

## Analysis of the Influence of Open Unemployment Rate, Poverty Rate, and Economic Growth on the Human Development Index in Sleman Regency

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### ABSTRACT

This study aims to identify the influence of the open unemployment rate, poverty rate, and economic growth on the Human Development Index (HDI) in Sleman Regency. Data from 2011 to 2020 were analyzed to understand the relationship between independent variables and HDI as the dependent variable. The multiple linear regression analysis method was employed, supported by classical assumption tests such as normality, autocorrelation, multicollinearity, and heteroskedasticity. The results indicate that the open unemployment rate and the poverty rate have a significant influence on HDI, while economic growth does not have a significant impact. Simultaneously, all three variables collectively affect HDI. Policy implications include the crucial role of the government in improving infrastructure and providing education to the community. It is suggested that the community supports government programs for progress and welfare. Further research can explore additional variables influencing HDI. This study contributes to understanding the factors influencing human development in Sleman and can serve as a foundation for future research.

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## **INTRODUCTION**

The development of a region requires a transformation towards a better condition through a well-planned development process. This development must have a clear and structured direction to ensure its goals are achieved. Consistency and prioritization are crucial in implementation to ensure that development aligns with predetermined priorities. This targeted approach ensures that resources are used effectively and efficiently.

Continuity and consistency are key elements in successful development, relying not only on initial steps but also on the ability to sustain these efforts in the long term. Authorities need to create policies that promote sustainable development, ensure adequate resource allocation, and update strategies according to evolving circumstances.

Setting priorities in the development process is essential to ensure effective and efficient resource utilization. Governments and stakeholders can focus efforts and budgets on projects and initiatives with the greatest impact and relevance to each region's needs, preventing the wasteful use of valuable resources.

Implementing a priority-focused approach allows development to be more targeted and responsive to environmental and social changes over time. This ensures positive outcomes aligned with the diverse needs of the community, ultimately improving the quality of life for the region's inhabitants.

Success or failure in regional development can often be gauged through the Human Development Index (HDI). Economic development plays a vital role in enhancing HDI. Governments must undertake various efforts in economic development, such as improving community well-being, reducing unemployment, addressing poverty, enhancing education quality, and reducing income inequality. All these can be realized through well-planned government initiatives.

In Sleman Regency, attention to the HDI has yielded sustained improvements over the years. Data from the Central Statistics Agency (BPS) shows a significant increase in human development in Sleman Regency in 2020. Despite a slight decrease from 83.85 in 2019 to 83.84 in 2020, Sleman Regency maintained a high HDI level and achieved the 6th rank among all regencies/cities in Indonesia in 2020.

The success in HDI growth reflects a strong commitment to economic and social development in Sleman Regency. Planned and sustainable efforts have successfully enhanced the quality of life and welfare of the population, demonstrating how investments in various aspects of human development, including the economy, education, and inequality reduction, can positively impact the HDI and create better conditions for Sleman's residents.

## **THEORETICAL REVIEW**

In the realm of human development, education is a crucial sector in driving progress. Education plays a vital role in improving human development by fostering knowledge, skills, creativity, and innovation, all contributing to individual quality improvement. Therefore, low levels of education can reflect poor human resource quality.

Average Schooling Duration (ASD) is a measure used to estimate how many years, on average, a population in a certain area has been involved in formal education after reaching the age of 25. High ASD indicates that the majority of the population has pursued higher education.

Sleman Regency exhibits a high average schooling duration from 2016 to 2020, indicating consistent growth. According to Layna and Dewata (2017), the education level in Sleman is sufficiently high, supporting the high Human Development Index in the regency.

Health is a significant factor in HDI, influencing the well-being and development of individuals. The health index encompasses health indicators in Sleman Regency, reflecting the commitment to a healthy population through preventive measures, timely treatment, and increased life expectancy.

