

Sustainable Development of Indonesia's Land Border Areas; Overview from an Economic Perspective

Dian Anggraeny Rahim¹, Dominicus Savio Priyarsono², Ernan Rustiadi³,
Yusman Syaukat⁴

¹Faculty of Economics, Darma Persada University

^{2,4}Faculty of Economics and Management, IPB University

³Faculty of Agriculture, IPB University

Corresponding Author: dian.rahim21@gmail.com

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Abstract

The development of land border areas is continuously inevitable, so the government annually rolls out programs and policies. The sustainability of this development is expected to make the border area a centre of economic growth, have a multiplier effect on the surrounding area, reduce poverty and backwash the economy, attract investment, and improve the country's income. In comparison, eliminates problems in the land border area, such as low indicators of development performance and regional isolation. This research was conducted in provinces with land border areas, namely West Kalimantan, East Kalimantan, North Kalimantan, East Nusa Tenggara, and Papua. Observations were made from 2015 – 2020 using secondary data sourced from the Central Bureau of Statistic. The research method used Principal Component Analysis to reduce thirteen to six variables of government programs supporting development performance in border areas. The reduced factors then used as variables in the Data Regression Panel to find out what programs affect on gross domestic product, poverty, and human development index in Indonesia's land border areas. The fifth variables are investment, health, agriculture, road infrastructure and markets and transportation. All variables have a significant effect on poverty and human development index, but not gross domestic product. This result shows a government economic strategy for developing sustainable land border areas.

Keywords: sustainability of land border area development, economic development performance, government strategy

JEL classification: O11

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1. INTRODUCTION

Most of the land border areas in Indonesia are disadvantaged areas with minimal social and economic facilities and infrastructure. As a result, in some areas, land border areas become untouched by development dynamics (Rahim et al., 2022). People in the region are generally poor and more oriented to neighbouring countries. On the other hand, neighbouring countries such as

Malaysia have built growth centres and border corridors through various economic and trade activities. Dover in the U.K. made a very rapid change in building its border area (Cassidy et al., 2018). Countries such as India and Bangladesh built their borders through culture (Shahriar et al., 2020). China and Europe are among the countries that carry out massive development in the border areas in both the education,

economic, political, and cultural sectors (Brunet, 2012),(Grant, 2020),(Ying, 1999)after which it started widening. This diminishing trend was due to a significant decline in income inequality among provinces in the coastal region. A further test indicates that an increase in per capita GDP in the southern coastal provinces is the main reason for declining regional inequality in China during the early reform period (1978-90. Such development has benefited the government and its people. Economic opportunities in some areas of Indonesia's land borders have opened up more with the enactment of several international treaties. The agreement includes international free trade, regional and bilateral economic cooperation, and sub-regional cooperation such as Indonesia Malaysia Singapore – Growth Triangle (IMS-GT) or ASEAN Free Trade Area (AFTA). This international collaboration is expected to benefit the development efforts of border areas.

The development of land border areas massively started from a new paradigm based on security to prosperity (Yandri et al., 2018). The development of this land border area is carried out in line with the paradigm change; in addition to improving productivity and stimulating connectivity, it is expected to reduce poverty (Priyarsono, 2017). This development certainly impacts the economic growth side of the land border area. The construction of infrastructure facilities is also increasingly rampant and rapid.

Intensive interaction, especially inland border areas, results in developing economic and people activities on the border. The government, as a regulator, began to publish various policies supporting the economic development of the border area. Starting from establishing a particular agency for border management, namely National Agency for Border Management (BNPP) through Presidential Regulation No. 12 of 2010, to policies in the form of integrated programs and activities between ministries and institutions. However, the problem of land border areas is certainly not resolved. There are still some economic problems that are still homework for the government, including:

a. Low Development Performance Indicators

There are four indicators of development performance, such as HDI (human development index), GDP (Gross Regional Domestic Product), Gini Index, and Poverty Level. The following figure describes the indicators of development performance in inland border areas compared to non-border areas in the same province. During 2015 – 2020 the HDI inland border areas increased by an average of 0.08%. When compared to non-border areas (0.16%) and Indonesia (0.14%), of course, it is still relatively low, considering the government has massively issued various policies to improve development in the border area (Figure 1).

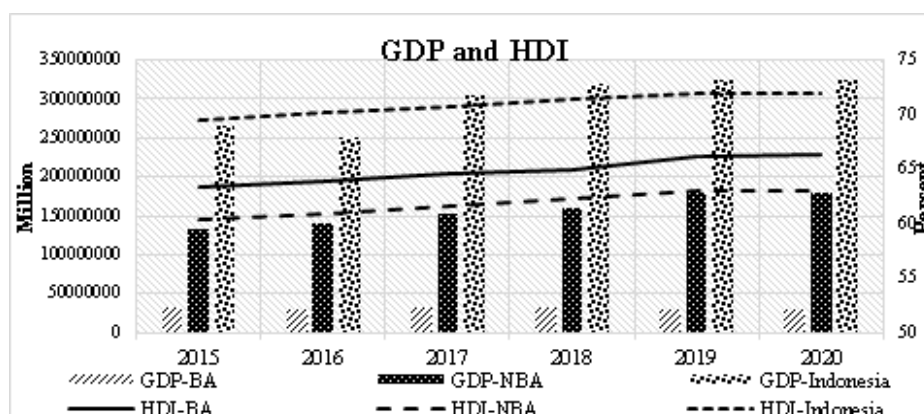


Figure 1 Comparison GDP and HDI Border Area (BA) and Non Border Area (NBA)

