

ANALYSIS OF FACTOR AFFECTING THE HUMAN DEVELOPMENT INDEX (HDI) IN BARLINGMASCAKEB

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Abstract

The process or effort to change something for the better is called development. Social, political, economic, and cultural aspects change during the development process. One of them is by looking at the HDI with three indicators, namely knowledge, health, and decent living standards. This study is to determine the Gross Regional Domestic Product (GRDP), poverty, Life Expectancy Rate (LER), and School Participation Rate (SPR) in BARLINGMASCAKEB (Banjarnegara, Purbalingga, Banyumas, Cilacap, and Kebumen) from 2013 to 2023. This study uses quantitative research type using multiple linear regression analysis of panel data and using the CEM, FEM, and REM model approaches. By using this type of research, it can determine the effect of PDRB, poverty, LER, and SPR on HDI in BARLINGMASCAKEB. The results show that all four independent jointly have a significant effect on HDI. Partially, GRDP has positive effect on HDI. Poverty has a no effect on HDI. Life Expectancy has a positive effect on HDI, and School Participation Rate has a positive effect on HDI. Together, GRDP, poverty, Life Expectancy, and School Participation Rate have an effect on HDI. For the implications regarding HDI in BARLINGMASCAKEB, the government can implement policies to increase economic growth, poverty alleviation, health services, and access to education in BARLINGMASCAKEB.

Keywords: HDI, GDRP, poverty, life expectancy rate, school participation rate

INTRODUCTION

In addition to infrastructure development, human development must also be considered; well-planned human development will help the economy of a country or region. Adam Smith stated in Prihastuti (2018) that human resources play an important role in economic development, where development is the cause of a country's prosperity, with economic scale and human quality as important factors (Ningrum et al., 2020). Instrumental freedom includes political freedom, economic facilities, social opportunities, transparency guarantees, and security protection. To ensure that everyone has the same opportunity to obtain a life sufficient to meet their basic needs, this instrumental freedom is very important. Therefore, development is very important to ensure that every group of people has the same opportunity (Nabila & Utomo, 2023).

The Human Development Index, provided by the United Nations Development Programme (UNDP), shows the level of success of human development. The Human Development Index, or HDI, is a composite index that is the average of the Life Expectancy Index, the Education Index, and the Decent Living Standard Index, which are combined into Purchasing Power Parity. Each region is expected to know its own HDI measurement for planning and evaluation purposes, especially to understand how and where human development outcomes are distributed (Siswati & Hermawati, 2018). The Human Development Index is a composite index that measures three main aspects of

human development: longevity and healthy living (health), knowledge (education), and decent living standards. Therefore, the HDI is used as one of the indicators to describe or show the scale of human development achievements in the economic field, with a specific value ranging from 0 to 100 (Saputro, 2022)

During the implementation of development, high economic growth in terms of GRDP, especially in developing countries, is caused by the close relationship between economic growth and an increase in the number of goods and services produced in society. Thus, an increase in the number of goods and services produced will lead to an increase in the Human Development Index (Imelda et al., 2021). In HDI development, the Gross Regional Domestic Product (GRDP) can also be used as a measure of the amount of value added that can be generated by a region. More prosperous regions will have easier access to education, health care, and a decent standard of living. More prosperous regions will strive to improve quality and quantity in all aspects, especially in terms of basic needs. Thus, the HDI value will be positively correlated with GRDP (Sania et al., 2021).

In addition to GRDP, HDI itself can be affected by poverty. If the poverty line continues to rise and people are unable to fulfill their needs, a vicious circle will form. Low levels of income will lead to a decrease in demand, which in turn will lead to a decrease in investment, which in turn will lead to a decrease in productivity. The decline in income will also cause people to be unable to obtain education, which in turn will result in a population that cannot afford education (Hasibuan et al., 2020). Poverty is not only related to low levels of income and consumption, but also to various issues related to human development, including low levels of education and health, and the inability to participate in development. Poverty can include lack of nutrition, water, housing, health care, and low levels of education (Kiha, 2021).

Apart from the factors of GRDP and poverty, research by Arofah dan Rohimah (2019) found that the health aspect is important and is one of the reasons for improving the development of a country. To improve people's welfare, health is also a goal of human development. LER is the average time a person can survive calculated from birth. One way to assess the government's performance in improving the index of community and economic development is to look at life expectancy, which basically shows the overall condition of a region. The higher the life expectancy, the better the health status of the people in the region (A. L. Ginting, 2020).

One way to measure education in a region is by looking at the School Participation Rate (SPR). The School Participation Rate (SSR) itself is a measure of the percentage of students attending school at a certain age in a country. A higher SPR level indicates that more school-age children are getting education in the country (Nurwidi & Prihayatni, 2023). The combination of demand and supply forces of human development can be considered as an outcome determined by the quality of human resources as seen by the level of education and school enrollment rate (N. M. A. W. Novitasari & Wenagama, 2019).