Sustainable economic development in Sleman and the Special Region of Yogyakarta plays a vital role in supporting efforts to improve the Human Development Index (HDI). Economic development allows for more significant investments in health infrastructure, including the construction of modern hospitals and improved access to quality medical services. Better healthcare facilities and accessible services contribute significantly to improving public health, including disease prevention, timely treatment, and increased life expectancy.

Open unemployment rates are a crucial parameter in measuring a country's economic stability and its impact on the Human Development Index (HDI). High unemployment tends to create economic uncertainty and financial difficulties for individuals and families. It can potentially increase poverty levels, reducing per capita income within the HDI.

Reducing unemployment rates and creating job opportunities are recognized as essential steps in improving HDI and overall human well-being. Sleman Regency experienced fluctuations in open unemployment rates from 2017 to 2021, influenced by factors such as trade wars, the COVID-19 pandemic, and economic adjustments.

The fertile agricultural land in Sleman has the potential to support food security and the well-being of local farmers. Economic development that considers the agricultural sector can increase food production, improving access to nutritious food and contributing to increased health and HDI.

Industrial sector growth in Sleman is also a crucial factor in regional economic improvement. Local industries can create job opportunities and increase community income, contributing to higher per capita income, a component in HDI calculation.

Poverty hampers individuals from consuming nutritious food, obtaining decent education, and enjoying an environment conducive to a healthy life. Economically, it results in low-quality human resources or low productivity. This also affects their limited wages and income, impacting their overall development.

High poverty levels mean individuals often lack adequate funds to meet their basic needs, including those related to human development. Addressing poverty is a critical issue for the Sleman Regency government, considering the significant number of impoverished people compared to other areas in East Java province.

The percentage of the poor population in Sleman Regency fluctuated from 2016 to 2020. While there was a decrease in 2019, the COVID-19 pandemic in 2020 led to an increase in the poverty rate due to the implementation of large-scale social restrictions (PSBB) and the economic downturn in Indonesia.

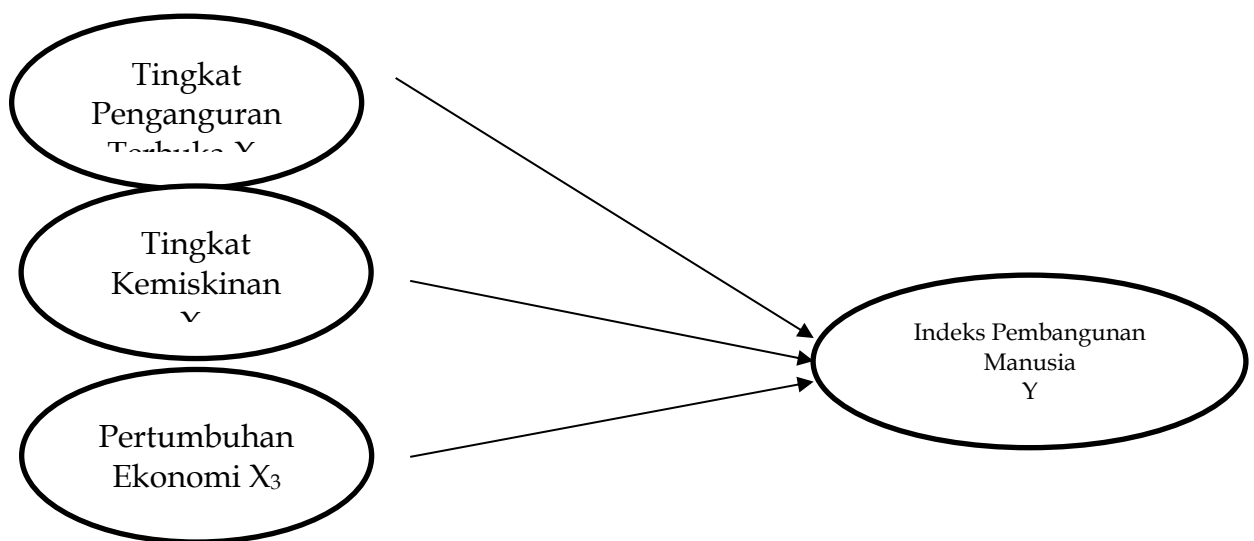


Figure 1. Conceptual Framework

## METHODOLOGY

### *Research Approach*

This study focuses on the impact of education, health, and economic growth on the Human Development Index (HDI) in Sleman Regency. The selection of this object is based on the recognition that health, education, and economic growth have a significant influence on HDI. Therefore, this study will consider independent variables such as health, education, and economic growth, while the dependent variable is HDI in Sleman Regency in the period 2011-2020.