Source: BPS Indonesia, 2021

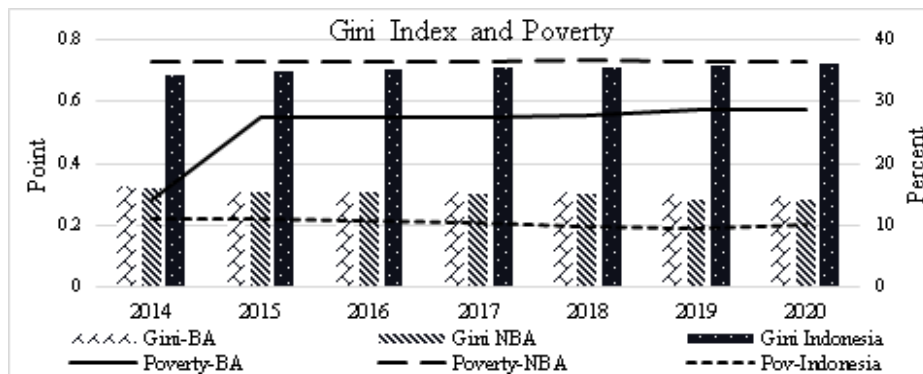


Figure 2 Comparison Between Gini Index and Poverty in Border Area (BA) and Non Border Area (NBA)

Source: BPS Indonesia, 2021

In line with the HDI, GDP in land border areas are also lower in value than in non-border areas and Indonesia. Figure 1 explains that the increase in GDP in inland border areas throughout 2015 - 2020 is quite good, which is 5.8% compared to non-border areas at 2.7% and Indonesia at 3.01%. Nevertheless, the increase is still far from the value side. Hopefully, in the future, there will be an acceleration of development in the border area that can increase GDP in the border area.

The level of income inequality in a region is seen from the value of the Gini index; the greater the value of the Gini index, the higher the inequality (Farris, 2010). Inequality of land border areas is relatively small compared to non-border areas and Indonesia. It is possible because the land border area is an area that is identical to rural and suburban areas, in contrast to non-border areas that are urban areas. The picture above explains that in 2015 - 2016 inequality in the region decreased by 2.9 %, but then tends to be stable. In contrast to non-border areas, inequality decreased

by about 3.2% during 2015-2020, while inequality decreased by 1.4% for Indonesia. (Figure 2).

When it comes to poverty, this problem is crucial because it has a vast impact, including unemployment, crime, and other social ills (Zia & Prasetyo, 2018) banking services availability, and the use of banking services. The data was time series from 2014-2016 and cross section from 33 provinces in Indonesia obtained from Bank Indonesia, Financial Service Authority, and Central Bureau Statistics. The results showed; (1. The poverty rate in the land border area is relatively high compared to non-border areas and Indonesia. During 2015 – 2020 poverty in land border areas ranged in 37% of the population. While non-border areas are at 27%, Indonesia is in the range of 10% - 12% (Figure 2).

Based on these four performance indicators, land border areas have a lower value than non-border areas, whereas border areas get special policies and programs compared to non-border areas. Some of the policies that the government has issued are:

Table 1 Policies in Border Area

No.	Policy / Program	Executor/ Maker
1	Law number 17/ 2007 on The National Long-Term Plan 2005-2025 (Setneg Pemerintah RI 2007)	Government of Indonesia
2	Presidential Regulation No. 31 of 2015 concerning the Spatial Plan for the State Border Area in Kalimantan (Setkab Pemerintah RI 2015)	Government of Indonesia
3	Presidential Regulation No. 32 of 2015 concerning Spatial Plan of State Border Areas in Papua (Setkab Pemerintah RI 2015)	Government of Indonesia
4	Presidential Regulation No. 179 of 2014 concerning Spatial Plan of State Border Area in NTT (Setkab Pemerintah RI 2014)	Government of Indonesia
5	Law number 43/ 2008 concerning The Territory of the State	Government of Indonesia
6	Grand Design of State And Border Boundary Management in 2020-2024 (BNPP 2020)	BNPP

Source : Rahim, 2021

- b. The geographical isolation of the development centre makes the utilization of natural resources potential not maximized, while local economic development is also limited to impact the small investment (Rahim & Adiatmojo, 2020). Figure 5 below explains the location of land border areas in Indonesia

Borders of Indonesia



Figure 3 Land Border Area of Indonesia

Source: Processed data, 2019

- c. Low investment, throughout 2015 - 2020, investment in non-border areas is much higher than in land border areas. As a note, investment is one of the critical variables in increasing GDP and the region's economy (De Mello, 1997), (Suparjito et al., 2020). However, in reality, investments in inland border areas are still lower than in non-

border areas. The following figure describes the comparison of investment in land border areas compared to non-border areas.

The three main problems above make the economic condition of most areas in the land border area still relatively lagging compared to development in other regions, and there is a gap in the development of border areas with neighbouring countries. This condition directly creates a backwash effect for the economy in the border area. Therefore, the question arises, what factors affect the

improvement of development indicator performance to build economic resilience in the land border area and anticipate interregional gaps, backwash effects, and other economic problems? How do these factors affect development in border control, and what strategies should be carried out by the government in developing border areas? In the end, the purpose of this research is provide an overview of what important factors that the government should develop so the border area become developed region.

