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# The Influence of DPRD Members, Public Schools, and Community Health Centers on HDI in West Nusa Tenggara (2020-2024)

**Suparlan, Anastasia Aji[1], Fina Ade Kantari[2], Miftahul Hairatul Jannah[3], Nadya Eka Juliana[4]**
Faculty of Economics and Bussines, University of Mataram
Email: miftahulhairatuljannah@gmail.com

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ABSTRACT

This study aims to analyze the influence of the number of Regional People's Representative Council (DPRD) members, the number of public schools, and the number of Community Health Centers (Puskesmas) on the Human Development Index (HDI) across the regencies and cities of West Nusa Tenggara Province during the 2020–2024 period. The study is motivated by the importance of identifying institutional, educational, and health-related factors that contribute to regional human development performance. A quantitative associative research approach was employed using secondary data collected from official government institutions, including Statistics Indonesia (BPS) and other relevant agencies. The data were analyzed using multiple linear regression to examine both the simultaneous and partial effects of the independent variables on the HDI. The findings reveal that, simultaneously, the number of DPRD members, the number of public schools, and the number of Puskesmas significantly influence the HDI. However, partial analysis demonstrates that only the number of public schools has a statistically significant negative effect on the HDI, whereas the number of DPRD members and the number of Puskesmas do not show a significant effect. These results indicate that increasing the quantity of educational and health facilities alone is insufficient to improve human development outcomes without considering their effectiveness, quality, accessibility, and equitable distribution. In particular, the negative relationship between the number of public schools and HDI highlights the need for further evaluation of educational service quality and resource allocation within the province. This study contributes to the literature on regional development by providing empirical evidence that supports more effective human resource development policies. The findings also offer practical implications for local governments in formulating integrated policies that strengthen legislative support, improve educational quality, and enhance health service delivery to achieve sustainable improvements in human development.

## 1. Introduction

The Human Development Index (HDI) is a composite index that serves as an indicator measuring representative and tangible progress in human development. First introduced by the United Nations Development Programme (UNDP) in 1990, HDI is defined by Statistics Indonesia (Badan Pusat Statistik/BPS) as a measure of development achievement based on various components fundamental to quality of life. The calculation of HDI relies on data representing its four core dimensions: life expectancy at birth, which measures success in the health sector; literacy rates and mean years of schooling, which gauge achievements in education; and the purchasing power of the community, approximated by per capita expenditure, which assesses success in achieving a decent standard of living (Putri & Muljaningsih, 2022a).

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According to data from Statistics Indonesia, the HDI of West Nusa Tenggara (NTB) Province has shown a significant and consistent increase from 2020 to 2024. In 2020, NTB's HDI was recorded at 70.46, rising steadily to reach 73.10 in 2024 (BPS NTB, 2024). Despite this aggregate provincial progress, a notable disparity persists in the distribution of HDI achievements across NTB's regencies and cities. In 2024, North Lombok Regency registered the lowest HDI at 68.68, a figure substantially below the highest achievement of 81.64 recorded in Mataram City (Suara NTB, 2024). This gap highlights that while overall human development in NTB is improving, the benefits have not been evenly distributed across all regions. It indicates persistent inequalities in access to essential services, particularly in the fields of education and health.

The education factor is a critical determinant in enhancing a region's HDI. The distribution and number of public schools in an area serve as a vital indicator for assessing whether educational access is equitable for the population (Fahrurrozi et al., 2023). Based on 2024 data from BPS NTB, there are approximately 4,093 schools spread across the province, comprising 229 public kindergartens (TK), 3,008 public elementary schools (SD), 606 public junior high schools (SMP), 150 public senior high schools (SMA), and 100 public vocational high schools (SMK) (Badan Pusat Statistik Provinsi Nusa Tenggara Barat, 2024b). However, the distribution of these schools is uneven, with a large concentration located on Lombok Island. In contrast, geographically remote areas face more limited access to educational facilities. This inequality in the number and distribution of public schools impacts the quality of human resources, which is subsequently reflected in the varying HDI achievements across different regions.

Alongside education, the health sector plays an equally crucial role in driving HDI improvement. A primary indicator of health service availability is the presence of Community Health Centers (Pusat Kesehatan Masyarakat/Puskesmas). These centers function as first-level or primary healthcare facilities designed to serve communities at the sub-district (kecamatan) level (Ferdiansyah & Febrianti, 2025). Data from the Indonesian Ministry of Health for 2024 shows that the number of Puskesmas in NTB Province reached 174 units, an increase from 177 units in 2020. Nevertheless, the distribution of Puskesmas across regencies remains unequal. East Lombok Regency has the highest number with 35 units, while Bima City has the lowest, with only 7 units distributed (Badan Pusat Statistik Provinsi Nusa Tenggara Barat, 2024a). Such disparities can lead to significant gaps in healthcare services between regions, particularly affecting rural areas. This, in turn, has a direct impact on life expectancy—a key component of HDI.

