

# Analysis of the Effect of Poverty Levels, APBD Allocation for Health, and Per Capita GRDP on the Human Development Index in West Nusa Tenggara Province from 2014 to 2023

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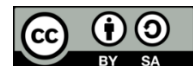
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## ABSTRACT

This study aims to analyze the influence of poverty levels, allocation of the Regional Revenue and Expenditure Budget (APBD) for the health sector, and Gross Regional Domestic Product (GRDP) per capita on the Human Development Index (HDI) in West Nusa Tenggara Province (NTB) during the period 2014 to 2023. The research approach uses a quantitative method with multiple linear regression analysis based on panel data. The results show that partially the variables of poverty levels and GRDP per capita do not significantly influence the HDI. However, the allocation of the APBD for health has a positive and significant influence on the increase in the HDI in NTB, which indicates that the increase in the budget in the health sector contributes significantly to improving the quality of life of the community. Simultaneously, these three variables contribute to changes in the HDI, although the influence is not significant overall. This study recommends strengthening more integrated human development policies, particularly in the allocation of the health budget which has a direct impact on increasing life expectancy and the quality of human resources.

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## 1. INTRODUCTION

Economic development is a series of activities carried out consciously and continuously to achieve a better condition collectively and sustainably. According to Todaro and Smith in the journal Meylina Astri, Sri Indah, and Harya Kuncara, economic growth is the process of increasing national income over time and is one indicator for calculating economic development [1]. However, several countries have shown that the economic growth that occurs is not

accompanied by improvements in the quality of life of the community. Economic development is not only measured by the increase in production of goods and services that occurs from year to year, but also needs to be measured by other changes that occur in various aspects of economic activity such as educational development, technological development, improvements in the health sector, improvements in available infrastructure, and increases in income and community prosperity.

[2] also argue that in the second generation, development theory emphasized the accumulation of human capital by creating more productive development agents through knowledge, better health, and increased skills [3].

The quality of human development is crucial to national policy strategies for economic development. Development is a process that improves the quality of life and human capabilities by raising standards of living, self-esteem, and individual freedom [4]. This process of change must be sustainable, encompassing all aspects of community life, including economic, social,

and cultural aspects, making development an absolute prerequisite for national survival.

Human development is defined as the process of acquiring and increasing the number of people with the skills, education, and experience that determine a country's economic and political development. The quality of human development can be measured using the Human Development Index (HDI). Since 1990, the United Nations Development Program (UNDP) has developed a development performance index now known as the Human Development Index (HDI) [5].

Table 1. Data on Human Development Index (HDI), Poverty Rate, Health APBD Allocation, and GRDP in NTB 2014-2023

Year	HDI	Poverty (of the Soul)	Health APBD Allocation (%)	GRDP (%)
2014	64.31	816,621	70	5.17
2015	65.19	802.29	76.5	21.76
2016	65.81	786.58	81	5.81
2017	66.58	793,780	85.21	0.12
2018	67.30	735.62	90.2	-4.56
2019	68.14	705.68	93	3.9
2020	68.25	746.04	100	-0.62
2021	68.65	735.30	97.56	2.3
2022	69.46	744.69	100	6.95
2023	72.37	658.60	99.27	5.71

The Human Development Index (HDI) specifically measures human development achievements through basic components of quality of life. According to UNDP, the current HDI calculation uses a new method since 2010. The benchmarks used to determine human quality of life consist of three main components, namely: (1) life expectancy (AHH) at birth as a health indicator, (2) expected years of schooling (HLS) and average years of schooling (RLS) as education indicators, and (3) purchasing power as measured by per capita income [6]. Based on data from the Central Statistics Agency of West Nusa Tenggara Province (2024), the HDI value of NTB Province during the 2014–2023 period showed a consistent increasing trend.

In 2014, NTB's Human Development Index (HDI) was recorded at 64.31, and it has continued to increase annually, reaching 72.37

in 2023. This increase reflects ongoing improvements in the education, health, and economic sectors. Overall, NTB's HDI has increased by 8.06 points over nine years, with the highest spike occurring in the 2022–2023 period, where the HDI increased significantly as the post-pandemic economic conditions improved.