There is a BARLINGMASCAKEB region in Central Java province. This region consists of five regencies, namely Banjarnegara, Purbalingga, Banyumas, Cilacap and Kebumen. Its name is taken from the name of the regency. The region was once part of the Banyumas Region during the Dutch colonial period. Today, it is still part of Central Java's regional development and planning. In terms of HDI, the Region in BARLINGMASCAKEB has increased every year. However, the BARLINGMASCAKEB Region in HDI is not ranked as the best in HDI.

BARLINGMASCAKEB has a dynamic HDI that reflects the development of the quality of life of the people in the region. As part of Central Java Province, the HDI in the region has been increasing year by year, although there are significant differences between districts in terms of achievements in living standards, education and health. There are differences in the HDI trend in BARLINGMASCAKEB based on the following graph:

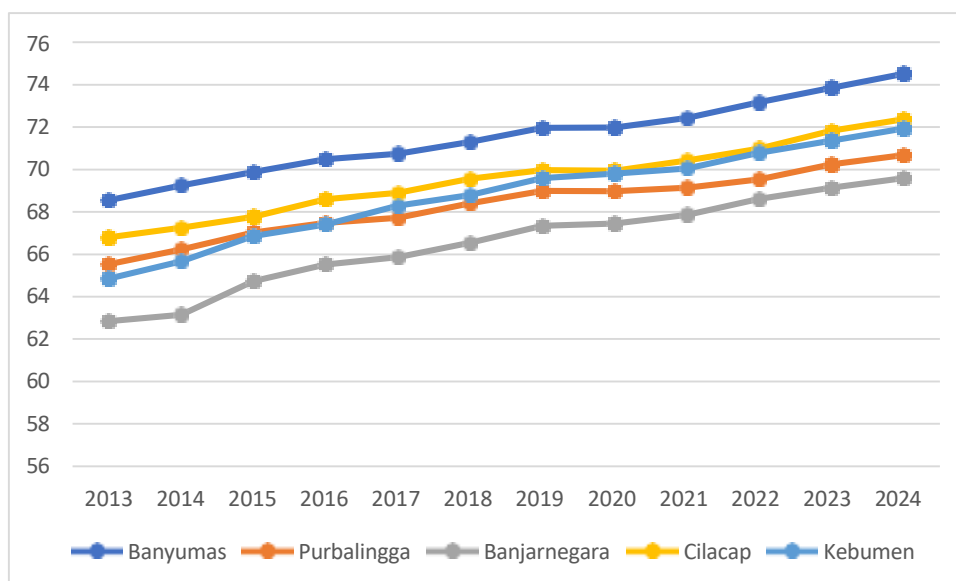


Figure 1. Development of Human Development Index (HDI) in BARLINGMASCAKEB from 2013-2024

In the BARLINGMASCAKEB region itself, the HDI value continues to increase from 2013 to 2024. Figure 1.3 shows that Banyumas has the highest HDI value compared to other regions, while Banjarnegara tends to have the lowest HDI value. Although there are differences and imbalances in HDI growth among regions, in general the HDI is increasing from year to year. Although the trend of HDI growth is increasing in each region, slower growth in some regions indicates that development policies have not been fully successful in addressing disparities between regions. This issue suggests that the development approach should focus more on equity. This includes optimizing social assistance programs, increasing investment in the education and health sectors in low HDI regions, and building infrastructure to accelerate economic growth in lagging regions. If inequalities in human development in BARLINGMASCAKEB are not corrected soon, they could worsen and hamper economic growth and overall well-being. The BARLINGMASCAKEB region shows significant variation in HDI. Kabupaten Banyumas has the highest HDI with 74.52, while Kabupaten Banjarnegara has the lowest with 69.62. This indicates that there are inequalities in human development in this area, which may affect the welfare of the community (BPS, 2024). These inequalities show differences in education, health services and economic well-being, which require improvement.

Research from Hasan (2016), states that GRDP has a positive and significant influence on HDI because GRDP reflects the level of community income which affects purchasing power, access to education services, and living standards in general. The high amount of poverty in some areas has a direct impact on access to education and community welfare, resulting in a decline in the quality of human resources. The study found that poverty status has a negative impact on HDI (Federova et al., 2024). Life expectancy indicates the long-term quality of life of the population, such as access to basic health services, nutritional intake, and environmental conditions that support a longer life. Studies have shown that life expectancy has a positive influence on the long-term quality of life index (HDI) (Federova et al., 2024). The school enrollment rate indicates the number of school-aged children attending school. This can improve the quality of resources in society and can increase the HDI in a region. In Aprilia & