Analysis of Development Inequality and Leading Sectors in North Kalimantan

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ABSTRACT

The purpose of this study was to determine inequality and leading economic sectors in North Kalimantan with a period of 6 years from 2018 to 2023. The research method used is to use Williamson index calculation and analyze the leading sectors through the calculation of Location Quotient, Shift Share and Klassen typology. By taking secondary data obtained from the source of the Central Bureau of Statistics of North Kalimantan. The results showed that inequality in North Kalimantan from 2018 to 2023 from Williamson's index calculation was relatively high. While the calculation of the leading sector in North Kalimantan is the forestry sector, agriculture, warehousing, mining, transportation, construction and fisheries which is the biggest competitiveness is excavation and mining. The implication of these results is the need for more inclusive policies to reduce development inequality and increase the contribution of leading sectors in the economic growth of the region.
INTRODUCTION

Indonesia as a country that has a lot of potential and a wealth of resources that are very abundant in various aspects but have not been used optimally, with the spread of Indonesia from West to East has a variety of potential on its own. With the law No. 23 of 2014 concerning local governments that have determined if the regions have the right to set their own policies in order to carry out government affairs so the authority of the regions, including in the management of the potential contained in their respective regions with economic development activities.

Regional economic development is the process of maximizing the use of available resources to create new jobs and encourage the development of economic activity. To achieve development and ecological growth in a region, the active role of government and community participation is needed to encourage economic growth in the region.

Economic growth is a parameter used to measure the success of development in a region where the difference in the level of this between regions is often due to inequality in economic development that results in disparities in development between regions. Therefore, it is important to balance economic growth with equitable development. Sjafrizal (in Pratiwi, 2021), said that inequality between these regions is triggered by differences in regional capabilities in the development process, which are influenced by natural conditions and diverse demographics in each region. This inequality is a serious challenge in development, especially in the Kalimantan region. Although Kalimantan is known to have a lot of potential related to natural resources and a large area, one example of significant inequality in Indonesia occurs in North Kalimantan. Figures 1 and 2 show a picture of economic growth in accordance with the average growth rate of GDP at constant prices and GDP per capita at constant prices between districts/cities in North Kalimantan province in 2018-2023.

![Figure 1. Average GDP growth rate over constant prices between districts/cities in North Kalimantan province in 2018-2023](image-url)
In Figures 1 and 2, it can be seen that the average rate of economic growth and GDP/capita in districts/cities in North Kalimantan province during 2018-2023 varies. Some regions show high economic and income/capita growth, while others are low. The lowest average economic growth rate in North Kalimantan province during the period was Tarakan City, at 4.34 percent. Nevertheless, the average GDP per capita in the district is higher than that of the province as a whole. On the other hand, there are areas such as Tarakan City which has a high average economic growth rate and GDP per capita. On the other hand, there are areas such as Bulungan Regency that have a lower average rate of economic growth and GDP per capita compared to North Kalimantan province. This shows the inequality of development between districts/cities in North Kalimantan province.

Inequality will also have an effect on regional economic growth, which also has an impact on high unemployment and poverty levels. In the last 6 years, the poverty rate in North Kalimantan province tends to increase.

Another factor that causes inequality is the economic development of Indonesia, which is centered in Java since the colonial era of the Dutch East Indies. As a result, the economic growth of Java at that time developed faster
than various regions outside Java. In addition, because Indonesia is an archipelagic country that has different geographical conditions between its regions which also plays a role in the unevenness of development, hindering the equitable distribution of overall development.

Uneven development is a major factor that inhibits the growth and development of the economy, especially in North Kalimantan. The success or failure of a development depends a lot on its regional planning, which is structured according to the identification of its territory and also its characteristics. These characteristics include a variety of potential and also existing problems. Therefore, development planning in the region should be directed to the processing of existing resources in order to support economic development in the area (Yuliani, 2011). So in fact, there are several sectors that are still not maximized in their development, so government intervention is needed for their development. The Government of North Kalimantan must establish policies that can promote economic growth. Thus, local governments can prioritize development planning for all sectors, both those that have excelled and those that have not contributed much to the economic growth in North Kalimantan. Sectors that have excelled is expected to help other sectors in order to more developed. In addition, the existing value projection allows the local government to develop future leading sectors to boost economic growth in North Kalimantan and ensure economic growth that goes hand in hand despite varying levels of development.