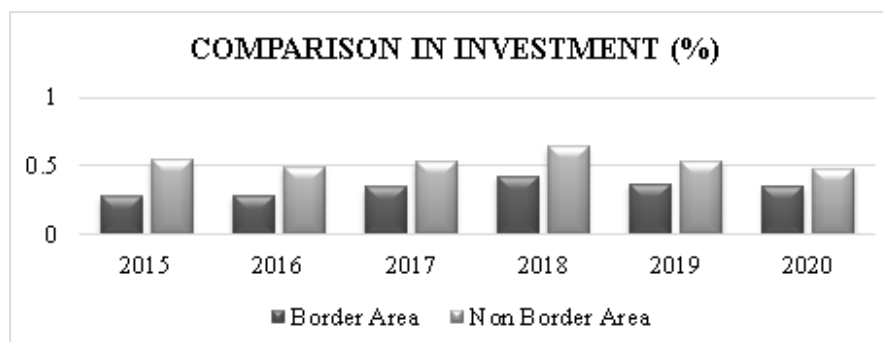


Figure 4 Comparison in investment between border area and non-border area

Source: BPS Indonesia, 2021

2. LITERATURE REVIEW

Along with developing knowledge, technology, and community needs, development planning undergoes a paradigm change. The latest paradigm of regional development planning explains that development activities should be aimed at and carried out by local communities to improve the community's welfare in a sustainable manner that requires adjustment to the capacity and environmental state of its natural resources (Vanthillo & Verhetsel, 2012). In comparison, the role of the government is increasingly shifting more as a development facilitator and public infrastructure provider (Luu et al., 2019), as well as designing policies and incentive structures toward improving the productivity of economic actors. Thus, the current and future development approach is a local community-based economy (Jesuit & Sych, 2012). The importance of reorientation of local community-based regional development is increasingly raised

due to the occurrence of government failure, which is often the impact is more severe than market failure (Dolfsma, 2011), which has often been used as a reason for public intervention by the government (Oakerson & Parks, 2011). According to the current development paradigm, the role of government needs to be increasingly limited to areas where other economic actors (private and community organizations) have no incentive to do so (Horner, 2019). The role of the government should be increasingly encouraged as an institution that facilitates communication and transfer of information and technology that bridges information between developed and relatively disadvantaged regions. The second is a domestic resource-based economy development approach. Reorientating the current development approach requires implementing a domestic resource-based regional development approach (Saleh et al., 2020). The domestic resources in question include resources in a broad sense, including physical-

natural resources, human resources, artificial resources, and social resources (Labra et al., 2016). Thus, a development planning approach is needed based on the potential of domestic nature, local human resources, and local development results so far, including the availability of existing domestic physical and social (institutional) infrastructure. This approach requires identifying the base sectors that will be the driving forces of regional economic activity.

Based on the thought, the phenomenon of borderless and border (reviewing the function of border areas) is inseparable. Both concepts have been implemented in European countries as part of the globalization effect that abolishes country borders in anticipation of more significant economic activity and benefits both bordering regions. This concept can also encourage prosperity that leads to prosperity in both border areas. It is also used by the Indonesian government and is known as the change of the paradigm of border area management that was initially inward-looking to outward-looking. In creating the growth of disadvantaged areas, the development of border areas becomes unnecessary. It is the main reason because it is increasingly clear the gap between the border area and neighbouring countries that, if it is not noticed, then leads to security and defence threats to the country, a backwash economy and economic inequality in the community. Therefore, Rahim explained (Rahim et al., 2021), that the function of the border area is:

1. As a barrier, the border area is a transparent barrier in terms of economic affairs, government administration, community and social psychology.
2. As a bridge, there is no denying that the social structure in both border areas is derived from the same culture. This similarity is expected to be a bridge for programs and capacity building in the region (Firmansyah & Oktavilia, 2015).
3. As a resource centre, it is proven that many border areas have a wealth of resources.
4. As a symbol of identity, the border area is the front page of a country and not a backyard.

The above functions provide consequences for managing border areas oriented to regional studies, spatial linkages, and program alignment.

3. RESEARCH METHOD

This research was conducted in five provinces in Indonesia, namely West Kalimantan, East Kalimantan, North Kalimantan, East Nusa Tenggara and Papua, from 2015-2020. These five provinces are land-border areas in Indonesia (Rahim et al., 2022). The data used is secondary data sourced from the Central Bureau of Statistics. The methods used are:

3.1 Principal Component Analysis (PCA)

PCA method is a linear combination of initial variables that geometrically, this combination forms a new coordinate system obtained from the initial system. In general, the PCA method aims to reduce large amounts of data and has a correlation between these many variables without losing the information contained in the original data (Jolliffe & Cadima, 2016). The basic concepts of PCA are as follows:

$$\begin{aligned} Y_1 &= a_{11}Z_1 + a_{12}Z_{12} + \dots + a_{p1}Z_p \\ Y_2 &= a_{21}Z_2 + a_{22}Z_{22} + \dots + a_{p2}Z_p \\ Y_3 &= a_{31}Z_3 + a_{32}Z_{32} + \dots + a_{p3}Z_p \\ Y_n &= a_{1n}Z_n + a_{2n}Z_2 + \dots + a_{pn}Z_n \end{aligned} \quad (1)$$

The steps in solving PCA are as follows:

1. If the units of the variable (X) used in constructing the main component are not the same, then the variable needs to be standardized first (Z score)
2. Then calculate the covariance matrix
3. Next, Calculate the Eigenvalue with the following equation

$$\text{Cov}(XY) = \frac{\sum xy}{n} - (\bar{x})(\bar{y}) \quad (2)$$

$$(A - \lambda I) = 0 \quad (3)$$

4. Then Calculate the Eigen factor with the following equation

$$[A - \lambda I] [A] = 0$$

5. Next, calculate the variance of the new variable i , which depends on the contribution of p_i , based on the eigenvalues

$$p_i = \frac{\lambda_i}{\sum_{i=1}^p \lambda_i} \times 100 \% \quad (4)$$

Based on the PCA result, the used variables and their operational variables are as follows:

Table 2 Variables and Operational Definitions

Variable	Unit	Operational Definitions
GDP	Rupiah/ Million	Gross Domestic Product
Poverty	Per cent	Rate of Poverty
HDI	Index	Human Development Index
Investment	Rupiah/ Million	The value of an investment in a border area
Market Infrastructure	Rupiah/ Million	Government funds for market development as economic support for the region
Health	Rupiah/ Million	Funds issued by the government for the health sector
Agriculture	Rupiah/ Million	Government-issued funds for agriculture to increase production
Road Construction	Rupiah/ Million	Government-issued funds for road areas for ease of mobility and marketing of production
Transportation	Rupiah/ Million	Government-issued funds for transportation

Source : Processed Data, 2021

3.2 Panel Data Regression Analysis

To know the effect of border area development policy on the development of border used. Panel data is a combination of data between time series data and cross-sections. In other words, panel data is cross-section data observed repeatedly on the same individual unit (object) at different times (Xu et al., 2007). In calculation,

the regression model panel can be used using several methods (Nuraini & Hariyani, 2019) as well as formulating a concept of quality economic growth by examining several social and economic indicators such as unemployment, income distribution across regions, income distribution among economic sectors, equity investment, and poverty. Using Klassen's typology analysis, it is found that most (19 regions, namely the Common Effect method (Pooled Least Square), Fixed Effect Model method, and Random Effect Model method (Zulfikar, 2018).

The used models are as follows:

1. Effect of development policies and programs on GDP

$$GDP_i = \beta_0 + \beta_1 Factor 1_i + \beta_2 Factor 2_i + \beta_3 Factor 3_i + \beta_4 Factor 4_i + \beta_5 Factor 5_i + \beta_6 Factor 6_i + \varepsilon_{it} \quad (5)$$

2. Effect of development policies and programs on GDP

$$LnPov_i = \beta_0 + \beta_1 Factor 1_i + \beta_2 Factor 2_i + \beta_3 Factor 3_i + \beta_4 Factor 4_i + \beta_5 Factor 5_i + \beta_6 Factor 6_i + \varepsilon_{it} \quad (6)$$

3. Effect of development policies and programs on GDP

$$LnHDI_i = \beta_0 + \beta_1 Factor 1_i + \beta_2 Factor 2_i + \beta_3 Factor 3_i + \beta_4 Factor 4_i + \beta_5 Factor 5_i + \beta_6 Factor 6_i + \varepsilon_{it} \quad (7)$$

Where :

B : constanta

GDP : Gross Domestic Product

Pov : Poverty

HDI : Human Development Index

Factor 1...6 : The formed factors from PCA (Principle Component Analysis)

ε : Error

t : year

4. RESULTS AND DISCUSSION

There is twenty-four district of the land border area in Indonesia, including areas scattered in East Kalimantan, West Kalimantan, North Kalimantan, East Nusa Tenggara, and Papua. Each border area certainly has different conditions regarding its development. It is evidenced by development data in the border area,

such as the condition of regional development, the condition of community poverty, the condition of inequality of opinion in each region, the state of human development that lives in the border area, as well as the economic condition of each border area.

4.1 Factors That Affect Improved Performance of Development Indicators in Land The government annually conducts real

There are thirteen factors in the form of programs, all conducted in the border area. The program aims to improve performance in border areas; the programs are an investment, market infrastructure, health, education, sanitation, housing, agriculture, fisheries, road construction, electricity, transportation, agricultural land area, and training programs (to reduce unemployment). In the thirteen programs based on PCA analysis, the influential factors formed six new

factors: investment, market infrastructure, health, agriculture, road construction, and transportation. The following results are from the PCA factors that affect the performance of development indicators in the border area.

Table 3 KMO and Bartlett's Test*

KMO and Bartlett's Test ^a		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.874
Approx. Chi-Square		681.641
Bartlett's Test of Sphericity	Df	28
	Sig.	0.000
a. Based on correlations		
b. $\alpha = 0.05$		

Source: Processed Data, 2021

KMO and Bartlett's Test numbers of 0.874 are greater than the α , and sig 0.00 sig is smaller than the α , indicating that the observed variables can be further processed in the next analysis.

Table 4 Component Transformation Matrix

No	Variables	Components Transformation Matrix					
		1	2	3	4	5	6
1	Investment (Factor 1)	.512	.478	.412	.403	.323	.271
2	Market Infrastructure (Factor 2)	-.343	.065	.282	.710	.282	.084
3	Health (Factor 3)	-.097	-.185	-.186	-.186	-.096	.955
4	Agriculture (Factor 4)	-.184	-.664	.612	.612	.024	-.012
6	Road Construction (Factor 5)	.363	-.452	-.529	-.529	.583	-.088
6	Transportation (Factor 6)	.229	.667	-.264	-.264	.207	-.019

a. Extraction Methode: Principal Component Analysis

b. $\alpha = 0.05$

Source: Processed Data, 2021

The component transformation matrix table above explains that the variables that become observations will go into the new factors that become formations. The determination of observation variables will go into factors where the resulting component transformation matrix value must be greater than α . The investment variable goes to factor 1, transportation variable to factor 2, agriculture to factor 3, market infrastructure variable to factor 4, road

construction variable to factor 5 and health variable to factor 6.