Thus, this research has a directed and focused scope to explain the relationship between these factors and HDI in the region.

### ***Place and Time of Research***

The object of this study is the Sleman Regency, a regency located in Central Java Province. Every year, the Human Development Index (HDI) in Sleman Regency shows an increase by observing the influence of Poverty, which increased in 2020, Economic Growth, which decreased in 2020, and the education level, which increased every year. This research was conducted from 2011 to 2021.

### ***Operational Definition of Research Variables***

The operational definition of a variable is the practical and tangible expression of the variable within the scope of the research. The variables used in this study are independent and dependent variables.

#### **a. Dependent Variable**

Human Development Index (HDI): The dependent variable, also known as the outcome variable, is influenced by independent variables. In this study, the dependent variable is the Human Development Index (HDI) (Y). HDI is calculated from the Health Index, Education Index, and Expenditure Index, expressed in percentage (%), and the data are obtained from the Central Statistics Agency (BPS) of Sleman Regency from 2011 to 2020.

#### **b. Independent Variables**

1. Open Unemployment Rate in Sleman Regency, expressed in years during the period 2011-2020.
2. Poverty Rate using the percentage of the population living in poverty in Sleman Regency in years during the period 2011-2020.
3. Economic Growth: Economic growth is a process of changing economic conditions measured through Gross Domestic Product (GDP) and Gross Regional Domestic Product (GRDP). Economic growth is an increase in per capita output in the long run. The data used in this economic growth variable are the growth rate expressed in percentage (%) during the period 2011-2020.

### ***Data Collection Technique***

The data used in this study are secondary data. The first step is to determine the limitations of the data to be taken. Then, record the data taken from the Central Statistics Agency (BPS). After collecting the data, tabulate it to facilitate the analysis to prove the specified hypotheses.

## **Data Analysis Method**

### *Data Analysis Technique*

To analyze the influence of each variable mentioned in the hypotheses above, multiple linear regression analysis will be used. Multiple linear regression analysis aims to determine the relationship that has an effect between independent and dependent variables. The multiple linear regression analysis in this study will use the Eviews data processing application version 12. The equation model is as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3$$

where:

- $(Y)$ : Human Development Index
- $(X_1)$ : Open Unemployment Rate
- $(X_2)$ : Poverty Rate
- $(X_3)$ : Economic Growth
- $(\beta_0, \beta_1, \beta_2, \beta_3)$ : Coefficients

### *Classical Assumption Test*

According to Sugiyono (2016), in regression analysis, it is essential to conduct classical assumption tests to ensure the validity of the regression model. Classical assumption tests aim to determine whether there are problems in the regression data. In this context, the influence of independent variables (X) on the dependent variable (Y) is evaluated through regression analysis, which compares the relationship between two or more different variables.

There are four tests performed in the classical assumption test:

#### *Normality Test*

The normality test aims to assess the data distribution in the variables to be used in the study. This test should be done before processing data based on research models. The appropriate method for testing normality is the Kolmogorov-Smirnov test. The results of the normality test can be interpreted as follows:

- If the Sig Value > 0.05: The data has a normal distribution.
- If the Sig Value < 0.05: The data does not have a normal distribution.

#### *Multicollinearity Test*

The multicollinearity test is used to determine whether there is a correlation between independent variables in the regression model. If there is a strong correlation between independent variables, it indicates a multicollinearity problem in the regression model. To ensure that the regression model is free from multicollinearity issues, it is important that the correlation coefficients between independent variables are weak and below 0.05.