In realizing the goals of economic development in a region, the most important policy that must be taken is to optimize development priorities which must be adjusted to the potential of the region. Considering that the potential of each region in terms of development is different, so in each region it is necessary to find the economic sector that has the most. (Muhammad and Darwin, 2017). Efforts in improving the regional economy can be done by identifying and analyzing various sectors that have competitive advantages and also cooperative. This study focuses on the extent to which development-related inequality occurs and identifies various leading sectors that have the potential to increase economic development in North Kalimantan province.

LITERATURE REVIEW
Regional Economic Development

This development involves the development of alternative industries as well as new institutions, where communities and local governments work together in managing available resources and creating partnerships with the private sector (Arsyad, 2010). The main issues related to local government are emphasized in terms of various development policies based on unique values or characteristics of regions related to the potential use of physical resources and human resources, as well as institutions. There are various theories that can partially help to understand the important meaning of regional development, namely Neo-classical theory, location theory, cumulative causation theory, Economic Base Theory and also Attraction theory.
**Regional Gross Domestic Product**

One way to assess economic progress in a region is through Gross Regional Domestic Product (GRDP) data. According to Tarigan (2004), GRDP can be divided into two based on the price used, namely constant price and constant price. GDP based on current prices reflects the value added of goods and services produced in the current year, while GDP based on constant prices reflects the value added based on prices in the base year. There are three approaches or approaches in calculating GRDP or Gross Regional Domestic Product, namely as follows: (a) production approach, (b) expenditure approach, and (c) income approach.

**Theory of Economic Bases (Featured)**

Basic economic theory is an economic concept that says if the economic growth of a region is the determinant of the number of exports from that region. In the theory, the region is divided into 2 parts: the base sector and the non-base sector. The base sector consists of activities that focus on exports outside the regional Economic Area, while the non-base sector provides services and goods intended for local consumption. The base sector is considered a key driver in a region's growth, with growing exports expected to support regional economic growth. Opportunity and non-base work income is the determinant of opportunity and base work income. This theory also emphasizes that an export activity is an engine of growth, and the growth of a determining area is the export where it is found by an external demand.

**Development Inequality Between Regions**

Unequal income is explained to be a serious problem that occurs in every region, which problems in this regard need to be addressed immediately so as not to spread (Penglihnan, Alit and Cahyadin, 2016). In terms of development inequality is not the same between regions, this is in line with (Mallarangang, 2018) if the inequality of development between regions with absolute or also relative inequality between the level of welfare and potential that results in problems in inter-regional relations, if in til various nations the equitable distribution of economic development that is considered not good has created problems for the economy, culture, social which makes the state largely direct the policy so that the level of development inequality is lowered in each region.

**METHODOLOGY**

The scope of this study was conducted in North Kalimantan. The type of research carried out is quantitative, which is also an empirical approach in terms of managerial decision making. The sequence of this qualitative research is initially the formulation of the problem, preparing the research model, then obtaining the data, creating solutions, analyzing the results to be obtained and the process of implementing the results (Mudrajad, 2009).

The type used is secondary data where the data used is GRDP data as a result of the business field from constant prices in the province of North Kalimantan in 2018-2023 and Indonesia's GDP in 2018-2023. Data on Gross
Regional Domestic Product (GRDP) per capita and the population of North Kalimantan obtained from the Central Bureau of Statistics of North Kalimantan. In addition, in this study, secondary data were obtained from various literature sources to support relevant theories. Data collection methods used are documentation techniques. The following methods of analysis used in this study: Williamson Index, Location Quotient (LQ), Shift Share Analysis (SS) and Klassen typology.

RESEARCH RESULTS AND DISCUSSION

Williamson Index Results

The Williamson index is a method for assessing the level of disparity between regions based on GDP or Gross Regional Domestic Income per capita. According to the Central Statistics Agency (BPS), the Williamson index is useful for identifying development gaps using GRDP data. Regional disparities are a natural result of the development process and reflect an evolutionary stage in development itself. In this study, the Williamson index was used to measure the extent of economic growth disparities between districts and cities in North Kalimantan province, using data on GRDP or Gross Regional Domestic Income per capita and population from 2018 to 2023.