4.2 The Effect of Programs on the Development of Land Border Area

Data processing in this study using regression data panel with Fixed Effect method and Chow and Hausman test. In the six programs and policies undertaken by the government annually in the border area, investment plays a

vital role in regional development. It appears to positively influence GDP increase, poverty reduction, and HDI increase. Even has positive influence on GDP, the increase have not been able to reduce poverty. At the same time, the government's agricultural program has not been able to raise GDP. The quality of life is reflected through HDI and has not been able to reduce poverty. Massive road construction increases GDP, reduces GDP, and reduces poverty, but on the other hand, it has not been able to raise HDI. The backwash effect seen from the development

program of market infrastructure and transportation in the border area is also one of the programs rolled out by the government every year, but it appears that these two programs have not positive impacted increasing GDP, decreasing poverty or increasing HDI. The ease of interacting economically with neighbouring countries resulted in people preferring to conduct economic transactions in neighbouring countries rather than domestically. Table 5 below describes each variable's estimated results and standard errors.

Table 5 The effect of programs and policies on regional development performance

Variables	Coefficient		
	GDP	Poverty	HDI
C	130.000 (88.455)	29.5658 (3.4965)	66.5559 (1.2102)
INVESTMENT	0.6703 (0.066)**	-0.0005 (0.0014)***	0.00108 (0.0009)***
HEALTH	1.4112 (3.6222)	-0.00170 (0.00143)***	0.0035 (0.0049)***
AGRICULTURE	-34.521 (33.187)	0.00017 (0.0013)***	-0.0021 (0.0045)***
ROAD INFRASTRUCTURE	1.4954 (7.6213)	-0.00046 (0.00030)***	-0.0019 (0.0010)***
MARKET INFRASTRUCTURE	-22.7871 (40.593)	0.00092 (0.0016)***	-0.0074 (0.0055)***
TRANSPORTATION	-0.1138 (5.6445)	0.0011 (0.0022)***	0.00069 (0.0077)***

Standard error in parentheses: *p < 0.1, ** p < 0.05, ***p < 0.01

Source: Processed Data, 2021

4.3 Gross Domestic Product (GDP)

One of the economic indicators that can be used to classify the economic condition of a region is GDP. In Indonesia, GDP plays an essential role in encouraging the achievement of development targets that have been set. This role is in line with one of the functions of GDP as a tool to maintain stability and acceleration of economic performance. Therefore, government policies are always directed to achieve maximum

economic growth through several programs, including increasing investment, ensuring public health, improving agricultural programs, market availability and transportation guarantees.

Based on the figure below, the highest GDP conditions on average are in Papua. It happens because the accumulation of GDP in Papua has the mining sector that has a very high value. Mimika is the border area with the highest GDP of all border areas in Indonesia. Unfortunately,

although many border areas of Papua have a high GDP, it turns out that the bottom two of GDP are also in Papua. East Nusa Tenggara and Kalimantan Corridor indicate different economic conditions because it looks lower. Papua, East Nusa Tenggara and Kalimantan people's income structures come from the agricultural sector, but the above results show that the agricultural sector does not affect increasing GDP. Only the investment sector has a positive influence on

GDP. Health as a part of HDI does not positively influence GDP. Transportation, road and market infrastructure that aims to increase people's incomes are also not able to affect GDP. The figure below proves that West Kalimantan, East Kalimantan, North Kalimantan and East Nusa Tenggara's GDP is low. This condition is undoubtedly concerning, considering the government has passed various laws to advance the border area.

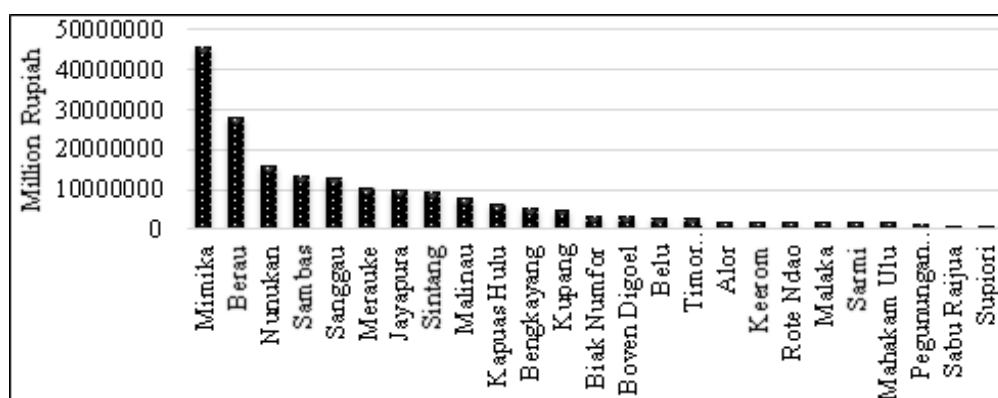


Figure 5 Gross Domestic Product in Border Area

Source: BPS Indonesia, 2021

4.4 Income Inequality And Poverty Level

Income inequality can be described through the Gini index chart. The concept of the Gini index means that the aggregate numerical measure of income inequality is 0 (meaning perfect equality) to 1 (meaning perfect inequality). It is described through a graphic called the Lorenz Curve (Fellman, 2012). The figure below is a Gini index graph that illustrates the inequality conditions of each land border area in Indonesia from all corridors. The value of Indonesia's border area Gini index ranges from 0.2 points to 0.45 points. West Kalimantan, East Kalimantan and North Kalimantan have a lower inequality condition than the inequalities in Papua and East Nusa Tenggara. The lowest Gini index in all border areas in Indonesia is in Sintang of West Kalimantan, with a Gini ratio in 2018. Then if further reviewed other areas on the border in the Kalimantan rank at the top with low gini ratio categories such as Sambas (West Kalimantan) , Nunukan (East Kalimantan) , Malinau (East Kalimantan) ,

Bengkayang (West Kalimantan), and Berau (East Kalimantan).

Based on the picture above, Papua and East Nusa Tenggara, the Gini ratio condition is higher than all of Kalimantan, although the distance or range is not too far. It shows that the inequality of border areas in the Papua and East Nusa Tenggara is still high compared to other border areas. In 2018 in East Nusa Tenggara, the lowest Gini ratio was Malaka, and this district is also the third lowest Gini ratio in Indonesia's border area. Then followed by Timor Tengah Utara, with gini ratio 0.321. Furthermore, the lowest Gini ratio in Papua is Mimika, with a Gini ratio of 0.263 point. This district is the second area with the lowest Gini ratio of Indonesia's border areas. Unfortunately, most areas in Papua have a high Gini ratio value. It is shown by the Gini ratio of Sarmi, Boven Digoel, and Biak Numfor. More intensive efforts from related governments, especially the East Nusa Tenggara and Papua governments, to address inequality issues in the two provinces.

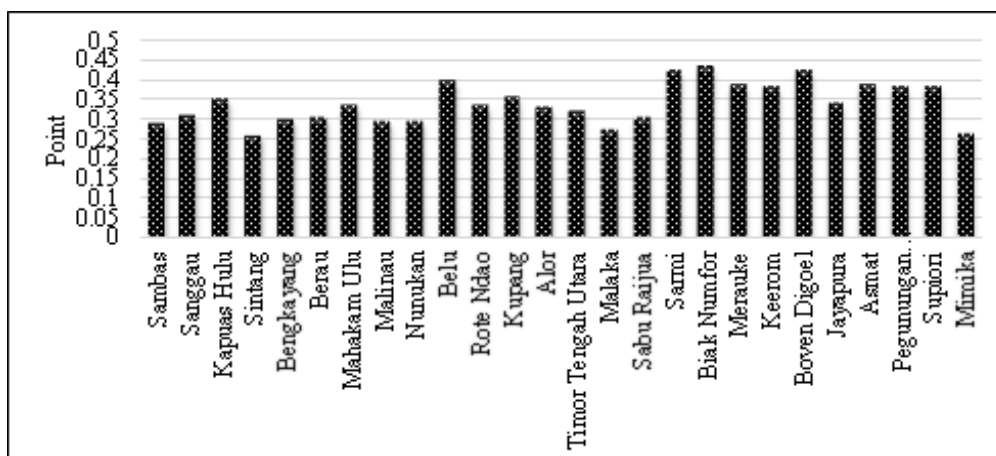


Figure 6 Gini Index in Border Area

Source: BPS Indonesia, 2021

The relationship between inequality and poverty is very close. Inequality can lead to poverty. It occurs because of the inability to meet the necessities of life. Poverty is characterized by low levels of education, work productivity, income, health and nutrition and well-being, which indicates a circle of helplessness (Ahluwalia, 1976). Limited human resources can cause it through formal and non-formal education pathways, which ultimately have consequences for low informal education. The results of this study prove that investment, health and road infrastructure have not been able to have a significant favourable influence on poverty reduction. Nevertheless, the agricultural sector, market infrastructure and transportation have positively influenced poverty reduction.

4.5 Human Development Index (HDI)

This research shows that investment, health, and transportation positively and significantly influence the increase of HDI in the border region. In contrast to programs related to agriculture, improved road infrastructure and markets provide significant influence. Many factors that make a government program can have a positive or negative influence, including the value of activities that are too small or less sustainable.

According to the BPS Statistical Reference Information System (Sirusa), the HDI achievement of a region can be classified into four categories, as stated in the following table:

Table 6 Classified HDI

HDI Category	Value
Low	HDI < 60
Middle	$60 \leq \text{HDI} < 70$
High	$70 \leq \text{HDI} < 80$
Very High	$\text{HDI} \geq 80$

Source: BPS Indonesia, 2021

Referring to the category of HDI achievements that have been set, it turns out that most border areas in Indonesia still occupy the moderate category. Even though two border areas were in the low HDI category in 2019, they can be repaired next year. Then if reviewed by province, the HDI border area shows various numbers. All districts in West Kalimantan until 2019 are in the category of moderate HDI. East and North Kalimantan have two border districts in the medium and high categories. Furthermore, the border area in East Nusa Tenggara is almost entirely in the moderate category. However, one area has low HDI, namely Sabu Raijua. The last border area in Papua has a diverse HDI number; three areas fall into the high category, one area has a low category, and the rest belongs to the moderate category. In general, it is concluded that human development conditions in the border area still require more attention from the Government of Indonesia.

