

# Economic Gap Analysis of West Kalimantan Border Region

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## Abstract

Economic inequality is a crucial issue, especially in border areas where economic development is often uneven. This study analyzes the Theil Index to measure economic disparity in border areas of West Kalimantan from 2019 to 2023. The findings reveal that Sanggau Regency consistently has the highest Theil Index, reaching 4.307 in 2021, indicating severe economic inequality. Kapuas Hulu Regency also exhibits an increasing trend, with its Theil Index reaching 2.429 in 2023, suggesting widening disparities. Meanwhile, Sambas and Bengkayang Regencies maintain relatively stable and lower indices, indicating more evenly distributed economic conditions. Singkawang City, as an economic hub, shows fluctuating inequality trends but remains among the higher indices. This research contributes a novel perspective by focusing on economic inequality in border areas, which has often been discussed at the national level rather than in localized studies. The findings highlight the unique economic challenges faced by border regions, emphasizing the need for more inclusive policies, infrastructure development, and cross-border economic optimization to ensure equitable economic growth in West Kalimantan's border areas.

**Keywords:** Economic Inequality, Theil Index, Border Area, West Kalimantan, Regional Disparity.

## 1. Introduction

Economic development is seen as a multidimensional process that involves fundamental changes in social structures, people's attitudes, and national institutions, while pursuing accelerated growth, reduced income inequality, and poverty alleviation (Todaro & Smith, 2009). No matter how big or how developed each country is, disparities in economic development between regions are a problem that occurs among uneven regions (Andrei et al., 2021). In the end, this gap will lead to various problems, which are detrimental to the macroeconomic development process that each region wants. Whereas according to (Todaro & Smith, 2009) the objectives of economic development are: a) Increasing the availability and widening the distribution of basic necessities, such as food, clothing, shelter, health and security protection. b) Improving standards of living, not only in the form of increasing incomes, but also including additional employment, improving the quality of education, and increasing attention to cultural and human values, all of which not only improve material welfare, but also foster self-esteem in the individuals and nations concerned. c) The expansion of economic and social options for individuals and the nation as a whole, by freeing them from the bondage of servitude and dependence, not only on other people or nations, but also on any forces that have the potential to degrade their human values. Therefore, regional economic development is a process where local governments and their communities manage every available resource and form a partnership pattern between local governments and the private



sector in creating new jobs and stimulating the development of economic activities in this case economic growth in the region (Arsyad, 1999).

The gap in economic development between regions in Indonesia is also inseparable from the diversity of natural resource potential, geographical location, availability of infrastructure, and quality of human resources (Zen & Lestari, 2022). This diversity can be an advantage, but it can also cause national socio-political insecurity. For this reason, it is important to plan and organize economic development with the aim of reducing economic disparities between regions. To support equitable economic development in Indonesia, a thorough understanding of the issue of economic disparities should be the basis for development planning at both the national and regional levels. Economic growth and low income disparities between populations, regions, and sectors are two ways that can be used to determine the level of success of economic development (Kuznets, 2019). Rapid economic growth is usually a sign of a better country's economy, but there are economic development problems in the form of, If economic growth does not expand, economic development gaps between regions will appear. Along with balance. Over the years, geographical disparity has become an issue that covers every area from subdistricts, districts/cities, provinces, islands and even the world as a whole (Kadriwansyah et al., 2021). Yuliani (2018) proposed that economic development gaps between regions can impact the balance in the economic activity cycle which affects the imbalance of prosperity identifying areas. Economic disparities weaken interactions and create a structure of relationships between regions. Due to excessive resource depletion, also known as "backwash", resulting in excessive accumulation of value in economic centers, hinterland regions are weakened. Economic disparities between regions not only lead to sub-optimal regional development capacity, but also eliminate the potential for aggregate economic growth that can be achieved through mutually reinforcing or synergistic economic interactions between regions. In regional economic studies, economic disparity between regions is a deep and complex phenomenon. This phenomenon has a major impact on overall economic growth, not just the development of certain sectors. The concept of (backwash effect) arises as a result of excessive resource depletion from the regions surrounding a developed economic center, resulting in excessive accumulation of economic value in the center.

