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Analysis of Economic Development and Inequality Between Regency/City Regions in West Nusa Tenggara Province 2019–2024

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ABSTRACT

Using GDP growth and GRDP per capita as indicators, this study will examine the economic development patterns of districts and cities in West Nusa Tenggara Province during the period 2019 to 2024. This study will also explain how economic disparities develop between these regions. Utilizing secondary data collected by the Statistics Indonesia (BPS) of West Nusa Tenggara Province, this study employs a quantitative descriptive method. Researchers use the Williamson Index to measure economic inequality between regions by considering population size, and the Klassen Typology to categorize districts and cities based on economic growth and GRDP per capita. Based on the research findings, districts and cities in West Nusa Tenggara Province have varying relative positions and dynamics during the study period. The Williamson Index values for 2019, 2020, 2021, 2022, 2023, and 2024 are 0.688, 0.967, 0.940, 1.098, 0.961, and 1.025, respectively. This value shows that economic inequality between regions fluctuates, but overall tends to widen, as indicated by the increase in the Williamson Index from 0.688 in 2019 to 1.025 in 2024. This finding shows that differences in economic conditions between regions in NTB Province remain a challenge in realizing more equitable economic development.

INTRODUCTION

Economic development is a continuous process to improve a region's ability to produce goods and services, increase community income, and improve the well-being of its residents. However, inequality in the distribution of development outcomes is not always a byproduct of rapid economic expansion. Economic growth may be uneven across regions due to differences in human resources, infrastructure, investment, economic structure, and natural resources. Azim et al. (2022) show that differences in economic conditions between regions are related to development inequality, while Bangun et al. (2024) emphasizes the importance of human

resource development in supporting economic development. Therefore, development success should not only be measured by increased economic growth, but also by how evenly that growth is distributed across regions.

Economic growth and GRDP per capita vary from region to region, reflecting development disparities. According to the Central Statistics Agency (BPS) (2023), one indicator used to describe a region's economic activity is GRDP. Differences in these indicators can indicate development disparities and differences in economic capacity between regions (Hatta & Amir, 2022) . This finding aligns with the findings of the Santoso and Anggraini (2024) .

This issue is relevant for study in West Nusa Tenggara Province, which encompasses districts/cities with diverse geographic characteristics, resources, and economic structures on the islands of Lombok and Sumbawa. Research by Abdiriyanto and Cita (2022) and Wahidin et al. (2022) demonstrates the existence of development inequality and differences in regional progress levels in West Nusa Tenggara, necessitating analysis to understand the economic development of each district/city.

These differences in economic characteristics are also evident in the potential of leading sectors and the growth structure of each region. Alwi et al. (2023) studied the development of the economic sector in Sumbawa Regency using the Klassen Typology, while Ibramsyah et al. (2024) analyzed the basic and leading sectors in West Nusa Tenggara. The main economic sectors of Mataram City were also highlighted by Yanti et al. (2024). These research results demonstrate the importance of understanding the economic characteristics of each region in analyzing regional development. Therefore, studies at the district/city level are necessary so that differences in economic position and regional development are not only viewed based on the overall condition of the province.

Research on development inequality in NTB was conducted by Suprianto et al. (2022) using the Williamson Index and Klassen Typology for the period 2017–2020. In their analysis of development inequality across various districts and cities in NTB from 2018 to 2022, Fitri and Rindiani (2024) used the Williamson Index, Klassen typology, LQ, and the Shift-Share method. Furthermore, Hidayatullah and Sumitro (2024) demonstrated that the Klassen Typology can be used to map disparities and economic potential across districts/cities, while Sari and Santoso (2025) applied it in a study of economic growth and inequality in Indonesia. These previous studies serve as the basis for this study, but there is still room to update the picture of economic development in districts/cities in NTB for the observation period 2019–2024.

By integrating the Klassen Typology and the Williamson Index, this study presents an updated analysis of economic growth in districts and cities in West Nusa Tenggara (NTB). The Klassen Typology uses economic growth and GRDP per capita relative to the province to categorize regions, while the Williamson Index takes population size into account to measure economic inequality between regions. To demonstrate how the economy changed before, during, and after the COVID-19 pandemic, the period 2019–2024 was selected. Combining

these two approaches is expected to reveal a more comprehensive picture of district and city conditions, as well as changes in inequality levels over the study period.