Table 7 Human Development Index Border Area

Province	Border Area	2015	2016	2017	2018	2019
West Kalimantan	Bengkayang	64.65	65.45	65.99	66.85	67.57
	Sambas	64.14	64.94	65.92	66.61	67.02
	Sintang	64.18	64.78	65.16	66.07	66.7
	Kapuas Hulu	63.73	63.83	64.18	65.03	65.65
	Sanggau	63.05	63.9	64.61	65.15	65.67
East Kalimantan	Berau	72.72	73.05	73.56	74.01	74.88
	Mahakam Ulu	64.89	65.51	66.09	66.67	67.58
North Kalimantan	Malinau	70.15	70.71	71.23	71.74	72.06
	Nunukan	63.35	64.35	65.1	65.67	66.32
	Kupang	62.04	62.39	62.79	63.55	64.43
East Nusa Tenggara	Timor Tengah Utara	60.96	61.54	62.03	62.65	63.34
	Belu	60.54	61.04	61.44	61.86	62.54
	Rote Ndao	58.32	59.28	60.51	61.51	62.22
	Alor	58.5	58.99	59.61	60.14	61.03
	Malaka	57.51	58.29	58.9	59.66	60.34
	Sabu Raijua	53.28	54.16	55.22	55.79	56.66
	Mimika	70.89	71.64	72.42	73.15	74.13
	Biak Numfor	70.85	71.13	71.56	71.96	72.57
	Jayapura	70.04	70.5	70.97	71.25	71.84
	Merauke	67.75	68.09	68.64	69.38	69.98
Papua	Keerom	63.43	64.1	64.99	65.75	66.59
	Sarmi	60.99	61.27	62.31	63	63.45
	Supiori	60.09	60.59	61.23	61.84	62.3
	Boven Digoel	59.02	59.35	60.14	60.83	61.51
	Asmat	46.62	47.31	48.49	49.37	50.37
	Pegunungan Bintang	40.91	41.9	43.24	44.22	45.21

Source: BPS Indonesia, 2021

4.6 Government Strategy in the Development of Land Border Areas

4.6.1 Investment to support development performance

Domar explained that investment /saving and capital productivity are essential factors in increasing the economic growth of a region (Lantz & Sahut, 2005). The close relationship is described in Figure 7.

The above estimation also proves that investment positively and significantly affects GDP

and HDI and can reduce poverty. For attention based on data from the Central Bureau of Statistics in 2015 - 2020, it appears that investment, although small, can increase GDP. This result aligns with Domar's theory that investment can raise DGP. So if we want to increase GDP in the land border area, there must be an increase in investment. Significant investments are also able to avoid backwashing the economy to neighbouring countries. The image below explains the relationship between GDP and investment in land border areas.

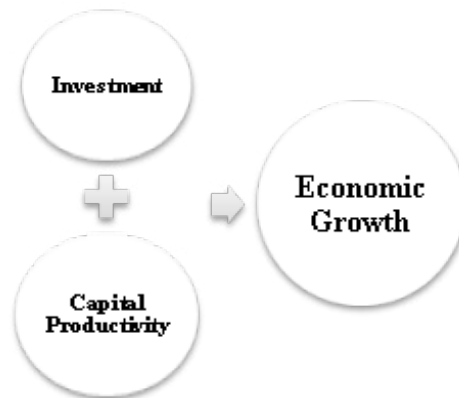


Figure 7 Relationship between investment and economic growth

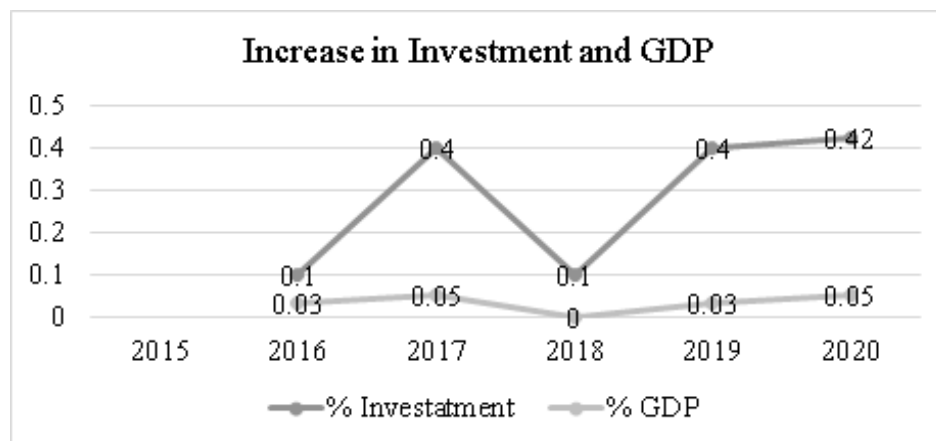


Figure 8 Increase in Investment and GDP

Source: BPS Indonesia, 2021

4.6.2 Reducing poverty in land border areas

Poverty is a topic that is never obsolete to discuss, especially in the border area. The high poverty alleviation program is a continuous effort carried out by the government every year. The condition of the border area that is difficult to reach, limited resources and budget constraints make the problem of poverty challenging to solve. Massive development has proven to reduce poverty. China proves this by building its borders through an economic approach (Wu, 2001),

and Bangladesh through a cultural approach (Banerjee & Chen, 2013). The land borders in Indonesia can also follow the two countries utilizing their economic development. Economic development is expected to be able to increase GDP and reduce poverty. Based on 2015 -2020, the average increase in GDP by 0.44 per cent was quite good and managed to reduce the amount of poverty by 3.5 per cent. The picture below explains the link of the increase in GDP to the amount of poverty in the border areas.