From an institutional perspective, the existence and capacity of the Regional People's Representative Council (Dewan Perwakilan Rakyat Daerah/DPRD) are also influential in shaping development policy direction, including in the education and health sectors. The DPRD, as a regional legislative body, performs essential functions of legislation, budgeting, and oversight. The effectiveness with which it carries out these functions contributes significantly to the successful implementation of local development programs. For the 2019–2024 period, the NTB Provincial DPRD comprises 65 members (Detik News, 2024). At the regency/city level, East Lombok Regency has the largest DPRD membership with 50 persons. Variations in the number and performance of DPRD members across regions can affect the level of representation and oversight in public policymaking. This is especially critical in decisions related to budget allocation for education and health—two pivotal aspects for improving a region's HDI.

Previous research indicates a relationship between educational factors, health factors, and institutional elements (such as the DPRD) and the improvement of HDI in a

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region. A study by (Febrina et al., 2024a) found that First-Level Healthcare Facilities (Fasilitas Kesehatan Tingkat Pertama/FKTP), which include Puskesmas, have a significant influence on HDI. Furthermore, research by (Putri & Muljaningsih, 2022a) concluded that the education index positively affects HDI. However, much of this existing research is limited to regions with relatively advanced development characteristics, such as Java and Sumatra. Studies focusing on provinces with similar characteristics to NTB, which faces distinct geographic and developmental challenges, are still relatively scarce. Moreover, there is a notable research gap, as no study has yet simultaneously examined the influence of the number of regency/city DPRD members, the number of public schools, and the number of Puskesmas on HDI at the regency/city level.

Based on the empirical conditions and previous studies, the research problem addressed in this study is whether the number of regency/city DPRD members, the number of public schools, and the number of Puskesmas significantly influence the Human Development Index (HDI) across the regencies and cities of West Nusa Tenggara Province during the 2020–2024 period. This problem emerges from the persistent disparities in HDI achievements among regencies/cities despite the overall improvement in provincial HDI, as well as the limited empirical evidence integrating institutional, educational, and health determinants within a single analytical framework.

Accordingly, the objective of this study is to analyze the influence of the number of regency/city DPRD members, the number of public schools, and the number of Puskesmas on the Human Development Index (HDI) in the regencies and cities of West Nusa Tenggara Province during the 2020–2024 period. Specifically, this study seeks to determine the extent to which institutional, educational, and healthcare infrastructure variables contribute to regional disparities in human development.

Theoretically, this research contributes to the literature on regional human development by extending empirical evidence regarding the combined role of institutional capacity, educational infrastructure, and healthcare facilities in explaining variations in HDI at the regency/city level. The findings are expected to enrich the existing body of knowledge on regional development by providing evidence from West Nusa Tenggara, a province characterized by distinctive geographical and developmental challenges that remain underrepresented in previous studies. Practically, the results are expected to provide useful insights for local governments, regional legislatures (DPRD), development planners, and policymakers in formulating more effective education, health, and regional development policies aimed at reducing disparities in human development across regions.

The novelty of this study lies in its simultaneous examination of the influence of the number of regency/city DPRD members, the number of public schools, and the number of Puskesmas on HDI using panel data from all regencies and cities in West Nusa Tenggara Province during the 2020–2024 period. Unlike previous studies that generally focus on educational or health factors separately or examine more developed regions, this research integrates institutional, educational, and healthcare dimensions within a single analytical model to provide a more comprehensive understanding of the determinants of regional human development disparities in West Nusa Tenggara.

## 2. Literature Review

### 2.1 Conceptual and Theoretical Foundations

#### 2.1.1 Human Capital Theory

Human Capital Theory, introduced by Gary S. Becker (1964), posits that education and health constitute long-term investments in individuals, enhancing their abilities, skills, and work productivity. Within this framework, humans are viewed as assets or capital whose value can be augmented through learning and health maintenance. Education plays a role in

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broadening horizons, increasing knowledge, and fostering creativity within a society, while good health supports an individual's work capacity and productivity. In the context of this research, the number of public schools represents the availability of educational infrastructure as a form of investment in education. Conversely, the number of Community Health Centers (Puskesmas) signifies investment in public health. Furthermore, the role of local legislative institutions (the DPRD) helps determine the direction and priorities of human development through policy and budget allocation. Thus, Human Capital Theory serves as the grand theory explaining the relationship between education, health, and governance in improving a region's HDI.

### 2.1.2 Human Development Index (HDI)

The Human Development Index (HDI) is a composite indicator used to measure achievements in human development based on three key dimensions: a long and healthy life, knowledge, and a decent standard of living. According to Statistics Indonesia (BPS, 2024), HDI is calculated using three main indicators: life expectancy at birth, mean years of schooling, and adjusted per capita expenditure. The HDI reflects the quality of human resources, serving as a basis for assessing the success of development in a region.