Knowing that there is a problem of economic disparities between regions, according to Sjafrizal (2008) there are several factors that cause economic disparities between regions, namely; Some of the main factors that cause economic disparities between regions are as follows (Sjafrizal, 2012): (1) differences in natural resource content; (2) differences in demographic conditions; and (3) non-smooth mobility of goods and services; (4) Concentration of economic activity in the region; and (5) Regions that receive greater government investment, or can attract additional private investment will tend to experience higher economic growth according to the region. Economic growth will be more meaningful if it can be enjoyed by all levels of society equally, which is often followed by changes in the income structure, especially for developing countries. The problem faced in Indonesia is economic inequality or the gap in income distribution between groups of people or the number of people below the poverty line (Rycroft, 2017). Large inequalities in income distribution (economic disparity) and poverty levels are two major problems in many developing countries, and Indonesia is no exception (Rycroft, 2017). As stated by Hirschman (1958), the transmission of economic growth between regions is usually unbalanced, and the concentration of economic activity in certain places tends to increase (Sjafrizal, 2012). This is mainly due to the significant variation in locational advantages between regions, which causes economic activities to be concentrated in a few locations. Borts (1960), who emerged as an additional analysis of the neo-classical regional economic growth theory pioneered by Solow

(1957) laid the theoretical foundation for the economic development gap between regions. Bort's analysis has become very popular in regional economics because it can theoretically explain why there are increasing (divergence) and decreasing (convergence) tendencies in economic disparities between regions. His analysis starts with the assumption that there is a degree of economic disparity between regions. Because of these economic disparities, many regions are still lagging behind in economic development, fast-growing strategic areas are still underdeveloped, border and remote areas are underdeveloped, and there are development differences between cities and villages (Bappenas, 2016). While it is almost impossible to completely eliminate regional disparities, efforts should be made to reduce them. This is done to avoid the various adverse effects that can arise due to large regional disparities. Large disparities between regions can threaten socio-economic stability, with particularly adverse effects on socio-political cohesion (Bappenas, 2018).

## 2. Methods

This research uses quantitative methods with secondary data. In addition, this is a comparative study. Here, the same variable as the independent variable is used for more than one sample, or in different times. The aim is to explain and compare the pattern and structure of the economy between districts/cities in the border areas of West Kalimantan Province, namely Sambas Regency, Bengkayang Regency, Sanggau Regency, Sintang Regency, Kapuas Hulu Regency and Singkawang City, as well as to identify gaps in the economy of special border areas. This research was conducted in several border regencies and cities in West Kalimantan Province with data from 2019 to 2023.

Secondary data is the type of data used in this research. Secondary data is data obtained indirectly from sources, either through documents or second parties. This data is published online by the West Kalimantan Central Bureau of Statistics and consists of Gross Regional Domestic Product (GRDP) data for each Regency/city and West Kalimantan Province, population data, and per capita income data for each Regency/City of the border area in West Kalimantan Province.

According to OECD (2016) in the OECD Regions at a Glance 2016 report, the Theil index is used to measure disparities between regions in OECD countries. The index shows a value between 0 and infinity, where 0 indicates no disparity. The index can also be broken down into "between-country" and "within-country" components so that the sum of the two equals the total entropy. To determine the proportion of causes of inequality and the type of inequality that occurs whether it is an interregional gap or an internal regional gap, this study also uses the Theil Index. The main characteristic of the Theil Index is its ability to distinguish between-region inequality and within-region inequality (Mudrajad, 2006). The Theil Index is expressed in the following formula:

$$I(y) = \sum \left( \frac{y_j}{Y} \right) x \log \left[ \left( \frac{y_j}{Y} \right) / \left( \frac{x_j}{X} \right) \right]$$

Where:

$I(y)$  = Theil entropy index

$y_j$  = GDRP per capita of district j

$Y$  = Average GRDP per capita of west Kalimantan Province

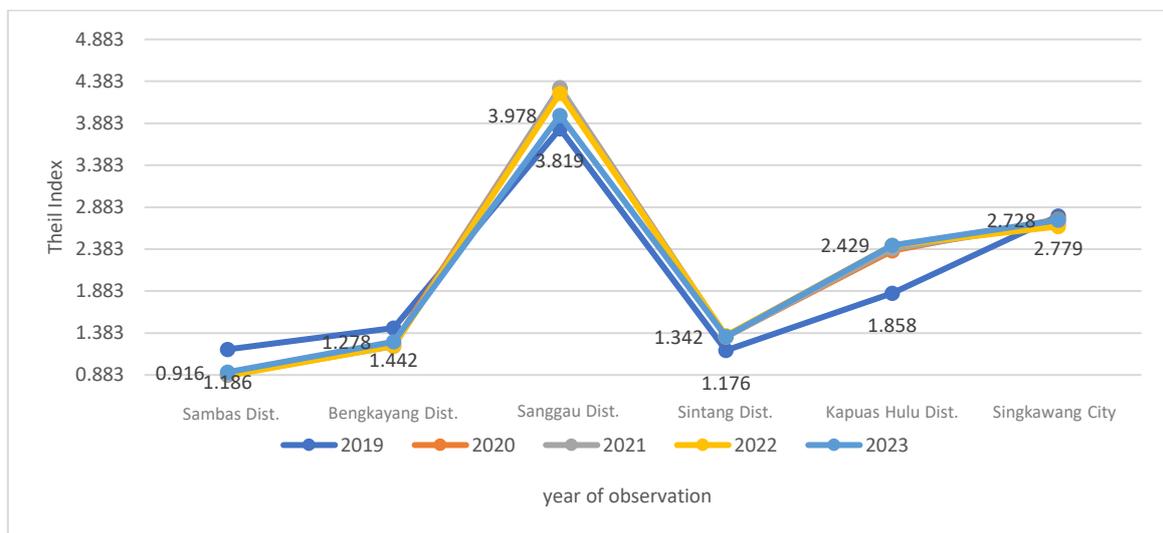
$x_j$  = Population of district j

$X$  = Population of west Kalimantan Province

### 3. Results and Discussion

#### 3.1. Research Results

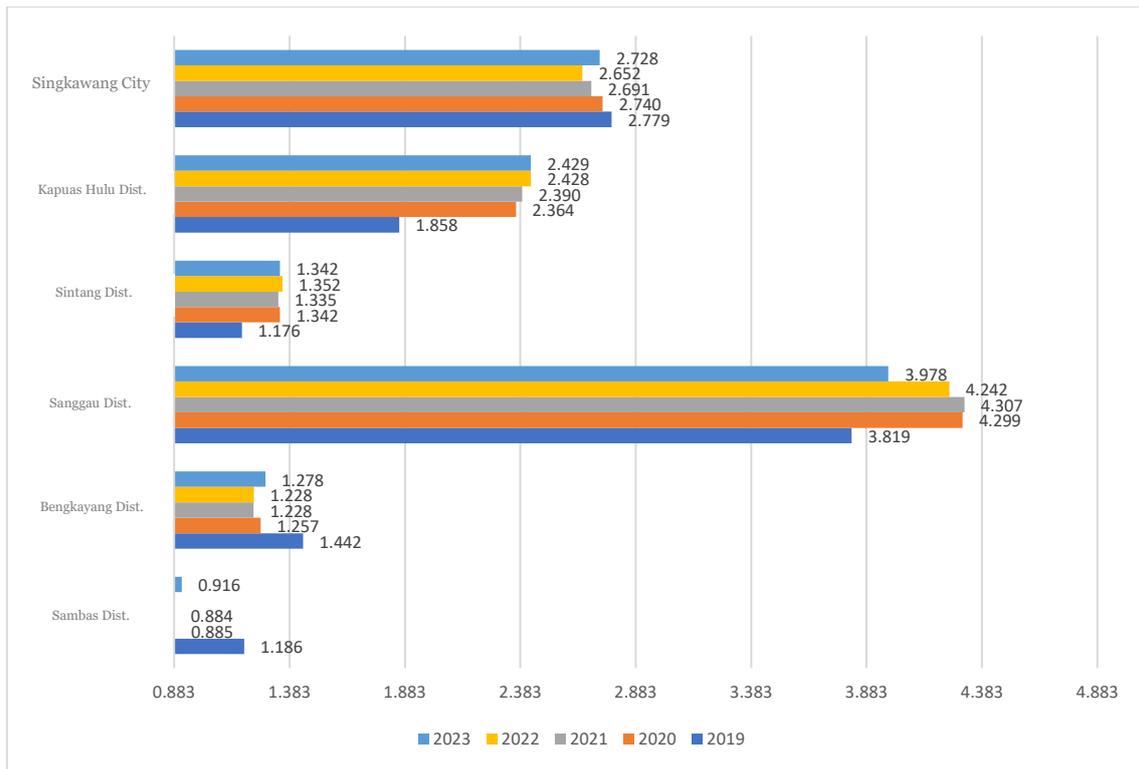
The following will show Regional Economic Gap in the Theil Entropy Index value in the Border Region of West Kalimantan Province during 2019-2023. The Theil Index shows economic disparity, and the graph shows the West Kalimantan region from 2019 to 2023. Higher values indicate greater disparity. The graph shows that Sanggau district experienced the highest spike in gap in 2022 with a Theil index of 3.978, which is almost the same as in 2021 (3.819). Then, in 2023, the gap experienced a significant decline. The trend increased in Bengkayang district from 2019 to 2023, but was more stable compared to Sanggau. Meanwhile, Sintang has a slightly lower Theil index than Sanggau. Its lowest value was 1.176 in 2020, but it started to increase gradually in the following years. The gap in Kapuas Hulu district continues to increase. In 2023, the index reached 2.779, almost the same as the figure in Singkawang City. Overall, this graph shows that economic disparities in some regions have tended to increase in recent years, especially in Sanggau and Kapuas Hulu districts. Other regions experienced more stable variations.