Meanwhile, poverty remains a major challenge to human development in West Nusa Tenggara Province. According to Statistics Indonesia (BPS), the number of poor people in 2014 reached 816,621, fluctuating over the past decade. This number has gradually declined to 658,600 in 2023, reflecting improvements in public welfare, although not always linearly. This decline in poverty also demonstrates the effectiveness of some social and economic development programs implemented by the local government. However, poverty still has the

potential to hinder improvements in the Human Development Index (HDI), particularly as low purchasing power often limits access to education and healthcare. Consequently, human development disparities persist in several regions of West Nusa Tenggara, necessitating continued strengthening and synergy of poverty alleviation efforts with policies to improve the quality of human resources (Central Statistics Agency, 2023).

The number of poor people in West Nusa Tenggara (NTB) during the 2014–2023 period showed a fluctuating pattern, although generally tending to decline. In 2014, the number of poor people was recorded at 816,621, then gradually decreased to 786,580 in 2016. However, in 2017 there was a rise to 793,780, indicating economic pressure on vulnerable communities. The downward trend continued in 2018 and 2019, with the poverty rate dropping to 735,620 and 705,680, respectively. Unfortunately, the COVID-19 pandemic in 2020 caused the poverty rate to rise again to 746,040, due to disrupted economic activity, job losses, and declining incomes. Nevertheless, the local government was able to gradually reduce this figure until finally in 2023 the number of poor people decreased significantly to 658,600, which was the lowest achievement in the last ten years.

Anand and Ravallion state that one way to improve human development is through the government's role in allocating the budget by optimizing the realization of government spending on public services and allocating the budget to priority sectors that have a significant impact on improving human development [7].

Government spending on the health sector, according to Indonesian law, requires the central government to allocate a minimum of 5% of the national budget (APBN) excluding salaries, while the provincial and district/city government health budgets are allocated a minimum of 10% of the national budget (APBN) excluding salaries. The magnitude of government spending on the health sub-sector indicates the priority of government funding allocation for this sector. The health budget in West Nusa Tenggara

province increased from 47.624 billion in 2014 to 762.80 billion in 2023 (Source: DJPK (Directorate General of Fiscal Balance)).

The welfare indicator of a region's population can be seen from the Gross Regional Domestic Product (GRDP) per capita. According to Norton, if GRDP per capita growth is high, it will provide more decent jobs and increase the community's income level. Macroeconomically, GRDP per capita influences the Human Development Index (HDI). An increase in GRDP per capita will encourage a decent standard of living for the community, which in turn increases purchasing power. This increase in purchasing power has positive implications for increasing the HDI. NTB's GRDP growth throughout 2014–2023 showed highly fluctuating dynamics, even tending to be extreme. In 2014, economic growth was recorded at 5.17 percent, then jumped drastically in 2015 to reach 21.76 percent. This surge was influenced by increased economic activity, particularly in the mining and processing industry sectors. However, this growth was short-lived. In 2017, growth only reached 0.12 percent and even contracted to -4.56 percent in 2018 due to the major earthquake that hit NTB, which caused economic activity to stop and infrastructure to suffer severe damage.

After experiencing contraction, the economy returned to positive growth of 3.9 percent in 2019. However, in 2020, the COVID-19 pandemic again depressed the economy to minus 0.62 percent, in line with the national economic contraction. Nevertheless, in 2021 and 2022, NTB's economy recovered, with growth of 2.3 percent and 6.95 percent, respectively. The strong growth in 2022 reflected the recovery in the tourism and trade sectors, as well as increased consumer activity. In 2023, economic growth slowed slightly to 5.17 percent, but this figure still demonstrated the stability and sustainability of the recovery.

Although the Human Development Index (HDI) has shown a positive trend, its growth is not always consistent and is still relatively low compared to other provinces in Indonesia. Furthermore, socio-economic

dynamics in NTB show fluctuations in the number of poor people and variations in local government budget allocations for the health sector, which is a determining factor in human development. On the other hand, Gross Regional Domestic Product (GRDP) per capita as an indicator of purchasing power and economic welfare also influences the quality of life of the community. Therefore, based on the above background, the researcher is interested in conducting a study entitled "Analysis of the Influence of Poverty Levels, Regional Budget Allocations for Health, and GRDP per Capita on the Human Development Index in West Nusa Tenggara Province 2014-2023".

## 2. LITERATURE REVIEW

### 2.1 *Human Development Index*

The Human Development Index (HDI) is an index of basic human development capabilities, built through a three-dimensional approach: a long and healthy life, knowledge, and a decent standard of living [8]. The HDI was formulated in 1990 by the United Nations Development Programme (UNDP). According to the UNDP, human development is the expansion of people's choices (enlarging the choices of people), which can be seen as both a process of efforts towards expanding choices and at the same time as the level achieved from those efforts [9].

### 2.2 *Hypothesis Formulation and Conceptual Framework*

Based on the problems above, the hypothesis used in this study is as follows:

1. **The influence of poverty levels on the human development index in West Nusa Tenggara Province 2014-2023**

Research conducted by [10] shows that poverty significantly influences the Human Development Index (HDI). These results are supported by research by [11], which shows that poverty has a negative and significant effect on the HDI. [12] also showed that poverty significantly influences the HDI. However, research conducted by [13] shows that poverty has no effect on the HDI. Based on this, the following hypothesis is formulated:

H1: The poverty rate has an impact on the human development index in West Nusa Tenggara Province in 2014-2023.

### 2. **The Influence of Health APBD Allocation on the Human Development Index in West Nusa Tenggara Province 2014-2023**

Research conducted by [14] shows that the Regional Budget for Health (APBD) has a significant impact on the Human Development Index (HDI). These results align with research conducted by [11], which states that the Health Budget variable has a positive and significant influence on the HDI. Research by [12] shows that government spending in the health sector has a positive and significant influence on the Human Development Index. Research conducted by [15] states that the Health Sector Budget has a negative effect on the HDI. Based on this, the following hypothesis is formulated:

H2: The allocation of the Regional Budget for Health has an impact on the human development index in West

Nusa Tenggara Province in 2014-2023.

### **3. The Influence of Per Capita GRDP on the Human Development Index in West Nusa Tenggara Province 2014-2023**

Research conducted by [16] found that GRDP per capita has a positive effect on the Human Development Index (HDI). These results align with research conducted by Suhendi and Astuti (2023), which found that GRDP has a positive and significant effect on the HDI. However, research conducted by [13] found that GRDP has no effect on the HDI. Based on this, the following hypothesis is formulated:

H3: Per capita GRDP has an effect on the human development index in West Nusa Tenggara Province in 2014-2023

### **4. The influence of poverty levels, APBD Health Allocation and GRDP per capita on the human development index in West Nusa Tenggara Province 2014-2023**

Several studies support this relationship. Rahman and

Lestari (2022), in their study at the provincial level in Indonesia, stated that GRDP per capita has a positive and significant influence on the HDI. This indicates that regional economic growth contributes to improving the quality of human development. Similarly, Yuliani and Prasetyo (2021) also found that regions with high GRDP per capita tend to have a higher HDI, particularly in the health and education dimensions. However, not all research results show a significant influence. Siregar and Kurniawan (2023), in their study in eastern Indonesia, found that GRDP per capita had no significant effect on the HDI, because Increased income is not accompanied by equitable distribution of welfare and improvements in public services. Based on this, the following hypothesis is formulated:

H4: Poverty level, Health APBD Allocation and GRDP per capita have an effect on the human development index in West Nusa Tenggara Province in 2014-2023.

Based on the description above, the researcher can describe the relationship between variables as follows:

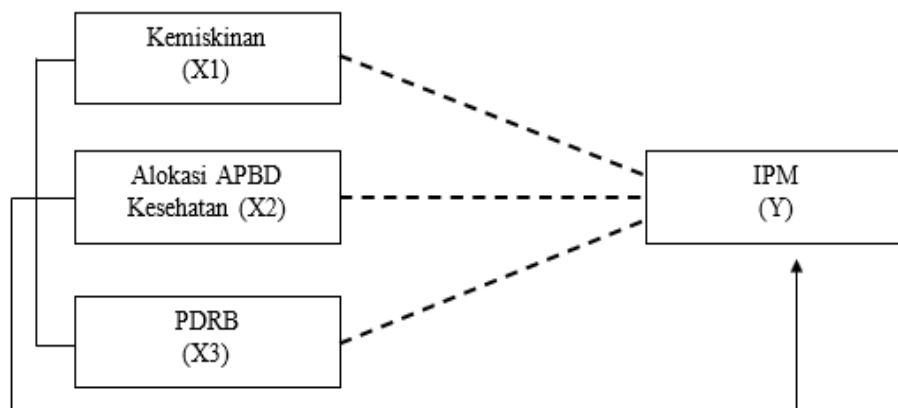


Figure 1. Conceptual framework model of analysis of the influence of poverty levels, APBD allocation for health, and GRDP per capita on the human development index in West Nusa Tenggara province in 2014-2023

Information:

- a. Partially :-----  
 b. Simultaneously :---

In Figure 1, this study will examine the influence of the variables of poverty level, APBD allocation for health, and GRDP per capita on the Human Development Index (HDI). This conceptual framework aims to facilitate understanding the relationship between poverty level, APBD allocation for health, and GRDP per capita on the Human Development Index in West Nusa Tenggara (NTB) Province in 2014–2023. This study will explain the relationship between poverty level and HDI, APBD allocation for health with HDI, and GRDP per capita with HDI, both partially and simultaneously.

### 3. METHODS

#### 3.1 Types of research

This study employed an associative quantitative approach. According to Samosir and Hatane (2017), quantitative research focuses on historical data, incorporating nominal measurements and analytical approaches. This type of research aims to analyze the impact of poverty, economic growth, and the human development index. This study examines the relationship between independent variables and dependent variables.

#### 3.2 Location and Time of Research

This research was conducted in West Nusa Tenggara, the research period will be carried out from August 2025.

#### 3.3 Method of collecting data

The data collection method used in this research is a case study, therefore, secondary data sources can be used. Secondary data sources are those that do not directly provide data to the data collector, for example through other people or documents. The data collection techniques used in this study were documentation and literature review. All variable data were obtained from the Central Statistics Agency of West Nusa Tenggara Province, the Directorate General of Fiscal Balance (DJPK), and related literature sources.

#### 3.4 Data collection technique

The data collection technique used in this research is by:

1. Documentation, namely by recording or collecting records that become research material. All variable data was obtained from the Central Statistics Agency of West Nusa Tenggara Province, the Directorate General of Fiscal Balance (DJPK), and other sources.
2. Literature study is a method of obtaining data by reading

literature from reading books, scientific articles and other reading sources.

### 3.5 Identification and Classification of Variables

#### 1. Variable Identification

The variables in this study consist of:

- a. Human Development Index (Y)
- b. Poverty Level (X1)
- c. Health APBD Allocation (X2)
- d. GRDP Per Capita (X3)

#### 2. Classification of Research Variables

The dependent variable in this study is the Human Development Index (Y). The independent variables consist of the poverty rate (X1), the allocation of the regional budget for health (X2), and GRDP per capita (X3).

#### 3. Operational Definition of Variables

An operational definition is the definition of a variable/construct by providing meaning, specifying clarity, or providing the necessary operationalization to measure the variable. The variables in this study include:

- a. Human Development Index (Y)

The Human Development Index (HDI) specifically measures human development achievements using basic components of quality of life, used to measure quality, well-being, and intellectual well-being. The HDI data used in this study are the HDI of 10 districts/cities in West Nusa Tenggara Province from 2014 to 2023, expressed in units.

- b. Poverty Level (X1)

Poverty is a condition where an individual or household is unable to meet basic needs, both food and non-food. In this study, the data used is the poverty rate, which is the percentage of the population whose income is below the poverty line, which is the minimum expenditure required to meet basic food and non-food needs in 10 districts/cities in West Nusa Tenggara (NTB) Province

during the period 2014 to 2023, expressed as a percentage.

- c. Health APBD Allocation (X2)

The Regional Budget (APBD) for Health is the amount of regional government spending allocated to the health sector. This study uses data from 10 districts/cities in West Nusa Tenggara (NTB) Province for the period 2014 to 2023. The budget is expressed in rupiah per year.

