

CHAPTER III

Research Methodology

A. Research Object

This research was conducted in Kebumen district which is one of 29 regencies and 6 cities in Central Java province. The potential of Kebumen District is very large, so the researchers make the area as the object of research. If viewed from the geographical location, the area, and the population, make this region has an important role in the economy of Central Java Province.

B. Data Types

In this research, the data used is secondary data. Secondary data are supporting data obtained from books, magazines, etc. related to the research being undertaken, or taken from other sources issued by institutions or agencies deemed competent. Data in the form of GRDP data of Kebumen District of Central Java Province based on constant price from 2012-2016. The data used is limited to seventeen sectors in the GRDP component by comparing GRDP at the Central Java Provincial level based on the constant price of 2012-2016.

C. Data Source

Sources of data used in this study are various sources obtained through secondary data derived from the Central Bureau of Statistics of Kebumen District, Central Statistics Agency of East Java, and various other sources such as internet and literature study.

D. Data Collection Technique

Documentation method is a way of collecting data through the things or variables mengupatatan, books, newspapers, magazines, other agenda (Arikunto, 2002). In this research, documentation method is used to know data of GRDP Kebumen District on Constant Price Base in 2012-2016, general description and general condition of Kebumenyang district is sourced from BPS documentation of Kebumen and BPS districts of Central Java Province. . Various data, information, and references from literature sources, mass media and the internet were excavated for the purposes of this study.

E. Operational Definition of the Research Object

Operational definition is an attempt to explain the limitation of understanding between one concept with another concept in order to avoid misunderstanding. Based on the above explanation there are several explanations of the conceptual definition that can be given, among others:

1. Regional economic development

A process whereby governments and communities manage existing resources and establish a partnership pattern between local governments and the private sector to create new jobs and stimulate the development of economic activity within the region.

2. Economic Growth

The process of increasing per capita output in the long run and is a process rather than an economic picture.

3. Economic Potential

The amount of contribution given by each sector to the regional income of each district. Economic contribution can be calculated by the amount of GRDP generated by the area.

4. Gross Regional Domestic Product

Gross added value of all goods and services created or produced in a country's domestic territory arising from various economic activities within a given period regardless of whether the production factor is owned by a resident or non-resident.

5. Economic Sectors

Seventeen economic sectors in each district / city are:

- a. Agriculture, Forestry and Fisheries
- b. Mining and Quarrying
- c. Processing Industry
- d. Procurement of Electricity and Gas
- e. Water Supply, Waste Management and Recycling
- f. Construction
- g. Large and Retail Trade, Car Repair and Motorcycles
- h. Transportation and Warehousing
- i. Provision of Accommodation and Drinking
- j. Information and Communication
- k. Financial and Insurance Services
- l. Real Estate

- m. Company Services
 - n. Mandatory Government, Defense and Social Security Administration
 - o. Educational Services
 - p. Health Services and Social Activities
 - q. Other Services
6. Base Sector and Non-Base Sector

Sectors capable of exporting goods and services out of society's economic boundaries when compared to the same sector in the wider scope. The non-base sector is a sector that is only able to meet the needs of the region itself and can not export goods outside the region. The base sector if the value of $LQ > 1$ while the non-base sector if the value of $LQ < 1$.

7. Sectors that have a relatively large role compared to other sectors to the regional economy.

F. Data Analysis Method

1. Location Quotient Analysis (LQ)

Location Quotient analysis is used to determine the economic basis (base sector) in a region, especially from contribution criteria. In addition, this analytical tool can be used to measure the concentration of an activity (industry) in an area with the role of activities or similar industries in the regional and even national economies. The calculation of the base uses regional GRDP variables on an activity within the regional economic structure. The mathematical formula of calculating LQ (Lincoln Arsyad, 1999) as follows:

$$LQ = \frac{v_i / v_t}{V_i / V_t} \dots \dots \dots (3.1)$$

Information :

LQ : Location Quotient coefficient

V_i : sector I revenues in an area

V_t : total revenue of the area

V_i : sector revenue I regionally / nationally

V_t : total regional / national income

Based on the above formula there are three categories from the calculation of Location Quotient (LQ) in the regional economy, namely:

Category 1, if the value of $LQ > 1$, then the relevant sector in the study area more contribute than the reference region. That is, the sector in the regional economy in the study area has a comparative advantage and is a base sector.