**Figure 1. Theil Entropy Index of Border Areas in West Kalimantan Province 2019-2023**

Source: data processing in 2024

For more details, let's also look at the Theil Entropy Index of each Regency / City of the Border area in West Kalimantan Province.



**Figure 2. Theil Entropy Index of Border Areas in West Kalimantan Province 2019-2023**

Source: data processing in 2024

Among the border regions of West Kalimantan from 2019 to 2023, the Theil Index results show distinct economic differences. Regions with higher Theil indices show greater differences in income distribution. Sanggau district consistently recorded the highest Theil index values, especially in 2021 (4.307), suggesting that there are significant economic differences there. This could be due to inequality in the growth of the cross-border trade sector with Malaysia, differences in access to economic resources, or the dominance of certain sectors.

Kapuas Hulu District's index, on the other hand, increased significantly from 1,858 in 2019 to 2,429 in 2023. This number indicates an increase in economic disparity in the area. This disparity may be caused by unequal economic access, infrastructure development, and differences in income levels between community groups. In contrast, Sambas Regency has the lowest Theil index, although it changed little from 2019 to 2023. This suggests that, compared to other border districts, its economy tends to be more equitable. In addition, the index values of Sintang and Bengkayang Regencies are relatively more stable with less sharp fluctuating trends, suggesting that economic disparities in these areas have not changed significantly over the past five years. As a growing economic center, Singkawang City shows a rather stable index trend. With a slight decline in 2022 (2.652) and a rebound in 2023 (2.728), the city shows a rather stable trend. This shows variations in income distribution, which may be due to the growth of the trade and services industry as well as the effects of economic activity in urban areas. Overall, the Theil Index results show that the border regions of West Kalimantan still experience considerable economic disparities, especially in Sanggau and Kapuas Hulu districts. This could be a signal for local governments to take steps to improve economic equity by boosting the local business sector, optimizing cross-border trade, and improving

infrastructure and economic accessibility for border communities to encourage economic growth.

### 3.2. Discussion

Sanggau Regency witnessed considerable disparity notably a sharp spike during 2021-2022 with indices standing at 4.307 and 3.978 respectively indicating potentially deep-seated economic imbalances ostensibly linked to cross-border trade with Malaysia. Sanggau likely sees patchy dispersal of pecuniary advantages from transborder commerce with enterprises and localities nearer border posts probably snagging more lucre. Polarization occurs frequently in border economies where gains from international trade diffuse unevenly across region sometimes rather slowly.

Kapuas Hulu's inequality soared drastically from 1.858 in 2019 to a rather alarming 2.429 by 2023 representing a troubling trend. Divergence may reflect stark differences in economic structures and development strategies amongst regions with disparate histories and socioeconomic profiles. Kapuas Hulu's economy may be witnessing a yawning chasm between sectors tied pretty closely to far-flung external markets and ones serving pressing local needs pretty well. Persistent structural factors rather than fleeting economic shocks underlie this upward trend remarkably. Varying levels of disparity across West Kalimantan's border regions starkly highlight how geographic positioning relative to border crossings influences economic outcomes profoundly. Regions like Sanggau with formal border gates and established economic corridors show starkly different inequality patterns from areas with sparse formal cross-border interactions.