### 2.1.3 Number of DPRD Members

The Regional People's Representative Council (DPRD) holds legislative, supervisory, and budgetary functions that play a crucial role in determining the direction of regional development. A proportional number of DPRD members is expected to enhance the effectiveness of these functions. According to Law Number 23 of 2014 concerning Regional Government, the DPRD acts as a partner to the regional head in formulating public policy, including policies related to improving the quality of education and public health.

### 2.1.4 Number of Public Schools

The number of public schools serves as an indicator of the availability of formal educational facilities in a region. The greater the number of available public schools, the greater the opportunity for the community to access proper education. Education is one of the primary components in shaping the HDI, measured through the indicators of mean years of schooling and expected years of schooling. According to Todaro and Smith (2020), improved access to education has a direct impact on enhancing the quality of human resources, which ultimately drives economic growth and social welfare.

### 2.1.5 Number of Community Health Centers

Puskesmas are first-level healthcare facilities that play a strategic role in providing promotive, preventive, curative, and rehabilitative services to the community. The availability of Puskesmas in a region reflects the level of public access to basic health services. According to the Ministry of Health (2023), increasing the number of Puskesmas can expand the reach of health services and contribute to raising life expectancy, which is one of the components forming the HDI.

## 2.2 Review of Empirical Studies

Previous empirical studies generally demonstrate that investments in education, healthcare, and public governance positively influence human development outcomes. Numerous studies report that educational infrastructure significantly improves educational attainment, thereby increasing HDI through higher expected years of schooling and mean years of schooling. Likewise, improvements in healthcare accessibility through expanded health facilities have been found to increase life expectancy and overall human development performance.

Empirical evidence also indicates that institutional quality and government capacity contribute to regional development effectiveness. Legislative institutions influence development outcomes through budgeting decisions, policy formulation, and oversight of

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public expenditure. Regions with stronger governance capacity generally allocate greater resources to education and healthcare, resulting in improved human development indicators.

Although prior studies consistently report positive relationships between education, healthcare, governance, and HDI, most investigations examine these variables separately or focus only on fiscal expenditure and socioeconomic indicators. Limited studies simultaneously analyze institutional representation, educational infrastructure, and healthcare infrastructure within a single empirical model. Moreover, previous research predominantly focuses on provinces in Java or nationally aggregated datasets, whereas evidence from eastern Indonesian provinces remains relatively limited.

### 2.3 Identification of the Research Gap

Based on the theoretical and empirical review, several research gaps can be identified. First, previous studies primarily examine educational expenditure, healthcare expenditure, or fiscal decentralization as determinants of HDI, while relatively few studies investigate the direct influence of institutional representation measured by the number of DPRD members. Second, many studies analyze educational and healthcare variables independently rather than integrating governance, education, and health infrastructure into a unified analytical framework grounded in Human Capital Theory. Third, empirical evidence concerning the determinants of HDI in West Nusa Tenggara Province remains limited despite the province exhibiting substantial disparities in human development across regencies and municipalities. Therefore, this study contributes by simultaneously examining the effects of the number of DPRD members, the number of public schools, and the number of Community Health Centers on HDI at the regency and municipal level in West Nusa Tenggara Province.

### 2.4 Development of the Conceptual Framework

This study examines the influence of governance capacity and public service infrastructure on regional human development. The conceptual framework is developed based on Human Capital Theory, which argues that investments in education and health improve the quality of human resources, while effective governance supports resource allocation toward human development.

The number of DPRD members is expected to positively influence HDI because legislative institutions determine development priorities through budgeting, legislation, and oversight. The number of public schools is expected to improve educational access, thereby enhancing educational attainment and increasing HDI. Similarly, the availability of Community Health Centers is expected to improve healthcare accessibility and life expectancy, contributing positively to HDI.

Accordingly, the conceptual framework proposes that the three independent variables—the number of DPRD members (X1), the number of public schools (X2), and the number of Community Health Centers (X3)—have direct positive effects on the Human Development Index (HDI) as the dependent variable.

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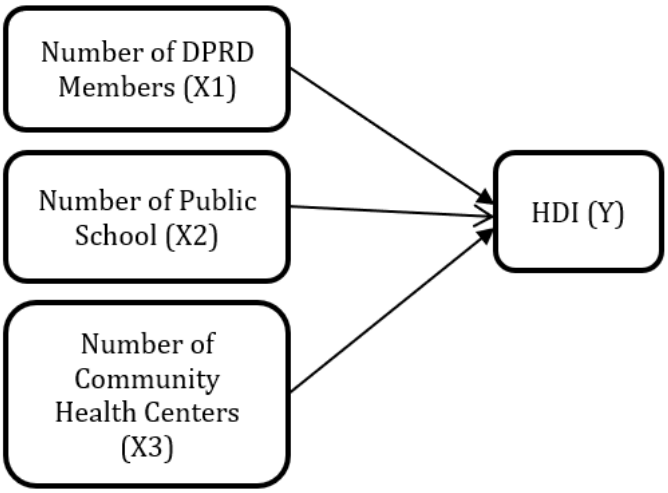


**Fig. 1.** Conceptual Framework of the Study

### 2.5 Hypotheses or Research Propositions

Based on the theoretical framework, the following hypotheses are proposed regarding the relationship between the number of DPRD members, public schools, and Puskesmas on the Human Development Index (HDI) in the regencies and cities of West Nusa Tenggara Province:

**$H_1$:** The number of Regional People's Representative Council (DPRD) members has a **positive and significant influence** on the Human Development Index (HDI).