Based on the description, this study aims to analyze the development of economic growth and GRDP per capita of districts/cities in NTB Province, classify the relative position of each region using the Klassen Typology, and measure the development of development inequality between regions using the Williamson Index during the period 2019–2024. The results of the study are expected to update information regarding the characteristics of regional economic development and become a consideration in understanding the differences in economic development between districts/cities in NTB Province.

RESEARCH METHODS

Using numerical data, this study describes and classifies regional economic conditions using descriptive quantitative techniques. This study covers the entire province of West Nusa Tenggara, including its ten regencies and cities: West Lombok, Central Lombok, East Lombok, North Lombok, West Sumbawa, Sumbawa, Dompu, Bima, Mataram City, and Bima City. The study was conducted in 2026 using regional economic data from 2019–2024. This period was chosen to observe changes in regional economic conditions before the pandemic, during the pandemic, and during the economic recovery period.

Statistical reports, scientific articles, research papers, and other academic research were thoroughly reviewed to collect secondary data used in this study. This research dataset covers the period 2019–2024 and includes information from many districts and cities in West Nusa Tenggara Province. The primary sources of this information are publications from the Central Statistics Agency (BPS) of West Nusa Tenggara Province and BPS data from each district and city in the province. The information collected includes the per capita GRDP growth rate, the GRDP growth rate using the ADHK (Adjusted Gross Domestic Product) ratio (ADHK), and population estimates required to calculate the Williamson Index. According to BPS (2026), official figures on economic growth rates, per capita GRDP, and population can be found in BPS publications. Relevant BPS publications for the study period were used as data sources for various other indicators. All data used are official figures available in BPS publications and were not recalculated by the researcher.

A longitudinal descriptive study of the dynamics of quadrant shifts, the Williamson Index, economic growth, GRDP per capita, and the Klassen typology was used to analyze the data. NTB Province and each of its regencies and cities were measured based on economic growth, defined as the percentage increase in GRDP over the ADHK. GRDP per capita is used to describe the average economic value available to each resident and is one of the main indicators in the Klassen Typology.

The grouping of districts and cities based on their GRDP per capita and economic growth rate was carried out using the Klassen typology. Annual comparisons between the

economic growth rate (Ri) and GRDP per capita (Yi) of districts and cities with that of West Nusa Tenggara Province (Y) were used to conduct this study. In Quadrant I there are developed and rapidly developing regions, in Quadrant II there are developed but stagnant regions, in Quadrant III there are rapidly developing regions, and in Quadrant IV there are relatively underdeveloped regions; therefore, there are four different classifications for districts and cities based on the values of Ri and Yi. This categorization is used to describe the relative position of each district or city within West Nusa Tenggara Province in a given year.

The dynamics of quadrant shifts were analyzed descriptively longitudinally based on the results of the annual Klassen Typology to track changes in the position of each district/city during 2019–2024. The quadrant positions of each district/city in 2019, 2020, 2021, 2022, 2023, and 2024 were compared to identify districts and cities that remained in the same quadrant, moved to another quadrant, the direction of the shift, and the year the position change occurred. Quadrant shifts are used to describe changes in relative position from year to year and are not automatically interpreted as an increase or decrease in the level of regional progress, because this study does not establish the order of the four quadrants as a hierarchy of progress.

To better understand the level of economic development disparity between regencies and cities in West Nusa Tenggara Province from 2019 to 2024, the Williamson Index was used. This index takes into account variations in GRDP per capita and population. Calculations are performed annually to determine the level and progression of inter-regional inequality from year to year. The Williamson Index formula used is:

$$Vw = \sqrt{[\Sigma\ (fi/n)(Yi - Y)^2]} / Y$$

The Williamson Index (Vw), GRDP per capita (Yi) of the i-th district/city, GRDP per capita (Y) of West Nusa Tenggara Province, population (fi) of the i-th district/city, and total population (n) of West Nusa Tenggara Province are the various variables used in this calculation. The closer the Williamson Index value is to 0, the lower the inequality between regions; conversely, a larger value indicates increasing inequality.

