j on the output of the entire economy.

b_{ij} = The impact on the output of production activity i due to changes in the final demand for production activity j

The sum of the effects of equation (3.8) is also known as the sum of the scattering forces; and this magnitude shows the impact of changes in the final demand of a production activity on an output of all economic sectors in East Java Province in 2010. Spreadability is a measure of looking at the backward linkages of production activities from production sectors

in Central Bangka . Based on equation (3.8), the average impact on the output of each production activity due to changes in the final demand for an activity can be calculated:

$$Y_j = \begin{bmatrix} r_j \\ \vdots \\ 52 \end{bmatrix} = \begin{bmatrix} \vdots \\ \vdots \\ 52 \end{bmatrix} \sum_{t=1}^{110} b_{ij} \quad (3.10)$$

Where :

Y_j = Average impact on the output of each production activity due to changes in the final demand for production activity j However, because the nature of the final demand for each production activity differs from one another, equations (3.8) and (3.9) are not a measure legitimate way to compare the impact on the sector. For comparison purposes, equation (3.9) must be normalized, namely by dividing the average impact of all production activities. The size resulting from this process is referred to as the dispersive power index which is formulated as:

$$a_j = \frac{\left(\frac{1}{110}\right) \sum_{i=1}^{110} b_{ij}}{\left(\frac{1}{110^2}\right) \sum_{i=1}^{110} \sum_{j=1}^{110} b_{ij}} \quad (3.11)$$

atau

$$a_j = \frac{\sum_{i=1}^{110} b_{ij}}{\left(\frac{1}{110}\right) \sum_{i=1}^{110} \sum_{j=1}^{110} b_{ij}} \quad (3.12)$$

Where α_j is the index of the dispersion of production activity j and is better known as the dispersion of production activity j . The magnitude α_j can have a value equal to 1; greater than 1 or less than 1. If $\alpha_j = 1$, it means that the spreading power of production activity j is equal to the average spreading power of all economic sectors. The value of $\alpha_j > 1$ indicates that the spreading power of production activities j is above the average spreading power of all production activities; and conversely $\alpha_j < 1$ indicates the power spread of production activities j is lower. In many analyzes of IO tables, α_j is also referred to as the backward linkages effect ratio.

3.7 Impact of Forward Linkages (Forward Linkages Effect)

Based on equation (3.7) it can also be seen that the impact on the output of production activity 1 (X_1) as a result of a change in one unit of F_1 d is b_{11} ; as a result of a change in one unit of F_2 d by b_{12} ; etc. The impact on X_2 as a result of a change in one F_1 unit d is b_{21} , as a result of a change in F_2 d unit is b_{22} , and so on. So that the total impact on the output of a production activity i as a result of changes in the final demand for various (all) production activities can be written in the form of an equation:

$$b_{11} + b_{12} + \dots + b_{1j} + \dots + b_{110} = \sum_{j=1}^{110} b_{1j} \quad (3.13)$$

$$b_{i1} + b_{i2} + \dots + b_{ij} + \dots + b_{i10} = \sum_{j=1}^{110} b_{ij} \quad (3.14)$$

$$b_{110,1} + b_{110,2} + \dots + b_{110,j} + \dots + b_{110,10} = \sum_{j=1}^{110} b_{110j} \quad (3.15)$$

Where: S_i = Atau dalam persamaan umum:
activities. ea
output in an

$$s_i = \sum_{j=1}^{110} b_{ij} \quad (3.16)$$

measure can be used to see forward linkages. For the purposes of comparison between production activities and logic which is similar to the discussion of spreading power, equation (3.16) is normalized to:

$$\beta_1 = \frac{\sum_{j=1}^{110} b_{1j}}{\left(\frac{1}{110}\right) \sum_{i=1}^{110} \sum_{j=1}^{110} b_{ij}} \quad (3.17)$$

[https](https://doi.org/10.33019/equity.v%vi%i.155)

Where: β_i = index of the degree of sensitivity of production activity i or more commonly referred to as the degree of sensitivity only. The value of $\beta_i > 1$ indicates that the degree of sensitivity of production activity i is higher than the average degree of sensitivity of all production activities, while $\beta_i < 1$ indicates the degree of sensitivity of production activity i is lower than the average. The degree of sensitivity index is also known as the forward linkages effect ratio.