**$H_2$:** The number of public schools has a **positive and significant influence** on the Human Development Index (HDI).

**$H_3$:** The number of Community Health Centers (Puskesmas) has a **positive and significant influence** on the Human Development Index (HDI).

## 3. Research Methods

### 3.1 Research Design

This study employs a quantitative associative approach aimed at determining the influence of the number of DPRD members, the number of public schools, and the number of Puskesmas on the Human Development Index (HDI). The research is explanatory in nature, as it explains the causal relationships between variables using secondary data analyzed statistically. The quantitative explanatory design was selected because it is appropriate for examining causal relationships among measurable variables and testing the proposed hypotheses through statistical analysis.

### 3.2 Research Context and Setting

The study was conducted in West Nusa Tenggara (NTB) Province, Indonesia, covering all regencies and cities within the province. The research focuses on examining regional variations in human development by analyzing institutional, educational, and health-related indicators represented by the number of DPRD members, the number of public schools, and the number of Puskesmas. The observation period spans five years, from 2020 to 2024, enabling the analysis of changes in the Human Development Index (HDI) across districts and over time.

### 2.4 Population and Sample / Research Participants

The research population encompasses all 10 regencies/cities in West Nusa Tenggara Province. Since the population is relatively small and entirely accessible, a census (saturated sampling) method was used. Consequently, all members of the population were included as research samples, resulting in a total of 50 observations (10 regions × 5 years).

### 3.4 Data Sources and Data Collection

The study utilizes secondary data for the period 2020–2024. The data were obtained

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from the Central Statistics Agency (BPS) of NTB Province and its Regencies/Cities, the DPRD Secretariat, and the NTB Provincial Health Office. Data collection techniques were carried out through documentation studies and literature reviews of official publications and academic literature related to human development, education, and health. These secondary data sources provide consistent and reliable information required for statistical analysis.

### 2.4 Measurement of Variables and Research Instruments

The study employs secondary quantitative data derived from official government publications; therefore, no primary research instrument, such as questionnaires or interview guides, was used. The dependent variable is the Human Development Index (HDI), while the independent variables consist of the number of DPRD members, the number of public schools, and the number of Puskesmas. All variables were measured using annual regional data published by the respective government institutions and organized into a panel dataset covering the 2020–2024 period.

### 3.6 Data Analysis Techniques

The data were analyzed using multiple linear regression to examine the influence of the independent variables on the Human Development Index (HDI). The regression model is formulated as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

where $Y$ represents the Human Development Index (HDI), $X_1$ denotes the number of DPRD members, $X_2$ represents the number of public schools, $X_3$ indicates the number of Puskesmas, $\alpha$ is the constant, $\beta_1$–$\beta_3$ are the regression coefficients, and $\varepsilon$ is the error term.

Classical assumption tests were conducted to ensure the validity of the regression model, including normality, multicollinearity, autocorrelation, and heteroscedasticity tests. Hypothesis testing consisted of the F-test to examine the simultaneous effect of all independent variables, the t-test to evaluate the partial effect of each independent variable, and the coefficient of determination ($R^2$) to assess the explanatory power of the regression model. All statistical analyses were performed using SPSS software to obtain accurate and measurable results.

### 3.7 Validity, Reliability, and Trustworthiness

Since this study relies exclusively on secondary data obtained from official government institutions, the quality of the data is supported by the credibility and consistency of the respective agencies. To ensure the robustness of the statistical analysis, classical assumption tests—including normality, multicollinearity, autocorrelation, and heteroscedasticity tests—were performed prior to hypothesis testing. These procedures help verify that the regression model satisfies the assumptions required for producing valid and reliable estimates.

### 3.8 Ethical Considerations

The study exclusively uses publicly available secondary data collected from official government institutions, including the Central Statistics Agency (BPS), the DPRD Secretariat, and the NTB Provincial Health Office. Consequently, the research does not involve direct interaction with human participants, informed consent procedures, or the collection of confidential personal information. The data were used solely for academic purposes while maintaining research integrity and ensuring accurate reporting of findings.