- d. GDP Per Capita (X3)

GRDP per capita is the average size of the population in a region divided by the total population. The data used in this study is the Gross Regional Domestic Product (GRDP) per capita data at constant prices in 10 districts/cities in West Nusa Tenggara Province during the period 2014 to 2023. The data is then added and averaged to obtain an estimate of GRDP per capita at the provincial level, the results of which are then rounded to the nearest unit to facilitate interpretation and analysis.

### 3.6 Data Analysis Procedure

The data analysis used in this study was panel data analysis. The data processing technique used EViews 7.0. The analysis model used was multiple linear regression with the following equation:

$$Y_i = a + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e_i$$

To estimate panel data regression models, the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM) approaches were used. The best model was selected using the Chow test, the Hausman test, and the Lagrange Multiplier test.

## 4. RESULTS AND DISCUSSION

### 4.1 Research result

#### 4.1.1 Overview of the Research Area

Astronomically, West Nusa Tenggara is located between 8°10'–9°05' South Latitude and between 115°46'–119°05' East Longitude.

Based on its geographical position, West Nusa Tenggara Province has territorial boundaries namely to the north of the Java Sea and the Flores Sea, to the south of the Indian Ocean, to the west of the Lombok Strait and Bali Province, and to the east of the Sape Strait and East Nusa Tenggara Province. West Nusa Tenggara Province consists of 10 districts/cities located on two large islands, namely Lombok Island and Sumbawa Island, each of which has different social and economic characteristics.

Lombok Island comprises the regencies of West Lombok, Central Lombok, East Lombok, North Lombok, and Mataram City. Meanwhile, Sumbawa Island comprises West Sumbawa Regency, Sumbawa Regency, Dompu Regency, Bima Regency, and Bima City. The geographic and administrative conditions of these regions form the basis for analyzing human development in West Nusa Tenggara Province.

#### **4.1.2 Development of the Human Development Index**

Based on data from the Central Statistics Agency of West Nusa Tenggara Province, the Human Development Index (HDI) of West Nusa Tenggara Province shows a consistent upward trend during the 2014–2023 period. In 2014, the HDI was recorded at 64.31 and continues to increase annually, reaching 72.37 in 2023. This increase in the HDI reflects ongoing improvements in the education, health, and economic sectors of the community.

Overall, the West Nusa Tenggara Province Human Development Index (HDI) increased by 8.06 points over nine years. The highest HDI increase occurred in 2022–2023, reflecting the improving economic conditions following the COVID-19 pandemic and increased public access to education and healthcare services.

#### **4.1.3 Poverty Level**

The poverty rate in West Nusa Tenggara Province during the 2014–2023 period exhibited a fluctuating pattern, although it generally tended to decline. In 2014, the number of poor people was recorded

at 816,621, and this has gradually decreased to 658,600 in 2023. This decline reflects improvements in community welfare, although not always linearly.

In 2020, the number of poor people increased again to 746,040 due to the COVID-19 pandemic, which disrupted economic activity, reduced incomes, and increased social vulnerability. However, in subsequent years, local governments were able to reduce poverty rates, reaching their lowest level in a decade in 2023.

#### **4.1.4 Regional Budget Allocation for Health**

The Regional Budget (APBD) allocation for the health sector in West Nusa Tenggara Province shows an increasing trend from year to year. In 2014, the health budget was recorded at 47.624 billion rupiah, and it will increase significantly to 762.80 billion rupiah by 2023.

The increased budget allocation for the health sector demonstrates the local government's commitment to improving the quality of public health services. Government spending in the health sector is directed towards the development and revitalization of health facilities, improving basic health services, and expanding public health insurance coverage.

#### **4.1.5 GRDP Per Capita**

The Gross Regional Domestic Product (GRDP) per capita of West Nusa Tenggara Province during the 2014–2023 period exhibited fluctuating dynamics. In 2014, economic growth was recorded at 5.17 percent and surged to 21.76 percent in 2015. However, in subsequent years, economic growth slowed and even contracted due to natural disasters and the COVID-19 pandemic.