## 4. Conclusion

The results of the Theil Index analysis in the West Kalimantan border region from 2019 to 2023 show fluctuations in economic inequality in each district/city. Sanggau Regency recorded the highest Theil Index value, especially in 2021 (4.307), which indicates a significant level of economic inequality in this region. Meanwhile, Kapuas Hulu district experienced a trend of increasing inequality, with the index continuing to rise until it reached 2.429 in 2023, signaling an increasingly unequal economic distribution. Sambas and Bengkayang districts have lower and relatively stable indices, indicating that economic inequality in these areas is more manageable compared to other districts. Singkawang City shows a fluctuating trend but remains in a higher index range than some other regions. Overall, these findings indicate that economic development in border areas is still uneven, with some regions experiencing greater disparities than others. Therefore, more inclusive and sustainable policies are needed, including improving infrastructure, strengthening the local community economy, and optimizing cross-border trade to reduce economic disparities in the border areas of West Kalimantan.

The novelty in this study lies in the focus of analyzing economic disparities in border areas, which have been mostly discussed on a national scale. Most studies on economic disparity in Indonesia have focused on interprovincial or national-scale inequality, while this study provides a more specific approach to border areas. As such, the results of this study make an important contribution to understanding economic disparities in border regions, which have unique challenges related to accessibility, infrastructure and cross-border economic dynamics. Therefore, more inclusive and region-based policies are needed to reduce economic disparities and promote more equitable development in the border areas of West Kalimantan

## 5. References

- Andrei, J. V., Chivu, L., Gogonea, R.-M., Iacob, S. E., Patrascu, A., Popescu, C., Vasic, M., & Zaharia, M. (2021). Business demography and economic growth: similarities and disparities in 10 European Union countries. *Journal of Business Economics and Management*, 22(5), 1160–1188.
- Arsyad, L. (1999). Ekonomi Pembangunan Yogyakarta. *STIE YKPN*.
- Borts, G. H. (1960). The equalization of returns and regional economic growth. *The American Economic Review*, 50(3), 319–347.
- Hirschman, A. O. (1958). *The strategy of economic development*. Yale University Pres.
- Kadriwansyah, K., Semmaila, B., & Zakaria, J. (2021). Analisis Ketimpangan Wilayah di Provinsi Sulawesi Selatan Tahun 2014-2018. *PARADOKS: Jurnal Ilmu Ekonomi*, 4(1), 25–36.
- Kuznets, S. (2019). Economic growth and income inequality. In *The gap between rich and poor* (pp. 25–37). Routledge.
- Mudrajad, K. (2006). *Ekonomika Pembangunan: Teori, Masalah, dan Kebijakan*. UPP Akademi Manajemen Perusahaan YKPN.
- OECD. (2016). *OECD Regions at a Glance 2016 report*.
- Rycroft, R. S. (2017). *The economics of inequality, discrimination, poverty, and mobility*. Routledge.
- Sjafrizal. (2008). *Ekonomi Regional: Teori dan Aplikasi*. Niaga Swadaya.
- Sjafrizal. (2012). *Ekonomi Wilayah dan Perkotaan*. PT RajaGrafindo Persada.
- Solow, R. M. (1957). Technical change and the aggregate production function. *The Review of Economics and Statistics*, 39(3), 312–320.
- Todaro, M. P., & Smith, S. C. (2009). *Economic development*. Pearson education.
- Yuliani, R. (2018). *Analisis Ketimpangan Pendapatan Kabupaten/Kota di Provinsi Bali dan Faktor-Faktor yang Mempengaruhinya*. Universitas Islam Indonesia.
- Zen, A. M., & Lestari, S. D. (2022). Dampak Gelombang Ekonomi Baru Bagi Perilaku Usaha Kuliner. *Transekonomika: Akuntansi, Bisnis Dan Keuangan*, 2(5). <https://doi.org/10.55047/transekonomika.v2i5.171>