<table>
<thead>
<tr>
<th>Year</th>
<th>Index Williamson</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>0,84</td>
<td>High</td>
</tr>
<tr>
<td>2019</td>
<td>0,85</td>
<td>High</td>
</tr>
<tr>
<td>2020</td>
<td>0,81</td>
<td>High</td>
</tr>
<tr>
<td>2021</td>
<td>0,84</td>
<td>High</td>
</tr>
<tr>
<td>2022</td>
<td>0,84</td>
<td>High</td>
</tr>
<tr>
<td>2023</td>
<td>0,84</td>
<td>High</td>
</tr>
</tbody>
</table>

Source: Sports Results Data, 2024

In accordance with Table 1, it is known that the inequality that occurs between districts/cities in North Kalimantan province is quite high and then there is a decrease and also an increase from 2018-2023. In 2018 to 2019 the Williamson Index increased by 0.01/year, then there was another decrease in 2020 by 0.04. Then in 2021 there was another increase of 0.03 and even until 2023 there was no increase or decrease. The increase in the Williamson Index number in 2020 is due to the possibility of being affected by the Covid-19 pandemic which also has an impact on the economic sector, which is generally the value of this index in North Kalimantan province during the 2018-2023 period there is a downward trend, although there is a pandemic that makes development inequality still high in the Williamson Index Calculation in 2020.

Location analysis quotient (LQ)

Location Quotient analysis this Location Quotient analysis uses the use of Gross Regional Domestic Product/GRDP data as based on the business field of constant prices in the 2018 s.d. 2023 North Kalimantan Province. Here is the
result of Location Quotient analysis of North Kalimantan province.