RESULTS AND DISCUSSION

Results of Regional Typology Analysis

Regencies and cities in West Nusa Tenggara Province were ranked based on their per capita GRDP and economic development from 2019 to 2024 using the Klassen Typology study. To classify the various regions, researchers compared two economic indices for each regency and city with the economic index of West Nusa Tenggara Province in the same year. This comparison categorized each regency and city into one of four quadrants in the Klassen typology: developed and rapidly developing regions (Quadrant I), developed but under pressure regions (Quadrant II), rapidly developing regions (Quadrant III), and relatively less developed regions (Quadrant IV). The classification results were then used to describe differences in

economic characteristics and the dynamics of changes in the relative positions of regencies/cities during the study period.

Table 1. Typology Classification of District/City Classification in West Nusa Tenggara Province 2019–2024

Regency/City	2019	2020	2021	2022	2023	2024
West Lombok	IV	IV	III	IV	III	IV
Central Lombok	III	IV	III	IV	III	IV
East Lombok	III	IV	III	IV	III	IV
Sumbawa	I	II	II	II	I	II
Dompu	I	II	II	II	I	II
Bima	III	IV	IV	IV	III	IV
West Sumbawa	II	I	II	I	II	I
North Lombok	III	IV	IV	IV	III	IV
Mataram City	I	II	I	II	I	II
Bima City	III	II	II	II	I	II

Source: BPS West Nusa Tenggara Province, processed.

The analysis results show differences in relative positions between regions during the study period. These differences illustrate that economic development is not occurring at the same rate. Each region has different economic growth conditions and per capita GRDP, resulting in different typologies.

Changes in quadrant positions from year to year also demonstrate the dynamics of economic development between regions. Therefore, the Klassen Typology is used not only to assess the condition of a region in a given year but also to illustrate changes in the relative positions of districts/cities during the 2019–2024 period.

Inter-Regional Economic Inequality Based on the Williamson Index

This index is used as a complementary analysis to illustrate the level of variation in economic conditions between regions in West Nusa Tenggara Province. Calculations are based on the per capita GRDP of each district/city, taking into account the population of each region. The results of the Williamson Index calculations for the 2019–2024 period are presented in Table 2. The index value is used to describe the development of the level of economic inequality between districts/cities in NTB Province during the research period.

Table 2. Williamson Index of West Nusa Tenggara Province 2019–2024

Year	Williamson Index
2019	0.688
2020	0.967
2021	0.94 0
2022	1,098
2023	0.961
2024	1,025

Source: BPS West Nusa Tenggara Province, processed.

Based on Table 2, the Williamson Index value changed during the 2019–2024 period. In 2019, the index value was 0.688. This value indicates variations in economic conditions between districts/cities based on differences in GRDP per capita, taking into account the population of each region.

In 2020, the Williamson Index increased to 0.967. This increase indicates that variations in economic conditions between regions have changed compared to the previous year. This period coincided with the COVID-19 pandemic, which put pressure on economic activity in various regions. However, the change in the Williamson Index value should not be used to conclude that the pandemic was the sole cause of changes in inequality, as the index reflects aggregate conditions based on differences in per capita GRDP and population.

In 2021, the Williamson Index decreased to 0.940. This decrease indicates a change in economic conditions across regions compared to 2020. This coincided with the onset of economic recovery in various districts/cities. However, economic development in each region was not entirely uniform, so differences in economic conditions remained evident.

Furthermore, in 2022, the Williamson Index increased to 1.098 , the highest value during the study period. This increase demonstrates that variations in economic conditions between regions, based on per capita GRDP, considering population, have increased compared to the previous year. Differences in per capita GRDP between regencies/cities remain significant, reflected in the increase in the index value.

In 2023, the Williamson Index decreased to 0.961. This decrease indicates a change in economic conditions between regions compared to the previous year. Despite the decline in the index, differences in economic conditions between regions are still evident in the differences in GRDP per capita between regencies/cities.

In 2024, the Williamson Index value increased again to 1.025 . This value indicates that variations in economic conditions between regions experienced changes again at the end of the study period. The 2024 calculation used population data for Central Lombok Regency (1,109,800), Sumbawa Regency (536,597), and the total population of West Nusa Tenggara Province (5,646,015).