#### *Autocorrelation Test*

The autocorrelation test aims to test whether there is a correlation between disturbances in the previous period ( $t-1$ ) in the linear regression model. If there is a correlation, it indicates an autocorrelation problem. Autocorrelation occurs because consecutive observations over time are related to

## RESULT AND DISCUSSION

### Classical Assumption Tests

#### *Normality Test*

In the normality test using the Jarque-Bera test, the probability of testing  $>0.05$  indicates that the data is normally distributed. Referring to the table, the result shows a significant probability value of 0.842357, which is higher than  $>0.05$ . This indicates that the data for this study is normally distributed.

#### Jarque-Bera Test Results

Jarque-Bera	Probability	Sig
0.343103	0.842357	0.05

Source: Eviews 21, processed

#### *Autocorrelation Test*

Based on the autocorrelation test using the LM Test with a criterion of  $>0.05$ , which means no autocorrelation is present. The Probability Obs R-squared value of 0.0713  $> 0.05$  can be concluded that there is no autocorrelation in this study.

#### LM Test Results

Obs R-squared	Prob. Chi-Square
5.282405	0.0713

Source: Eviews 21, processed

#### *Multicollinearity Test*

Multicollinearity test in this study uses the Variance Inflation Factor (VIF) test, with a criterion that if the result is  $>10$ , multicollinearity occurs between independent variables. However, if the result is  $<10$ , there is no multicollinearity between independent variables. From the test results in the table below, the VIF values for X1, X2, and X3 are all less than 10 ( $1.449430 < 10$ ,  $2.250592 < 10$ ,  $2.202945 < 10$ ). It is concluded that there is no multicollinearity in the regression model.

#### Variance Inflation Factor (VIF) Test Results

Variable	Centered VIF
X1	1.449430
X2	2.250592
X3	1.717375

Source: Eviews 21, processed

### ***Heteroskedasticity Test***

In this study, the Glejser test is used to detect the presence of heteroskedasticity. With a criterion of  $>0.05$ , it indicates no heteroskedasticity. The Prob. Chi-Square (3) result of 0.1343 is  $>0.05$ , meaning that there is no heteroskedasticity in the independent variables.

Glejser Test Results

Prob. Chi-Square (3)Sig

0.1343 0.05

Source: Eviews 21, processed

Summary and Translation:

The regression results indicate that the data used in this study satisfies the classical assumptions. The normality test using the Jarque-Bera test shows that the data is normally distributed. The autocorrelation test using the LM Test suggests no autocorrelation in the study. The multicollinearity test using the Variance Inflation Factor (VIF) shows that there is no multicollinearity among the independent variables. Finally, the heteroskedasticity test using the Glejser test indicates the absence of heteroskedasticity in the independent variables. These results validate the regression model and suggest that the chosen variables are appropriate for the analysis.

### **CONCLUSIONS AND RECOMMENDATIONS**

The conclusions drawn from the conducted research on the Analysis of the Influence of Open Unemployment Rate, Poverty Rate, and Economic Growth on the Human Development Index in Sleman Regency are as follows:

1. The open unemployment rate has an influence on the Human Development Index in Sleman Regency.
2. The poverty rate has an influence on the Human Development Index in Sleman Regency.
3. Economic growth does not have an influence on the Human Development Index.
4. The variables of open unemployment rate, poverty rate, and economic growth simultaneously influence the human development index.

Based on the analysis and conclusions, the following recommendations are provided:

1. For the Government:

The Sleman Regency Government plays a crucial role in community progress and welfare improvement. It is essential for the government to enhance facilities for the community in terms of infrastructure and other amenities. Additionally, providing education to the community is crucial to shift their mindset away from outdated or primitive thinking.



2. For the Community It is hoped that the people of Sleman Regency can support and actively participate in the programs initiated by the government for progress and welfare.

### **FURTHER STUDY**

Future researchers are encouraged to use this study as a reference and consider adding other variables. Since there are still other variables that influence the Human Development Index (HDI), further research can expand and serve as a benchmark for other researchers.

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