Table 2. Location Quotient Value of North Kalimantan Province 2018 – 2023

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fisheries, Drought, Agriculture</td>
<td>1.38</td>
<td>0.14</td>
<td>1.40</td>
<td>0.88</td>
<td>1.44</td>
<td>1.43</td>
<td>1.11 Base</td>
</tr>
<tr>
<td>Quarrying and mining</td>
<td>3.64</td>
<td>3.72</td>
<td>3.50</td>
<td>1.93</td>
<td>3.67</td>
<td>3.62</td>
<td>3.35 Base</td>
</tr>
<tr>
<td>Processing Industry</td>
<td>0.44</td>
<td>0.44</td>
<td>0.43</td>
<td>0.43</td>
<td>0.42</td>
<td>0.41</td>
<td>0.43 Non Base</td>
</tr>
<tr>
<td>Gas and electricity procurement</td>
<td>0.06</td>
<td>0.06</td>
<td>0.07</td>
<td>0.07</td>
<td>0.07</td>
<td>0.08</td>
<td>0.07 Non Base</td>
</tr>
<tr>
<td>Waste Management, Recycling, Garbage, Water Supply Construction</td>
<td>0.85</td>
<td>0.80</td>
<td>0.80</td>
<td>0.78</td>
<td>0.79</td>
<td>0.80</td>
<td>0.80 Non Base</td>
</tr>
<tr>
<td>Construction</td>
<td>1.22</td>
<td>1.27</td>
<td>1.30</td>
<td>1.25</td>
<td>1.20</td>
<td>1.24</td>
<td>1.25 Base</td>
</tr>
<tr>
<td>Retail and large trade; repair of motorcycles and cars</td>
<td>0.82</td>
<td>0.84</td>
<td>0.87</td>
<td>0.88</td>
<td>0.91</td>
<td>0.93</td>
<td>0.87 Non Base</td>
</tr>
<tr>
<td>Warehousing and transportation</td>
<td>1.54</td>
<td>1.53</td>
<td>1.71</td>
<td>1.66</td>
<td>1.53</td>
<td>1.53</td>
<td>1.58 Base</td>
</tr>
<tr>
<td>Provision of food and drink and accommodation</td>
<td>0.48</td>
<td>0.48</td>
<td>0.51</td>
<td>0.50</td>
<td>0.50</td>
<td>0.51</td>
<td>0.49 Non Base</td>
</tr>
<tr>
<td>Communication and information</td>
<td>0.57</td>
<td>0.55</td>
<td>0.52</td>
<td>0.53</td>
<td>0.53</td>
<td>0.54</td>
<td>0.54 Non Base</td>
</tr>
<tr>
<td>Insurance and Financial Services</td>
<td>0.29</td>
<td>0.28</td>
<td>0.27</td>
<td>0.28</td>
<td>0.30</td>
<td>0.32</td>
<td>0.29 Non Base</td>
</tr>
<tr>
<td>Real Estate</td>
<td>0.33</td>
<td>0.32</td>
<td>0.31</td>
<td>0.31</td>
<td>0.32</td>
<td>0.31</td>
<td>0.32 Non Base</td>
</tr>
<tr>
<td>Company Services</td>
<td>0.14</td>
<td>0.13</td>
<td>0.13</td>
<td>0.07</td>
<td>0.13</td>
<td>0.13</td>
<td>0.12 Non Base</td>
</tr>
<tr>
<td>Compulsory Social Security, Defense and Government Administration</td>
<td>1.52</td>
<td>1.53</td>
<td>1.53</td>
<td>1.59</td>
<td>1.54</td>
<td>1.51</td>
<td>1.54 Base</td>
</tr>
<tr>
<td>Education Services</td>
<td>0.77</td>
<td>0.79</td>
<td>0.80</td>
<td>0.53</td>
<td>0.89</td>
<td>0.89</td>
<td>0.78 Non Base</td>
</tr>
</tbody>
</table>
In accordance with the calculation results of LQ in the table.1 reveals that North Kalimantan province has an advantage/LQ > 1 Mining and quarrying sector with an average LQ of 3.35; transportation and warehousing with an average LQ of 1.58; Government Administration, Defense and compulsory social security sectors with an average LQ of 1.54; construction with an average LQ of 1.25; Agriculture,Forestry and fisheries sectors with an average LQ of 1.11. This is the highest sector. The results explain that if the base sector has a fairly good value related to the economy in North Kalimantan province, the base sector is a sector that can meet market needs and has the potential to meet the needs of other regions, to export so that it can make economic growth increase in North Kalimantan province.

Various sectors in North Kalimantan province are also included in the non-base category that contributes to low economic growth or LQ < 1 is the supply of gas and electricity, corporate services and various insurance and service sectors. Various sectors that are not based on the above explain if the sector is not the leading sector in North Kalimantan province.

**Share Shift Analysis**

Shift share analysis is used to reveal the level of economic growth and describe the performance of each sector in an area rather than the same sector to the area that is the guideline so that it can display the shift caused by regional economic development. The results of this calculation can be seen in the following table.

**Table 3. The results of the Shift Share of North Kalimantan province in 2018 s.d. 2023**

<table>
<thead>
<tr>
<th>Sektor Lapangan Usaha</th>
<th>National Share</th>
<th>Proportional Share</th>
<th>Differential Share</th>
<th>Shift Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture, Forestry, Fishing</td>
<td>1.788.354,34</td>
<td>-667.932,83</td>
<td>1.168.315,29</td>
<td>2.288.736,80</td>
</tr>
<tr>
<td>Mining and quarrying</td>
<td>2.876.049,04</td>
<td>-584.330,15</td>
<td>282.177,20</td>
<td>2.573.896,10</td>
</tr>
<tr>
<td>Processing Industry</td>
<td>966.210,54</td>
<td>-196.245,65</td>
<td>-276.243,00</td>
<td>493.721,90</td>
</tr>
<tr>
<td>Electricity and Gas procurement</td>
<td>6.780,25</td>
<td>733,26</td>
<td>14.237,09</td>
<td>21.750,60</td>
</tr>
</tbody>
</table>
Based on Table 2 through the results of the calculation of the National Share which has the greatest value is the development and excavation business field, which it is quite influential because North Kalimantan is currently one of the provinces that can certainly develop into a developed province in its development really needed infrastructure development. In the national share results also all sectors are positive, then all sectors of the North Kalimantan economy show if the surplus number and is able to affect the economic sector in a region.