### 3.9 Research Procedure

The research procedure consisted of several sequential stages. First, the research problem and objectives were formulated based on issues related to human development in West Nusa Tenggara Province. Second, secondary data for the period 2020–2024 were collected from the Central Statistics Agency

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(BPS), the DPRD Secretariat, and the NTB Provincial Health Office through documentation and literature review. Third, the collected data were compiled and organized into a research dataset. Fourth, multiple linear regression analysis was conducted, preceded by classical assumption tests to ensure compliance with the statistical assumptions. Finally, hypothesis testing using the F-test, t-test, and coefficient of determination ($R^2$) was performed, followed by interpretation of the results and formulation of the research conclusions.

### 3.10 Methodological Limitations

This study is limited to secondary data covering the period from 2020 to 2024 and focuses exclusively on the 10 regencies/cities in West Nusa Tenggara Province. The analysis considers only three independent variables—namely the number of DPRD members, the number of public schools, and the number of Puskesmas—as determinants of the Human Development Index. Consequently, other socioeconomic, demographic, or fiscal factors that may also influence HDI were not included in the regression model. These limitations should be considered when interpreting the findings and provide opportunities for future studies to incorporate additional explanatory variables and broader geographical coverage.

## 4. Results and Discussion

### 4.1 Research Results

#### 4.1.1 Sample Description and Descriptive Statistics

The unit of analysis in this study consists of 50 observations obtained from districts/cities in West Nusa Tenggara Province. The study examines the influence of the Number of Regional People's Representative Council (DPRD) Members, the Number of Public Schools, and the Number of Community Health Centers (PKM) on the Human Development Index (HDI) using multiple linear regression analysis.

#### 4.1.2 Data Quality and Preliminary Analysis

Prior to hypothesis testing, classical assumption tests were conducted to ensure that the regression model fulfilled the requirements of multiple linear regression analysis. These tests included the normality test, multicollinearity test, heteroscedasticity test, and autocorrelation test.

**a. Normality Test**

The normality test was conducted using the One-Sample Kolmogorov–Smirnov Test.

**Table 1. One-Sample Kolmogorov–Smirnov Normality Test**

| One-Sample Kolmogorov-Smirnov Test | | | |
|---|---|---|---|
| | | | Unstandardized Residual |
| N | | | 50 |
| Normal Parameters[a,b] | Mean | | .0000000 |
| | Std. Deviation | | 3.60896434 |
| Most Extreme Differences | Absolute | | .061 |
| | Positive | | .055 |
| | Negative | | -.061 |
| Test Statistic | | | .061 |
| Asymp. Sig. (2-tailed)[c] | | | .200[d] |
| Monte Carlo Sig. (2-tailed)[e] | Sig. | | .913 |
| | 99% Confidence Interval | Lower Bound | .905 |
| | | Upper Bound | .920 |

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a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.
d. This is a lower bound of the true significance.
e. Lilliefors' method based on 10000 Monte Carlo samples with starting seed 2000000.

Source: SPSS, 2026

The results of the normality test show an Asymp. Sig. (2-tailed) value of 0.200, which is greater than 0.05. Based on the testing criteria, if the significance value is greater than 0.05, then there is insufficient evidence to reject the null hypothesis that the residuals are normally distributed. Therefore, the residual data are normally distributed, indicating that the normality assumption has been satisfied.

**b. Multicollinearity Test**

The multicollinearity test was performed using the Tolerance and Variance Inflation Factor (VIF) values.

**Table 2. Multicollinearity Test Results**

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients Beta | t | Sig. | 95.0% Confidence Interval for B | | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | | | | Lower Bound | Upper Bound | Tolerance | VIF |
| 1 | Constant | 73.382 | 2.339 | | 31.374 | .000 | 68.674 | 78.090 | | |
| | Number of DPRD Members | .044 | .097 | .098 | .453 | .653 | -.152 | .240 | .292 | 3.422 |
| | Number of Public Schools | -.029 | .010 | -1.536 | -2.966 | .005 | -.049 | -.009 | .051 | 19.473 |
| | Number of Community Health Centers (PKM) | .466 | .291 | .980 | 1.599 | .117 | -.121 | 1.052 | .037 | 27.258 |

Source: SPSS, 2026

Based on Table 2, the Number of DPRD Members has a VIF value of 3.422 and a Tolerance value of 0.292, indicating no serious multicollinearity because the VIF value is below 10 and the Tolerance value exceeds 0.10.

Conversely, the Number of Public Schools has a VIF value of 19.473 and a Tolerance value of 0.051, indicating a strong multicollinearity problem. Likewise, the Number of Community Health Centers (PKM) has a VIF value of 27.258 and a Tolerance value of 0.037, also indicating substantial multicollinearity. Therefore, the variables Number of Public Schools and Number of Community Health Centers (PKM) experience multicollinearity, whereas the Number of DPRD Members does not.

**c. Heteroscedasticity Test**

The heteroscedasticity test was conducted using the White Test.