In 2018, West Nusa Tenggara's economic growth contracted by -4.56 percent due to a major earthquake that struck the region. The COVID-19 pandemic in 2020 also caused an economic contraction of -0.62 percent. However, in the 2021–2023 period, the NTB economy showed a recovery with positive and relatively stable growth.



## 4.2 Discussion

### 4.2.1 The Influence of Poverty Level on the Human Development Index

Based on the results of data analysis, the calculated t-value was -0.201571, which is smaller than the t-table of 2.447. Therefore, it can be concluded that the poverty level variable does not have a significant effect on the Human Development Index (HDI) in West Nusa Tenggara Province during the 2014–2023 period. This result indicates that fluctuations in the poverty level in the NTB region have not directly affected the increase or decrease in the HDI.

This situation may be caused by other factors that are more dominant in determining the quality of human development, such as access to education, health care, and productive employment. Furthermore, poverty alleviation programs in this region may not have optimally improved basic aspects of human development, such as education and health, which are key components of the HDI.

### 4.2.2 The Influence of Health APBD Allocation on the Human Development Index

The research results show that the regional budget allocation for health has a positive and significant impact on the Human Development Index in West Nusa Tenggara Province. This indicates that increased health spending contributes significantly to improving the quality of life for the community.

Increasing the allocation of the health budget allows local governments to improve health services, expand the reach of health facilities, and increase the life expectancy of the community, which is one of the main components in calculating the HDI.

### 4.2.3 The Influence of Per Capita GRDP on the Human Development Index

The analysis shows that GRDP per capita did not significantly impact the Human Development Index in West Nusa Tenggara Province during the study period. This

indicates that increases in regional income have not been directly followed by an equitable increase in the quality of human development.

This shows that the economic growth that has occurred has not fully impacted on improving people's welfare, especially in the aspects of education and health which are the main dimensions of the HDI.

### 4.2.4 The Simultaneous Effect of Poverty Level, Health APBD Allocation, and Per Capita GRDP on the Human Development Index

Based on the results of the simultaneous significance test (F test) at a 95 percent confidence level, the calculated F value was 0.471341, which is smaller than the F table of 4.76. Thus, it can be concluded that simultaneously the variables of poverty level, APBD allocation for health, and GRDP per capita do not have a significant effect on the Human Development Index in West Nusa Tenggara Province during the 2014–2023 period.

These results indicate that the three independent variables together have not been able to explain the variation in changes in the Human Development Index significantly during the research period.

## 5. CONCLUSION

Based on the research results and discussions described previously, the following conclusions can be drawn:

- a. The poverty rate has a negative but insignificant effect on the Human Development Index (HDI) in West Nusa Tenggara Province for the period 2014–2023.
- b. The allocation of the regional budget for health has a positive but insignificant effect on the Human Development Index (HDI) in West Nusa Tenggara Province for the 2014–2023 period.

- c. GRDP per capita has a positive but insignificant effect on the Human Development Index (HDI) in West Nusa Tenggara Province for the period 2014–2023.
- d. Simultaneously, the poverty rate, health APBD allocation, and GRDP per capita did not have a significant effect on the Human Development Index (HDI) in West Nusa Tenggara Province for the 2014–2023 period.

## SUGGESTION

Referring to the findings of this study, it is deemed necessary to provide the following suggestions:

- a. Regional governments need to increase the effectiveness of the use of the Regional Budget (APBD) in the health sector, not only in terms of the budget, but also in terms of the distribution and quality of basic health services across all districts/cities.
- b. Poverty alleviation programs are needed that are more integrated with the education and health

sectors, because increasing the HDI is not only determined by income, but also by access to basic public services.

- c. The government and economic actors should encourage inclusive economic growth so that the increase in GRDP per capita can be felt equally by all levels of society, especially low-income groups.
- d. Further researchers are advised to add other variables such as education level, unemployment, and public investment so that the research model is more comprehensive in explaining variations in the HDI.
- e. Future research can use panel data between districts/cities in NTB Province to obtain more accurate results and describe differences between regions.
- f. Periodic evaluation of the impact of regional development policies is necessary so that every increase in the public budget truly contributes to improving human welfare and development.

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