As for the Proportional Share results, it can be seen that almost all sectors have a negative value, which indicates that North Kalimantan specializes in various sectors that have moderate or slower growth nationwide. In the value of the differential Share that has the highest value in the growth is the mining and quarrying sector. In fact, all sectors in this value have a +/- positive calculation value which shows that this sector has a faster growth rate than the same sector in other regions and is expressed by sectors that have local advantages.

The conclusion obtained that if overall, every sector in the economy of North Kalimantan province showed positive performance, showed a good
competitive advantage. However, the analysis also showed variations in results between sectors, with some sectors classified as strong and others as weak.

**Klassen Typological Analysis**

Klassen typological analysis is a useful method for evaluating a sector's contribution in relation to the total contribution of various sectors. This analysis is also used to measure the extent to which the average growth rate of the sector, which is to assess the development of a sector. This method is based on a comparison of the growth rate (G) and contribution (s) of a sector in a particular region with a wider area, using GRDP data from North Kalimantan province compared to national GDP.

Table 4. Classification of GRDP sector of North Kalimantan province in 2018-2023 based on Klassen typology

<table>
<thead>
<tr>
<th>Kuadran I</th>
<th>Kuadran II</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gsi &gt; Gs dan Ski &gt; Sk</strong>&lt;br&gt;Construction and compulsory social security, defense and also government administration.</td>
<td><strong>Gsi &lt; Gs dan Ski &gt;</strong>&lt;br&gt;Fisheries, forestry and also agriculture; mining and quarrying; transportation and warehousing.</td>
</tr>
<tr>
<td><strong>Kuadran III</strong>&lt;br&gt;Gsi &gt; Gs dan Ski &lt; Sk&lt;br&gt;Gas and electricity procurement sector; retail and large trade, motorcycle and car repair; insurance and financial services; various other services.</td>
<td><strong>Kuadran IV</strong>&lt;br&gt;Gsi &lt; Gs dan Ski &lt; Sk&lt;br&gt;Processing Industry; Construction; Waste Recycling, Waste Management; Water Supply; information and Communication; Social Services and Health Services; Insurance and Financial Services, Provision of food and drink and accommodation; education services</td>
</tr>
</tbody>
</table>

Source: secondary data processing results

In accordance with the Klassen typology classification from 2018 to 2023, the construction sector and defense, government administration and mandatory social security are categorized as advanced and fast-growing sectors (Quadrant I). North Kalimantan province showed economic performance with a higher growth rate and sector contribution than the national average. Meanwhile, various sectors in Quadrant II experienced a lower economic growth rate than the national level but contributed more than the national average.

There are four sectors that fall into the category of potential and still have the potential to grow (Quadrant III). These sectors explain that the growth rate is higher than the national average, but the contribution is still smaller than the contribution of the national average. On the other hand, quadrant IV in North Kalimantan province is dominated by relatively underdeveloped sectors, with slower growth than national economic growth and smaller contributions.
DISCUSSION

Linkage of inequality and leading sectors of North Kalimantan province

Based on the results of the Williamson index analysis, it is seen that from 2018-2023 inequality in North Kalimantan province is still classified as high development inequality because the index number is above 0.5, that is, the average IW ranges from a value of 0.83. High inequality in economic development in various regions of North Kalimantan is an important problem. Economic factors that cause this inequality include differences in the number and quality of factors of production such as Land, Infrastructure, labor, capital, organizations, and companies. Areas adjacent to the center of development have a greater chance of developing compared to areas located on the periphery.

This is in accordance with research conducted by Hartati (2022), who said that the results of his research provide evidence that inequality between regions is due to uneven concentration of economic activity. Likewise, the results of a study carried out by Moniyana et al (2021) provide the results of the difference in economic gap explained by inequality, so that it can indicate that there is a high regional development inequality and low inequality. Meanwhile, the results of Walewangko’s research (2021) on development disparities using the Williamson index of the level of development inequality in Maluku 2015-2019 are at a low level. While Ryansyah (2023) is not in line with the results of her research, North Sumatra province is in the lame category with a level that is currently having an average of 0.37 which is a sign that development inequality is experiencing a reduction or wider distribution.