Category 2, if the LQ value < 1 , the relevant sector in the study area is less contribute than the reference region. That is, the sector is a non-base sector.

Category 3, if the value of $LQ = 1$, then the sector concerned both in the study area and in the reference area already has an increase.

The advantages of this LQ are simple analytical tools that can indicate the economic structure of a region and potential import substitution industries or products that can be developed for export and show potential industries (sectoral) to further analyze. There is also a weakness of a descriptive rough

indicator, a temporary conclusion and does not pay attention to the economic structure of each region. Given that the production and productivity of labor in each region is different, there are also differences in resources.

2. Shift Share Analysis

Shift Share Analysis is a technique in analyzing the economic growth of a region as a change or improvement of an indicator of economic growth of a region or region within a certain period. The method of isolation of various factors causes the change of industrial structure of a region in its growth from one period to the next. (Robinson Tagrin 2007).

According to Lincoln Arsyad (1999) mentioned that this analysis provides data on the performance of the economy in three areas that have to do with each other:

- a. Regional economic growth is measured by analyzing changes in aggregate sectoral work as compared to changes in the same sector in the reference economy.
- b. Proportional shift measures the relative change, change or decrease, in the area compared to the larger economy being made reference.
- c. A differential shift helps in determining the extent of the competitiveness of the local (local) industry with the reference economy. So if the differential shift of an industry is positive, then the industry is superior to its competitiveness compared to the same industry in the reference economy.

In this analysis has a purpose to determine the performance or productivity of regional economic work compared with the economy at the regional or even national level. This technique compares the growth of the national economy and its sectors and observes deviations from the comparison. If the deviation is positive, then a sector within the region has a competitive advantage. The equations and components in Shift Share analysis are as follows:

$$D_{ij} = N_{ij} + M_{ij} + C_{ij} \dots \dots \dots (3.2)$$

In this study the variables used are:

$$D_{ij} = E^*_{ij} - E_{ij} \dots \dots \dots (3.3)$$

$$N_{ij} = E_{ij} \cdot rn \dots \dots \dots (3.4)$$

$$M_{ij} = E_{ij} (rin - rn) \dots \dots \dots (3.5)$$

$$C_{ij} = E_{ij} (rij - rn) \dots \dots \dots (3.6)$$

Where relative rij , representing district growth rate and province growth rate are defined as follows:

$$rij = \frac{(E^*_{ij} - E_{ij})}{E_{ij}} \dots \dots \dots (3.7)$$

$$rin = \frac{(E^*_{ij} - E_{in})}{E_{in}} \dots \dots \dots (3.8)$$

$$rn = \frac{(E^*_{n} - E_n)}{E_n} \dots \dots \dots (3.9)$$

Information :

E_{ij} : sector I income in region j (district)

E_{in} : revenue of sector I in region n (province)

E_n : regional revenue n (province)

E_{ij} : last year income

r_{ij} : growth rate of sector I in region j (district)

r_{in} : sector growth rate I in region n (province)

r_n : overall growth rate in region n (province)

So the Shift Share equation for sector I in region j (Soepomo, 1993) is as follows:

$$D_{ij} = E_{ij} \cdot r_n + E_{ij}(r_{in} - r_n) + E_{ij}(r_{ij} - r_{in}) \dots \dots \dots (3.10)$$

Information :

D_{ij} : change of sector I output variable in region j

N_{ij} : national economic growth

M_{ij} : industry sector mix I in j

C_{ij} : competitive advantage of sector I in region j

E_{ij} : sector I income in region j

From the above formula, it is known there are 2 indicators of the calculation of shift share in the economy of an area:

If the value of the proportional shift component of sector > 0 , then the sector is experiencing rapid growth and give a positive influence to the regional economy, and vice versa.

If the value of the differential shift component of sector < 0 , then the comparative advantage of the sector increases in a higher economy, and vice versa.