Overall, the Williamson Index values exhibited a fluctuating pattern during the 2019–2024 period. In 2019, the value was recorded at 0.688, while in 2022, it peaked at 1.098. These changes reflect the variability in population and per capita GRDP across West Nusa Tenggara Province. A Williamson Index value close to 0 indicates decreasing inequality, while a high value indicates increasing inequality.

The Relationship between the Results of Klassen's Typology and the Williamson Index

These results provide complementary information in describing the state of economic development across regions in West Nusa Tenggara Province. The Klassen typology shows the relative position of each district/city based on economic growth and per capita GRDP, while the Williamson Index provides an aggregate picture of variations in economic conditions across regions, taking population into account.

The differences in the positions of districts/cities in the Klassen Typology demonstrate that economic development across regions is not uniform. This condition is also reflected in changes in the Williamson Index values during the study period. Therefore, by combining the two, researchers can obtain a more comprehensive picture of economic growth across various regions in West Nusa Tenggara Province.

The findings of this study are descriptive in nature , so changes in the Williamson Index and Klassen Typology positions are not used to draw conclusions about causal relationships. The analysis focuses on describing the economic conditions and dynamics of districts/cities during the 2019–2024 period.

CONCLUSION AND SUGGESTIONS

Conclusion

The study findings show that from 2019 to 2024, regencies and cities in West Nusa Tenggara Province will experience varying economic development, as measured by economic growth and per capita GRDP. Klassen's typology analysis shows that different regions have different relative positions, and that several regencies and cities have experienced changes in position during the study period. This situation illustrates that economic development across regions in West Nusa Tenggara Province has not been uniform.

The Williamson Index analysis also shows the dynamics of economic inequality between regions during the 2019–2024 period. The Williamson Index values for 2019, 2020, 2021, 2022, 2023, and 2024 were 0.688, 0.967, 0.940, 1.098, 0.961, and 1.025, respectively. Taking into account the population of each district and city, the figures show how the level of

economic heterogeneity between regions has changed in line with variations in per capita GRDP.

Overall, the use of the Klassen Typology and the Williamson Index provides a complementary picture of regional economic development in West Nusa Tenggara Province. The Klassen Typology illustrates the relative position of each district/city, while the Williamson Index provides an aggregate picture of variations in economic conditions across regions.

Limitations and Implications

This study uses a descriptive method using secondary data from 2019–2024. Therefore, the results describe the economic conditions and developments between regions, but are not intended to explain causal relationships or the factors that cause changes in regional positions and Williamson Index values. Furthermore, the use of economic growth and GRDP per capita does not cover all aspects of regional development, such as poverty, unemployment, education, health, and other social indicators.

Implications are that the research results can provide an initial overview of the differences in economic conditions between districts/cities in West Nusa Tenggara Province. Information on the relative position and development of inequality between regions can be used as a basis for assessing the development characteristics of each region.

Suggestion

The NTB Provincial Government and district/city governments are expected to formulate regional development policies tailored to the characteristics and economic conditions of each region based on the results of the Klassen Typology. Regions in Quadrant I need to be encouraged to maintain economic growth by strengthening leading sectors and increasing productivity. Regions in Quadrant II require policies that encourage accelerated economic growth, while regions in Quadrant III need support through increasing per capita income and strengthening community economic capacity. Meanwhile, regions in Quadrant IV need more attention through equitable distribution of infrastructure development, improving human resource quality, and developing local economic potential to reduce disparities with other regions.

In addition, regional governments need to strengthen development coordination between districts/cities, increase equitable access to public facilities and economic opportunities, and direct budget allocations to underdeveloped regions and sectors. The Williamson Index can also be used as evaluation material in formulating equitable development policies and periodically assessing the development of economic inequality between regions.

Future research could expand the observation period and add other socio-economic indicators to provide a more comprehensive analysis of regional development conditions. Further research could also employ more advanced analytical approaches to identify factors related to changes in economic growth and inter-regional inequality. Furthermore, research

covering a broader region or period could be conducted to obtain a more comprehensive picture of regional development.

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