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**Table 3. Heteroscedasticity Test Results**

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | | | |
| 1 | Constant | 2.149 | 1.185 | – | 1.814 | .076 |
| | Number of DPRD Members | .090 | .049 | .442 | 1.829 | .074 |
| | Number of Public Schools | -.003 | .005 | -.375 | -.651 | .519 |
| | Number of Community Health Centers (PKM) | -.067 | .148 | -.311 | -.457 | .650 |

a. Dependent Variable: ABS_RES

Source: SPSS, 2026

The heteroscedasticity test results indicate that all independent variables have significance values greater than 0.05. Specifically, the Number of DPRD Members has a significance value of 0.074, the Number of Public Schools has 0.519, and the Number of Community Health Centers (PKM) has 0.650. These findings indicate that the regression model does not exhibit heteroscedasticity and satisfies the assumption of homoscedasticity.

**d. Autocorrelation Test**

Autocorrelation was evaluated using the Durbin–Watson test.

**Table 4. Autocorrelation Test Results**

**Model Summary[b]**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin Watson |
|---|---|---|---|---|---|
| 1 | .464[a] | .215 | .164 | 1888.749 | .815 |

a. Predictors: (Constant), Number of Community Health Centers (PKM), Number of DPRD Members, Number of Public Schools

b. Dependent Variable: ABS_RES

Source: SPSS, 2026

The Durbin–Watson statistic is 0.815, which is below the commonly accepted neutral interval of 1.612–2.388. This result indicates the presence of positive autocorrelation in the regression residuals. Positive autocorrelation suggests that residual values are positively correlated across observations and should therefore be considered when interpreting the regression estimates.

### 4.1.3 Main Analytical Results

Multiple linear regression analysis was employed to examine the influence of the Number of DPRD Members, the Number of Public Schools, and the Number of Community Health Centers (PKM) on the Human Development Index (HDI).

**a. Multiple Linear Regression Analysis (t-Test)**

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**Table 5. Multiple Linear Regression Coefficients**

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | | | |
| 1 | Constant | 73.382 | 2.339 | – | 31.374 | .000 |
| | Number of DPRD Members | .044 | .097 | .098 | .453 | .653 |
| | Number of Public Schools | -.029 | .010 | -1.536 | -2.966 | .005 |
| | Number of Community Health Centers (PKM) | .466 | .291 | .980 | 1.599 | .117 |

a. Dependent Variable: IPM

Source: SPSS, 2026

The estimated multiple linear regression equation is:

$$HDI = 73.382 + 0.044(DPRD) - 0.029(JSN) + 0.466(PKM)$$

The regression coefficients indicate that the Number of DPRD Members has a positive coefficient of 0.044, the Number of Public Schools has a negative coefficient of −0.029, and the Number of Community Health Centers (PKM) has a positive coefficient of 0.466.

### 4.1.4 Hypothesis Testing Results

**a. Partial Test (t-Test)**

The results of the partial significance test indicate the following:

1) The Number of DPRD Members has a t-value of 0.453 with a significance value of 0.653 (>0.05), indicating no significant effect on the Human Development Index (HDI).
2) The Number of Public Schools has a t-value of −2.966 with a significance value of 0.005 (<0.05), indicating a significant negative effect on the Human Development Index (HDI).
3) The Number of Community Health Centers (PKM) has a t-value of 1.599 with a significance value of 0.117 (>0.05), indicating no significant effect on the Human Development Index (HDI).

**b. Simultaneous Test (F-Test)**

**Table 6. ANOVA (Simultaneous Test)**

**ANOVA[a]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 368.752 | 3 | 122.917 | 8.860 | .000[b] |
| | Residual | 638.207 | 46 | 13.874 | | |
| | Total | 1,006.959 | 49 | | | |

a. Dependent Variable: IPM

b. Predictors: (Constant), Number of Community Health Centers (PKM), Number of DPRD Members, Number of Public Schools

Source: SPSS, 2026

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The ANOVA results show an F-value of 8.860 with a significance value of 0.000, indicating that the independent variables simultaneously influence the Human Development Index (HDI). Therefore, the regression model is statistically significant and suitable for hypothesis testing.

**c. Coefficient of Determination**

**Table 7. Coefficient of Determination**

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .605[a] | .366 | .325 | 372.479 |

a. Predictors: (Constant), Number of Community Health Centers (PKM), Number of DPRD Members, Number of Public Schools

Source: SPSS, 2026

The coefficient of determination ($R^2$) is 0.366, indicating that 36.6% of the variation in the Human Development Index (HDI) is explained by the Number of DPRD Members, the Number of Public Schools, and the Number of Community Health Centers (PKM). The remaining 63.4% is explained by other variables outside the regression model. Furthermore, the Adjusted $R^2$ value of 0.325 indicates that the model has a moderate explanatory capability after accounting for the number of predictors included in the analysis.