3. Growth Ratio Model Analysis

The MRP analysis is an analytical tool for viewing descriptions of potential economic activities or sectors based on the growth criteria of regional economic structures both external and internal (Yusuf {1999} in Wafiyulloh {2016}).

This model of analysis is derived from the initial equations of the main components in the Shift and Share analysis of Differential Shift and Proportionality Shift. Mathematically Differential Shift can be written as follows:

$$D_{ij} = \left[\frac{\Delta E_{ij}}{E_{ij}(t)} - \frac{E_{IR}}{E_{IR}(t)} \right] E_{ij}(t) \dots\dots\dots(3.11)$$

And Proportionality Shift can be written mathematically as follows:

$$P_{ij} = \left[\frac{\Delta E_{IR}}{E_{IR}(t)} - \frac{\Delta E_R}{E_R(t)} \right] E_{ij}(t) \dots\dots\dots(3.12)$$

So from the above equation obtained the formula - the formula of calculation as follows:

$$\Delta E_{IR} = E_{IR}(t+n) - E_{IR}(t) \dots\dots\dots(3.13)$$

$$\Delta E_R = E_R(t+n) - E_R(t) \dots\dots\dots(3.14)$$

Information :

ΔE_{ij} : change of activity income 1 in study area at time period 1

ΔE_{IR} : change in activity revenue 1 in the reference area

ΔE_R : change of GRDP in reference area

E_{ij} : income of activity I in study area (district

E_{IR} : revenue of activity I in reference area (province)

E_R : GRDP in the reference area

t+n : years between two periods

MRP analysis is divided into two ratios, namely: (a) Growth Ratio Study (RPs) and Growth Ratio of Reference Areas (RPr).

a. Growth Ratio of Study Areas (RPs)

RPs is the ratio between the growth rate of activity I study area and the growth rate of activity I in the reference region.

$$RPs = \frac{\Delta E_{ij} / E_{ij}(t)}{\Delta iR / E_{iR}(t)} \dots \dots \dots (3.15)$$

Information :

ΔE_{ij} : change in income of activity I study area,

$E_{ij}(t)$: initial activity income I period of study in the study area,

ΔE_{iR} : change in revenue of activity I in the reference area

$E_{iR}(t)$: activity income I beginning of research period in reference region

If the value of $RPs > 1$ is given a positive notation (+), it means that sector growth at the study area level is higher than the sector growth in the reference region.

If the value of $Rps < 1$ is given a negative notation (-), it means that sector growth at the study area is lower than the sector growth in the reference region.

b. Reference Growth Rate Reference Area (RPr)

Growth Ratio of Reference Areas is a method of comparison between the rate of growth in revenue of activity I in the reference area with the total growth rate of activity (GRDP) reference region.

$$RPr = \frac{\Delta EiR / EiR(t)}{\Delta ER / ER(t)} \dots \dots \dots (3.16)$$

Information:

ΔEiR : change in revenue of activity I of reference region
 EiR : activity income I beginning of research period in the reference area
 ΔER : GRDP change in reference area
 $ER(t)$: GRDP at the start of reference research area

change in revenue of activity I of reference region

If the value of $RPr > 1$ is given a positive notation (+), it means that the growth of a particular sector in the reference region is higher than the total GDP growth of the reference region.

If the value of $RPr < 1$ is given a negative notation (-), it means that the growth of a certain sector in the reference region is less than the total GDP growth of the reference region.

In the Growth Ratio Model (MRP) analysis, it can be classified into four classifications:

Classification 1, if the value of $RPr (+)$ and $RP_s (+)$ means that the activity at the provincial level has outstanding growth as well as at the district level. So this activity is called the dominant growth.

Classification 2, if the value of RPr (+) and RPs (-) means that the activity at the provincial level has a prominent growth but at the district level is not yet prominent.

Classification 3, if the value of RPr (-) and RPs (+) means that the activity at the provincial level has growth that is not outstanding but at the district level is already prominent.

Classification 4, if the value of RPr (-) and RPs (-) means that the activities at the provincial and district levels have no significant growth at all.