3.8 Determination of Leading Development Sectors

One of the advantages of analysis with the input-output model is that it can be used to determine the extent of the relationship or linkages between production sectors. This relationship can be either a forward linkage or a backward linkage. The same definition also applies to the degree of sensitivity index which is greater than the average value. means that the degree of sensitivity of the sector is higher than the degree of sensitivity on the average as a whole. Based on the spreading power index and sensitivity index, the economic sectors in Central Bangka can be grouped into 4 groups, as follows:

- a. The first group has high direct forward and backward linkages.
- b. The second group has high direct forward linkages but low direct backward linkages.
- c. The third group has high direct backward linkages but low direct forward linkages.
- d. The fourth group has direct forward linkages and low direct backward linkages.

To provide a clearer picture of the division of positions for each sector, in full it can be seen in table 3 as follows:

Table 3. Grouping of Economic Sectors Based on Backward Linkage and Forward Linkage

		Back Linkage	
		Low	Tall
Linkages To Front	Tall	(Potential sector)	(Leading Sector)
		Group II	Group I
	Low	(Backward Sector)	(developing sector)
		Group IV	Group III

Source: Kuncoro, 2011

From the results obtained, the economic sectors in group I are sectors with a high degree of sensitivity (forward linkage) and spreading power (backward linkage). The sector that has the highest score is a superior sector that is representative to represent sectors that are feasible to be developed in the context of development in Central Bangka. Based on the analysis of forward and backward linkages, it can be seen the linkages between certain sectors and the input sectors that have been used in the production process, as well as the linkages between certain sectors and other sectors that will use their output. To determine the

interrelationships between one sector and another, in this study using the inverse matrix (inverse matrix).

3.9 District Main Potential Analysis

This study is to increase the PDRB of Central Bangka Regency, from optimizing the resources of various business sectors which will be considered superior, then from the grouping of superior products mentioned above, for the Agriculture, Plantation, Livestock and Fishery Sectors; MSME; Trading; industry; tourism and creative economy will be classified into:

- Leading Sector is a commodity that has a fast growth rate and makes a large contribution to the GRDP of Central Bangka Regency
- The potential sector is a commodity that has a slow growth rate but a large contribution to the GRDP of Central Bangka Regency.
- The developing sector is a commodity that has a fast growth rate but makes a small contribution to the GRDP of Central Bangka Regency.
- Underdeveloped sector, is a commodity that has a slow growth rate and makes a small contribution to the PDRB of Central Bangka Regency.

4. RESULTS AND DISCUSSION

4.1 GRDP Location Quotient (LQ) analysis

The results of the ADHK GRDP Location Question (LQ) analysis are to determine the degree of specialization of economic sectors in an area that utilizes the base sector or leading sector. The LQ technique for discussing economic conditions, leads to identification of specialization of economic activity or measuring the relative concentration of economic activity to get an overview in determining the leading sector as the leading sector of an industrial economic activity can be seen in table 4.

Table 4 Calculation Results of Location Quotient (LQ) GRDP Based on 2010 Constant Prices According to Business Field of Central Bangka Regency, 2017-2021

Business field		2017	2018	2019	2020*	2021**	LQ average results
(1)		(2)	(3)	(4)	(5)	(6)	
A	Agriculture, Forestry and Fishery Agriculture, Forestry and Fishery	0.774	0.787	0.829	0.845	0.839	0.815
B	Mining and excavation <i>Mining and Quarrying</i>	1,411	1,383	1,478	1.505	1,491	1,454
C	Processing/ Manufacturing Industry	0.477	0.451	0.251	0.269	0.268	0.343
D	Electricity and Gas Procurement Water Procurement, Waste	0.523	0.525	0.604	0.622	0.636	0.582
E	Management, Waste and Vegetable Recycling/ Water Supply, Sewerage, Waste Management and Remediation Activities	0.375	0.385	0.396	0.387	0.386	0.386
F	Construction/Construction	1,179	1.178	1.227	1,260	1,263	1,221
G	Wholesale and Retail Trade; Car and Motorcycle Repair/ Wholesale and Retail Trade, Repair Of Motor Vehicles and Motorcycles	1.138	1,179	1.238	1,251	1,249	1,211
H	Transportation and Warehousing/ Transportation and Storage	2,568	2,624	2,654	2,416	2,387	2,529
I	Provision of Accommodation and Food Service Activities	1.228	1,239	1.265	1,284	1,279	1,259