### 4.1.5 Visual Presentation of Results

Tables 1–7 present the main findings of the study in a clear and systematic manner. Table 1 shows that the residuals are normally distributed. Tables 2–4 present the results of the classical assumption tests, indicating that the regression model satisfies the assumptions of normality and homoscedasticity, although multicollinearity is detected in the Number of Public Schools and the Number of Community Health Centers (PKM), and positive autocorrelation is identified. Table 5 summarizes the multiple linear regression results, showing that only the Number of Public Schools has a significant effect on the Human Development Index (HDI). Table 6 demonstrates that the regression model is statistically significant based on the F-test, while Table 7 shows that the independent variables explain 36.6% of the variation in HDI, with the remaining 63.4% explained by other factors outside the model.

## 4.2 Research Discussion

### 4.2.1 Interpretation of Key Findings

This This study examines the influence of the number of DPRD members, public schools, and Puskesmas on HDI in the regencies/cities of NTB Province during the 2020-2024 period. According to data from the NTB Central Statistics Agency (BPS, 2024), the aggregate HDI of NTB Province showed significant improvement, rising from 70.46 in 2020 to 73.10 in 2024. However, this progress has not been uniform across regions. For instance, in 2024, North Lombok Regency had the lowest HDI at 68.68, while Mataram City recorded the highest at 81.64. This disparity likely reflects differences in access to education and healthcare across these areas.

From the education perspective, data indicates approximately 4,093 public schools were spread across NTB in 2024, comprising kindergartens (TK), elementary schools (SD), junior high schools (SMP), senior high schools (SMA), and vocational high schools (SMK). However, the distribution of these schools is uneven, with a higher concentration on Lombok Island, while remote areas have

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limited educational access. This indicates an inequality in human resource quality that affects HDI achievement.

The health sector, represented by the number of Puskesmas, also saw an increase, although its distribution remains unequal. In 2024, there were 174 Puskesmas units in NTB, with the highest number in East Lombok (35 units) and the lowest in Bima City (7 units). This imbalance in distribution can impact the quality of health services and life expectancy, which are crucial components of HDI.

The results of the multiple linear regression analysis show that the regression model can explain 36.6% of the variation in HDI (Adjusted R Square = 0.325), indicating that other factors play a role in determining human development. Partial t-test analysis reveals that the number of public schools has a negative and significant influence on HDI, with a coefficient of -0.029 (p = 0.005). This suggests that merely increasing the number of public schools does not automatically raise HDI, likely due to uneven distribution and quality issues. The coefficient for the number of DPRD members is 0.044 (p = 0.653), and for the number of Puskesmas is 0.466 (p = 0.117), both of which are not statistically significant. This indicates that these two variables do not have a direct, significant influence on HDI in NTB during the study period.

Multicollinearity tests showed high VIF values for the number of public schools (19.473) and Puskesmas (27.258), indicating a strong correlation between these two variables which can affect model stability. The number of DPRD members did not exhibit multicollinearity issues (VIF 3.422). Heteroscedasticity and residual normality tests confirmed that the model meets classical assumptions. However, the autocorrelation test yielded a Durbin-Watson value of 0.815, indicating the presence of positive autocorrelation which can affect the validity of the model estimates.

Therefore, although the number of public schools increased, this factor is negatively associated with HDI, indicating problems of equitable distribution and quality of education. Meanwhile, the number of DPRD members and Puskesmas, which were hypothesized to support policy and basic health services, did not show a significant contribution to HDI improvement. This is possibly due to suboptimal service quality and policy effectiveness in the field.

Overall, graphical data on HDI distribution across NTB's regencies/cities, along with the numbers of public schools and Puskesmas, illustrate spatial inequalities and service quality issues as important factors in human development. Consequently, strategic efforts are needed to improve the distribution and quality of education and health services, while also enhancing the role of local legislative bodies in overseeing equitable and effective development policies.

### 4.2.2 Comparison with Previous Studies

The findings suggest that the availability of public facilities alone is insufficient to improve HDI if their distribution and quality remain unequal. Although the number of public schools increased during the study period, the negative relationship with HDI indicates that disparities in educational access and quality may offset the expected positive contribution to human development. Similarly, the insignificant effects of DPRD members and Puskesmas imply that institutional capacity and service effectiveness may be more important than the mere quantity of these public institutions.

Compared with previous empirical studies, the present findings indicate that regional disparities remain an important issue in human development. While many studies report positive associations between educational and health infrastructure and HDI, this study demonstrates that quantitative expansion alone may not generate proportional improvements in human development outcomes when accompanied by unequal spatial distribution and differences in service quality.

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#### 4.2.3 Theoretical Contributions

The findings contribute to the understanding of human development by demonstrating that institutional and public service indicators should not be interpreted solely in quantitative terms. The negative relationship between the number of public schools and HDI suggests that accessibility, distribution, and quality of educational services are more critical than simply increasing the number of educational institutions.

Furthermore, the insignificant influence of the number of DPRD members and Puskesmas indicates that the effectiveness of governance and healthcare services depends not only on institutional availability but also on the quality of policy implementation and public service delivery. These findings enrich the theoretical understanding that human development is influenced by both the availability and effectiveness of public institutions.