4. Overlay Analysis

This Overlay analysis is used to determine potential sectors or economic activities based on growth criteria and contribution criteria by combining the results of the Growth Method (MRP) and Location Quotient (LQ). There are four possibilities or judgments in this method, namely:

If the RPs (+) and LQ (+), indicate that the activity is very dominant both from growth and from contribution.

If RPs (+) and LQ (-), indicate that the activity is good growth, but the contribution is small. Thus, there needs to be an increase in contribution to become the dominant activity.

If RPs (-) and LQ (+), indicate that the activity is small growth, while the contribution is very large. It is possible that this activity is in decline.

If RPs (-) and LQ (-), indicate that the activity is not potential either from growth or from its contribution.

5. Klassen Typology Analysis

Klassen Typology analysis tool is used to know the description of the pattern and structure of economic growth of each region. Klassen typology basically divides the region based on two main indicators, namely regional economic growth and regional per capita income. Through this analysis, there are four characteristics of different poles and economic growth structures: high growth and high income, high income but low growth, high growth but low income, low growth and low income areas. (Kuncoro and Aswandi, 2002: 27-45).

The criteria used to divide the district / city in this research are as follows:

1. Fast-forward and fast-growing areas, regions have higher levels of economic growth and income per capita than the average Central Java Province
2. Developed but Depressed Areas, regions with higher per capita income, but their economic growth rate is lower than the average of Central Java province.
3. Fast growing areas, areas with high growth rates, but per capita income levels are lower in average abnding Central Java Province.
4. Relatively lagging regions are regions that have lower economic growth and per capita income than the average of Central Java Province.

6. SWOT Analysis

SWOT analysis is used to direct and act as a catalyst in strategic planning process and can align factors from internal and external environment. This analysis is done by focusing on two things, namely opportunities and threats as well as identification of internal strengths and weaknesses. In addition, this analysis is based on the assumption that an effective strategy will maximize strengths and opportunities and diminish weaknesses and threats. (Perce and Robinson in Muhammad Ghufron, 2008).

SWOT elements include S (strength) which means referring to competitive advantage and other competencies, W (weakness) ie barriers that limit the choices on strategy development, O (opportunity) that provides favorable conditions or opportunities that restrict the barrier and T (threat) associated with the conditions that can hinder or threaten in achieving the goal. This matrix can generate four possible alternative strategy cells, namely S-O strategy, W-O strategy, W-T strategy, and S-T strategy. There are eight stages in forming SWOT matrix that is:

- a. Create a list of the region's key internal strengths.
- b. Make a list of the internal key weaknesses of the region.
- c. Create a list of regional external opportunities.
- d. Create a list of external threat areas.
- e. Adjust internal forces with external opportunities and record results in the S-O strategy cell.

- f. Adjust internal weaknesses with external opportunities and record results in a W-O strategy cell
- g. Adjust internal forces with external threats and record results in the S-T strategy cell.
- h. Adjust internal weaknesses with external threats and record results in the W-T strategy cell

Table 3.1
Matrix of SWOT

Internal Eksternal	STRENGTH (S) List of Internal Strength	WEAKNESS (S) List of Internal Weakness
OPPORTUNITIES (O) List of External Opportunities	S-O Strategy Use strength to utilize opportunities	W-O Strategy Overcoming weakness with utilizing opportunities
THREATS (T) List of External Threats	S-T Strategy Use strength to evade threats	W-T Strategy Minimize weakness and evade threats

Source : Muhammad Ghufron (2008)

Developed but distressed regions are areas with higher per capita incomes, but their economic growth rates are lower than average. Fast growing areas are areas with growth rates, but per capita rates are lower than average. Relatively lagged regions are regions that have low levels of economic growth and per capita income.

Table 3.2
Classification of GDP Sector by Klassen Typology

r \ y	$y_i > y$	$y_i < y$
$r_i > r$	Sector is progressing and growing fast	Sector is growing fast
$r_i < r$	Sector advanced but depressed	The sector is relatively left behind

Source : Sjafrizal, 1997

Information :

r_i : sector growth rate I

r : GDP growth rate

y_i : contribution of sector I to GRDP

y : contribution of sector average to GRDP