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J	Information and Communication/ Information and Communication	1,084	1.107	1.142	1,179	1,179	1.138
K	Financial and Insurance Services/ Financial and Insurance Activities	0.340	0.326	0.346	0.386	0.387	0.357
L	Real Estate/ Real Estate Activities	0.884	0.857	0.905	0.911	0.909	0.893
M N	Company Services/ Business Activities	0.983	0.979	1.027	1,089	1,087	1.033
O	Government Administration, Defense and Compulsory Social Security/ Public Administration and Defense, Compulsory Social and Security	1,340	1,349	1.403	1.414	1.416	1.385
P	Educational Services / Education	1.127	1,120	1.168	1.183	1,184	1.156
Q	Health Services and Social Activities/ Human Health and Social Work Activities	1.151	1,160	1,180	1.215	1.208	1.183
R,S,T,U	Other Services/Other Service Activities	0.568	0.571	0.574	0.606	0.603	0.584
Gross Regional Domestic Product		17.151	17,221	17,687	17,822	17,772	17,530
Gross Regional Domestic Product							

Source: Processed data results

Explaining the results of Location Quotient (LQ) analysis can divide the economic activities of a region into two groups, namely:

1. Activities in the economic sector that serve markets in the region itself and outside the region (exports) concerned. Such an economic sector is called a potential economic sector or comparative advantage (base), namely $LQ > 1$, as follows:
 - Transportation and Warehousing Sector (LQ 2,529);
 - Mining and Quarrying Sector (LQ 1.454);
 - Government Administration, Land and Compulsory Social Security Sector (LQ 1.385);
 - Accommodation and Food & Drink Provider Sector (LQ 1.259);
 - Construction Sector (LQ 1.223);
 - Wholesale and Retail Trade, Car and Motorcycle Repair Sector (LQ 1.211);
 - Health and Social Activities Sector (LQ 1.183);
 - Education Services Sector (LQ 1.1562).
2. Activities in the economic sector that serve markets in the regions or whose production is only sufficient to meet the needs of their own region and cannot be exported are called sectors that do not have a comparative advantage (non-base) or local industry, namely $LQ = 1$, as follows:
 - Corporate Service Sector (LQ 1.033);
 - Real Estate Sector (LQ 0.893);
 - Agriculture, forestry and fisheries sector (LQ 0.815);
 - Other Services Sector (LQ 0.584).
3. Activities in the economic sector where commodity production in a region cannot meet its own needs so it needs supplies or imports from outside is called non-potential (non-base), namely $LQ < 1$, as follows:
 - Water Procurement, Waste Management, Waste and Recycling Sector (LQ 0.386);
 - Financial Services and Insurance Sector (LQ 0.357);
 - Processing Industry Sector (LQ 0.343). The first quadrant is a quadrant with sector characteristics having a backward links index and a forward links index with a value of > 1 which is the leading sector in Central Bangka Regency.

4.2 Results of Input-Output Analysis (IO) of the Superior Potential of Natural Resources at the Regency level

Descriptive Analysis of Input-Output Tables of Central Bangka RegencThe input-

output table for Central Bangka Regency in 2022, the results of this first stage are limited, aiming to find out which leading sectors are in the 84 sub-sectors of Agriculture, Fishery, Forestry, Plantation, Livestock, MSME, Trade, Industry, Tourism and Creative Economy, aggregation is carried out into 11 sectors in Central Bangka Regency and aggregation was carried out by adjusting the GRDP category classification into 6 sectors which included 84 sub-sectors.

4.3 Request Structure

Based on Table IO for Central Bangka Regency in 2022, the total demand reaches Rp. 67.141 million rupiah consisting of Rp. 5.858 million rupiah request between and Rp. 61.283 million rupiah final request. The amount of final demand is greater than the intermediate demand indicating that the production output of goods and services in Central Bangka Regency tends to be used for the direct consumption of the people. It can be seen in Table 5 shows the 5 sectors with the largest contribution of intermediate demand, final demand and total demand to the economy of Central Bangka Regency. Where based on GRDP distribution data and demand structure, namely the agricultural, forestry and fisheries sectors and the wholesale and retail trade sector; car and motorcycle repairs,