On the other hand, superior sectors have proven to be major contributors to local governments, especially related to the formation of GRDP which is an important indicator of welfare, but not every region in North Kalimantan province has a superior sector that is able to contribute significantly to regional economic growth. Various districts that have strength in kehuatan, Fisheries and also agriculture; construction; mining; warehousing and also Transportation; as well as defense, government and also compulsory social security proved to be able to contribute significantly or substantially in the regional economy. This is believed to help spur economic growth in various districts with potential in various leading sectors. Conversely, various districts that do not exist or simply have a variety of non-basic sectors tend to experience minimal economic growth.

The results of the above research are in line with the research of Wararag Verki, Ita Pngkan F. Rorong (2021) on the analysis of the economic potential of the Kab region. East Halmahera 2010-2019 explained that the Location quotient analysis has 2 sectors, namely excavation and mining and construction. Klassen’s typological analysis explains that overall, the economic potential in this district is included in the potential which can still develop. While the results of the Ludia and Debbi (2023) research seen from the Location Quotient results also show that Mimika regency is superior in the mining and excavation sector. And Shifr Share economic sectors that provide the greatest competitiveness of retail trade and also large, construction, fisheries, forestry
and also agriculture. While Surbakti et al (2021) regarding the leading sector for growth show that there are 12 base or leading subsectors, construction is an economic sector that has locational advantages and for the most part in the economic sector of Medan City is in Quadrant I.

This leads to high inequality in Kalimantan province because each district has different potentials in leading sectors. The linkage between leading sectors and disparities is key. Successful regional economic development depends on the success of the local government to formulate policies that can reduce inequality. The government can use the leading sector as a tool to reduce inequality in Kalimantan province through measures such as infrastructure development, job creation, education improvement and access to capital. Integrated efforts are needed to develop industries in the leading sectors so that they can be effectively managed by the community, which can ultimately make their welfare increase.

CONCLUSION

In accordance with the results of this study the following conclusions:

(1) In accordance with the results of the analysis of development inequality in North Kalimantan province with the use of the Williamson Index, the results obtained with the average PDR/ capita inequality in North Kalimantan province during 2018-2023. The results explain if the inequality of development in North Kalimantan province is high.

(2) In accordance with the results of the identification of superior sectors in North Kalimantan using Location Quotient, Klassen typology, Shift Share can be concluded if as follows:

a) Based on the results of the Location Quotient analysis, there are a number of main sectors that can be considered as the base sector, as well as various leading sectors in North Kalimantan province. Leading sectors include fisheries, forestry and also agriculture; quarrying and mining; warehousing and transportation; as well as defense, government administration and compulsory social security.

b) The results of Klassen's typological analysis classification classify North Kalimantan province into four quadrant categories. The construction and defense sectors, government administration and compulsory social security are in the advanced category and are experiencing rapid growth.

c) The results of the shift share analysis explained that overall, all sectors experienced faster growth than national growth. This reflects the improvement in economic performance of sectors in North Kalimantan province. The mining and quarrying sectors showed the highest competitiveness in growth, while the construction, agriculture, forestry and fisheries sectors showed competitive advantages.

RECOMMENDATION

In accordance with the results of the analysis of inequality by using the
Williamson Index, North Kalimantan province has high inequality, so in order to reduce inequality in terms of income, it is advisable for local governments to be expected to be able to formulate development policies appropriately for each Regency/City in North Kalimantan province. next, The Local Government is also expected to address infrastructure development in various districts which so far have a level of development that can be considered still lagging behind by allocating spending or spending larger areas.

The government of North Kalimantan province should pay more special attention to the leading sectors and potential sectors by implementing policies that can encourage the sector to grow so that it is expected for the future. And the government should also not ignore the role of sectors that fall into the category of non-leading so that the economic sector can jointly provide support in order to increase economic growth in North Kalimantan.

**ADVANCED RESEARCH**

The limitation of this study is that it only examines in the short term, namely for 6 years of research from 2018-2023, then the variables used are only a few variables with an analysis of how development inequality and which sectors are superior in North Kalimantan province.

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