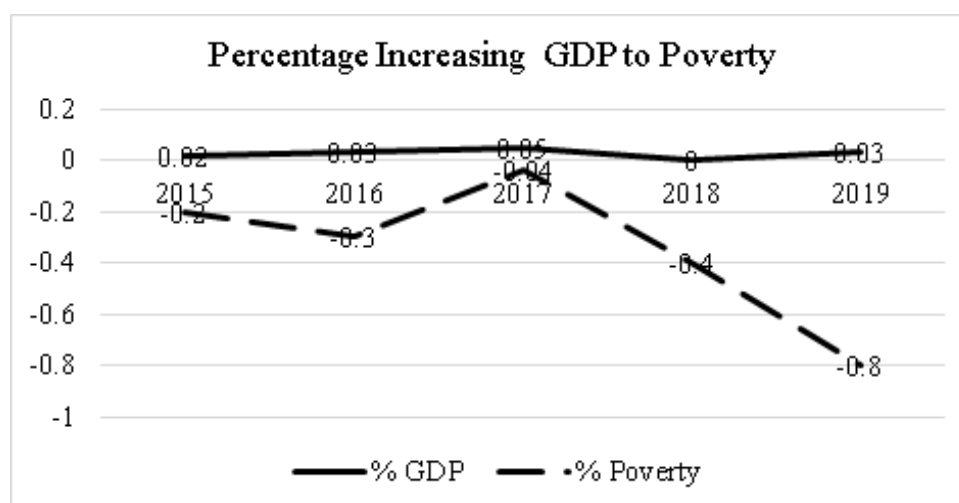


Figure 9 Increasing GDP to poverty

Source: BPS Indonesia, 2021

Indonesia's experience in reducing poverty in the land border area, starting from building food security (P.P. no. 84/ 2019), is the next stage of the plan to export food to neighbouring countries. One of the programs is to build food barn infrastructure facilities in the border area. Hopefully, the cross-border post can be an export gateway. However, until now, the expected export has not met expectations because trade between regions in the land border area is still personal. If similar programs are carried out every year, it is expected to reduce poverty in the border area.

4.6.3 Border area as a centre of sustainable growth

The border area as the centre of growth has two critical dimensions: functionally and geographically. Functionally, the area that becomes the centre of growth will be the location or concentration centre for business groups that are dynamically interconnected and become stimulants for other regions. Geographically, the growth centre should be the centre of attraction for other regions around it and have facilities for the development of its territory economically (Niebuhr & Stiller, 2004). The border area is expected to be a growth centre for the development of the surrounding area, both functionally and geographically. Jesuit explained that there are

several characteristics of growth centres aimed at border areas (Jesuit & Sych, 2012):

- Have close relationships with various economic activities; a border region's economic dynamics depend heavily on the region's economic activity. The growth of an economic sector by itself will encourage the growth of other sectors of the economy
- There is a multiplier effect; interconnected and supportive sectors are expected to create a multiplier effect
- Encourage the growth of the surrounding area; border areas that are used as growth pole areas are expected to encourage growth for the surrounding areas through the multiplier effect.

If referring to the Jesuit thought, it appears that the importance of economic development in a border area is a must because the development is not only oriented to the land border area but also able to create strong economic resilience for the region and the surrounding area.

Related to the effort to make the border area a centre of growth (Wu, 2001), one of his studies outlined five main elements that must be done, namely:

- Economic Complementary is the development of a border area that complements each other

- (between bordering regions) in the factors of production and can increase profits for both parties
- b. Private Sector Interest is the development of a region that relies on good location factors for the private sector to invest. The depiction of this condition is an industrial area of Shenzhen that can attract the private sector to invest due to location factors (Von Thunen's Location Theory)
 - c. Government Intervention is the development of border areas through broad government policy interventions and does not rely solely on the private sector, especially on infrastructure, labour providers and economic growth. In line with Bellinger's explanation, the government must provide subsidies, incentives or other assistance for the economy to develop
 - d. The institutional framework becomes very important that when development occurs, this institution helps promote and collaborate development between institutions, evaluating development and paying attention to socio-cultural and environmental sustainability factors
 - e. Cultural/Culture proves that psychic and cognitive distances can be minimized. Policies that assume that the development of border areas will be faster if focused on the economy are not very appropriate, but culture is also a catalyst for development.

4.6.4 Development of land border area as a priority area

Based on Law No. 26 of 2007 on Spatial Arrangement, strategic areas are areas in which activities take place that significantly influence spatial planning in the surrounding area, other activities in similar fields and activities in other fields, and improving the welfare of the community. Support for logistics systems, infrastructure, policies, regulations, space and regional management, and national transportation systems need to be considered comprehensively, including improving a strategic region's competitiveness. The policies of the central and local governments also need to be

synchronized so as not to inhibit each other or overlap. The availability of infrastructure and connectivity in transportation and logistics systems is one of the prominent supporters in improving the competitiveness of economic activities in the border area. Two central policies have become the government's priority in the development of border areas:

- a. Building a growth corridor that prioritizes the development of growth centres in land border areas with a regional advantage base that can encourage increased investment, poverty reduction, added value, increased foreign exchange receipts or foreign exchange savings, expansion of employment opportunities, and regional growth. The strategy is to increase the competitive advantage of the centre of regional growth by optimising priority strategic area development as regional growth centres (Kumari & Devadas, 2017).
- b. Building an equalization corridor that prioritizes the development of a buffer area (hinterland) located around the growth centre in the border area, as well as areas and disadvantaged areas to ensure equality and justice in the fulfilment of fundamental rights of the people following the rules of sustainable development goals.

5. CONCLUSION

The development of inland border areas is an inevitability. The influence of development in this region has a broad impact on the border area and neighbouring countries. Nevertheless, what should be anticipated is that development in the border area should benefit the area and not the backwash economy, benefiting neighbouring countries. The development of border areas should be able to increase people's income, regional income, and long-term prosperity for the area. At this stage, government policy and impartiality are critical. The alignment is in addition to policies, development programs, financing activities, and policy synchronization between central and local governments.

Development strategy in the border area is specifically on 2 things; firstly, make the land

border area a centre of sustainable growth, where the area has linkage and can be a driver for the surrounding area's growth. Second, making the development of border areas a priority through developing growth poles and buffer areas. In the future, the development of border areas is expected to increase people's income, reduce poverty, and improve people's welfare through increasing economic activities.

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