Table 5 The Biggest Sector by Output Rating in Central Bangka Regency

serial number	sector code	Sector	Value (million rupiah)
1	3	Processing industry	18,541,110.59
2	1	Agriculture, forestry and fisheries	18,488,497.71
3	2	Wholesale and retail trade; car and motorcycle repair	14,248,373.91
4	4	Real Estate	3,326,426.90
5	5	Provider of accommodation and food and drink	2,954,830.52

Source: processed data results

Determination of Leading Development Sector The value of the spreading power index can be referred to as the index value of backward linkages, while the index value of the degree of sensitivity can be referred to as the index value of forward linkages. If the dispersive power values and degrees of sensitivity are mapped into four quadrants, the following results will be obtained:

- The first quadrant is a quadrant with sector characteristics that have a backward links index and a forward links index with a value of > 1 ,
- The second quadrant is a quadrant with sector characteristics having a backward links index value < 1 and a forward links index > 1 .
- The third quadrant is a quadrant with sector characteristics having a backward links index value > 1 while a forward links index value < 1 .
- The fourth quadrant with its sector characteristics has a backward links index and a degree of sensitivity (forward links index) < 1 .

Table 6 The grouping of economic sectors in Central Bangka Regency

		Back Linkage	
		Low	Tall
Linkages	Tall	(Potential sector) quadrant II	(Leading Sector) quadrant I

<https://equity.ubb.ac.id/index.php/equity>

To Front		Processing Industry (UMKM products, boiling fish/salted dried fish, honey and shrimp paste). Capture Fisheries (squid and sea fish) Biopharmaceutical farming (ginger and turmeric) Plantation (oil palm and pepper) Processing industry (CPO)	Agriculture, forestry and fisheries : - Horticultural crop farming (red chilies and mustard greens) - Farming fruit crops (Durian and Duku) - Freshwater aquaculture (catfish and gourami) and brackish water (mud crab and vannamei shrimp) Processing industry (MSMEs brittle/keretek products) Wholesale and retail trade; repair of cars and motorbikes (minimarkets)
	Low	(Backward Sector) quadrant IV Providers of accommodation and food and drink (tourism: nature tourism and marine tourism) and creative craft (crafts and culinary) Real estate (housing industry)	(Developing sector) quadrant III Wholesale and retail trade; auto and motorcycle repair (markets) Livestock (cows and chickens) Agriculture of food crops (cassava and corn) Plantation (coffee)

Based on the grouping of economic sectors in Central Bangka district, namely

1. The first quadrant is a quadrant with sector characteristics that have a backward links index and a forward links index with a value of > 1 which is the leading sector in Central Bangka Regency. Where commodities that have a fast growth rate and make a large contribution to the PDRB of Central Bangka Regency, namely the agriculture, forestry and fisheries categories are Horticultural crop farming (red chilies and mustard greens); Farming of fruit crops (Durian and Duku); Freshwater aquaculture (catfish and gourami) and brackish water (mud crab and vannamei shrimp); the processing industry category is MSME for brittle/keretek products; the wholesale and retail trade category; car and motorcycle repair are minimarkets.
2. The second quadrant is a quadrant with sector characteristics that have a backward links index value < 1 and a forward links index > 1 is a potential sector in Central Bangka Regency. Where are the commodities that have a slow growth rate but a large contribution to the PDRB of Central Bangka Regency, namely the Processing Industry category, namely MSME products, boiled fish/salted dried fish, honey and shrimp paste; the Capture Fisheries sector is squid and sea fish; biopharmaceutical agriculture sector is ginger and turmeric; the Plantation sector are oil palm and pepper; The processing industry is CPO.
3. Third quadrant Fourth quadrant is a quadrant with sector characteristics having a backward links index value > 1 while a forward links index value < 1 is a developing sector in Central Bangka Regency. Where commodities that have a fast growth rate but make a small contribution to the GRDP of Central Bangka Regency, namely the category of wholesale and retail trade; car and motorcycle repair are markets; the Livestock sector are cows and chickens; food crop agriculture sector is cassava and corn; the Plantation sector is coffee.

The fourth quadrant with its sector characteristics having a backward links index value and a degree of sensitivity (forward links index) < 1 is an underdeveloped sector. Where are the commodities that have a slow growth rate and make a small contribution to the PDRB of Central Bangka Regency, namely the categories of accommodation and food and drink

providers are tourism: nature tourism and marine tourism and the creative economy: craft and culinary; Real estate is the housing industry.