#### 4.2.4 Practical and Policy Implications

The results provide important implications for regional governments and policymakers in NTB Province. Rather than focusing exclusively on increasing the number of public schools and healthcare facilities, greater attention should be directed toward improving their distribution, accessibility, and service quality, particularly in underserved regions.

The findings also highlight the importance of strengthening the oversight and policymaking functions of DPRD members to ensure that education and health development programs are implemented effectively and equitably. Policies aimed at reducing regional disparities are expected to contribute more substantially to sustainable improvements in HDI.

#### 4.2.5 Integration with the Research Gap

This study addresses the research gap by simultaneously examining the influence of political representation, educational infrastructure, and healthcare facilities on HDI at the regency and city levels in NTB Province during the 2020–2024 period. The findings demonstrate that the existence of these public institutions alone does not automatically improve human development outcomes, thereby emphasizing the importance of equitable distribution and service effectiveness. Consequently, the study contributes empirical evidence that complements previous research by highlighting the need to consider both institutional quantity and implementation quality in explaining regional differences in HDI.

#### 4.2.6 Acknowledgement of Study Limitations

This study is limited to regencies and cities within NTB Province during the 2020–2024 period, so the findings may not fully represent conditions in other provinces with different socioeconomic characteristics. In addition, the regression model explains only 36.6% of the variation in HDI, indicating that other determinants of human development beyond the variables examined may also play an important role. The presence of positive autocorrelation and the high correlation between the numbers of public schools and Puskesmas also suggest that the results should be interpreted with appropriate caution.

## 5 Conclusion

### 5.1 Summary of Key Findings

This research confirms that, simultaneously, the variables of the number of DPRD members, the number of public schools, and the number of Puskesmas have a significant influence on the Human Development Index (HDI) in the regencies/cities of West Nusa Tenggara Province during the 2020-2024 period. However, when examined partially, only the variable for the number of public schools has a significant influence on HDI, with a negative coefficient of -0.029 and a significance value of 0.005. This indicates that as the number of public schools increases, HDI tends to

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decrease. This result likely reflects issues related to the equitable distribution and quality of schools, suggesting that merely increasing quantity without a corresponding improvement in quality may have a suboptimal impact on enhancing human resource quality.

Meanwhile, the number of DPRD members and the number of Puskesmas do not show a significant partial influence on HDI, with respective significance values of 0.653 and 0.117. This indicates that the presence of DPRD members in terms of quantity and the number of basic health facilities at the Puskesmas level have not yet provided a strong, direct contribution to human development in this region. Other factors, such as the effectiveness of DPRD performance, policy quality, and the distribution and quality of services at Puskesmas, require further attention to enhance their positive impact.

The regression model used was able to explain approximately 36.6% of the variation in HDI within the observations, indicating that other supporting factors for increasing HDI were not captured in this study. This conclusion highlights the need for integrated efforts in equalizing education quality, improving the effectiveness of local legislative functions, and ensuring the equitable distribution and enhanced quality of health services as part of a comprehensive human development strategy in NTB.

### 5.2 Theoretical Contributions

This study contributes to the empirical understanding of the relationship between public institutional capacity and human development by demonstrating that the presence of public infrastructure or institutional representation does not automatically translate into improvements in HDI. The findings suggest that the quality, effectiveness, and equitable distribution of education and public services are more critical than merely increasing their quantity. These results enrich the discussion on regional development by emphasizing that institutional effectiveness should accompany resource expansion to achieve sustainable improvements in human development.

### 5.3 Practical and Policy Implications

The findings imply that local governments should prioritize improving the quality and equitable distribution of public schools rather than focusing solely on increasing their number. In addition, strengthening the performance and effectiveness of the DPRD in planning, supervising, and evaluating development policies is necessary to ensure greater contributions to human development. The quality of services provided by Community Health Centers (Puskesmas) should also be enhanced through better resource allocation, improved service standards, and more equitable distribution of health services across regions. These integrated efforts are expected to support more effective human development policies in West Nusa Tenggara Province.

### 5.4 Limitations of the Study

This study is limited to regencies/cities in West Nusa Tenggara Province during the 2020–2024 observation period, which may limit the generalizability of the findings to other regions or different periods. In addition, the regression model explains only 36.6% of the variation in HDI, indicating that many other determinants of human development were not included in the analysis. Consequently, the findings should be interpreted within the scope of the selected variables and research context.

### 5.5 Directions for Future Research

Future studies are encouraged to incorporate additional variables that may influence HDI, such as regional government expenditure, poverty, unemployment, income levels, economic growth, infrastructure development, and governance quality, to obtain a more comprehensive explanation of human development. Further research may also expand the geographical scope, employ longer observation periods, or apply alternative analytical approaches to examine

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the complex relationships between institutional performance, public services, and human development outcomes.

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