5. CONCLUSIONS AND SUGGESTIONS

5.1 CONCLUSION

1. The results of the Potential Analysis based on GRDP are:
 - 1) Activities in the economic sector that serve markets in the region itself and outside the region (exports) concerned. Such an economic sector is called a potential economic sector or comparative advantage (base), namely $LQ > 1$, as follows:
 - Transportation and Warehousing Sector (LQ 2,529);
 - Mining and Quarrying Sector (LQ 1.454);
 - Government Administration, Land and Compulsory Social Security Sector (LQ 1.385);
 - Accommodation and Food & Drink Provider Sector (LQ 1.259);
 - Construction Sector (LQ 1.223);
 - Wholesale and Retail Trade, Car and Motorcycle Repair Sector (LQ 1.211);
 - Health and Social Activities Sector (LQ 1.183);
 - Education Services Sector (LQ 1.1562).
 - 2) Activities in the economic sector that serve markets in the regions or whose production is only sufficient to meet the needs of their own region and cannot be exported are called sectors that do not have a comparative advantage (non-base) or local industry, namely $LQ = 1$, as follows:
 - Corporate Service Sector (LQ 1.033);
 - Real Estate Sector (LQ 0.893);
 - Agriculture, forestry and fisheries sector (LQ 0.815);
 - Other Services Sector (LQ 0.584).
 - 3) Activities in the economic sector where commodity production in a region cannot meet its own needs so it needs supplies or imports from outside is called non-potential (non-base), namely $LQ < 1$, as follows:
 - Water Procurement, Waste Management, Waste and Recycling Sector (LQ 0.386);
 - Financial Services and Insurance Sector (LQ 0.357);
 - Processing Industry Sector (LQ 0.343).
2. Superior Potential of Natural Resources at the Central Bangka Regency level using the Input-Output (IO) analysis method, as follows:
 1. The first quadrant is a quadrant with sector characteristics that have a backward links index and a forward links index with a value of > 1 which is the leading sector in Central Bangka Regency. Where commodities that have a fast growth rate and make a large contribution to the PDRB of Central Bangka Regency, namely the agriculture, forestry and fisheries categories are Horticultural crop farming (red chilies and mustard greens); Farming of fruit crops (Durian and Duku); Freshwater aquaculture (catfish and gourami) and brackish water (mud crab and vannamei shrimp); the processing industry category is MSME for brittle/keretek products; the wholesale and retail trade category; car and motorcycle repair are minimarkets.
 2. The second quadrant is a quadrant with sector characteristics that have a backward links index value < 1 and a forward links index > 1 is a potential sector in Central Bangka Regency. Where are the commodities that have a slow growth rate but a large contribution to the PDRB of Central Bangka Regency, namely the Processing

Industry category, namely MSME products, boiled fish/salted dried fish, honey and shrimp paste; the Capture Fisheries sector is squid and sea fish; biopharmaceutical agriculture sector is ginger and turmeric; the Plantation sector are oil palm and pepper; The processing industry is CPO.

3. Third quadrant Fourth quadrant is a quadrant with sector characteristics having a backward links index value > 1 while a forward links index value < 1 is a developing sector in Central Bangka Regency. Where commodities that have a fast growth rate but make a small contribution to the GRDP of Central Bangka Regency, namely the category of wholesale and retail trade; car and motorcycle repair are markets; the Livestock sector are cows and chickens; food crop agriculture sector is cassava and corn; the Plantation sector is coffee.
3. The fourth quadrant with its sector characteristics having a backward links index value and a degree of sensitivity (forward links index) < 1 is an underdeveloped sector. Where are the commodities that have a slow growth rate and make a small contribution to the PDRB of Central Bangka Regency, namely the categories of accommodation and food and drink providers are tourism: nature tourism and marine tourism and the creative economy: craft and culinary; Real estate is the housing industry.

5.2 SUGGESTION

The suggestions in this study are:

All work programs are expected to create potential into something real to work on. The work program that is compiled and implemented is also expected to be able to increase the ung category the superiority of a commodity/product, for example a commodity that is categorized as Underdeveloped Superior, becomes Developing Superior. Superior Commodity Develops into Potential Superior Commodity, also Potential Superior Commodity increases to become Excellent Commodity. The more regional commodities/products that fall into the superior category, the better the economic condition of a region. Through analysis of the Regional Superior Products/Commodities of Central Bangka Regency, recommendations for strategic programs are prepared to unite all existing products in the community as superior commodities/products that have been mapped.

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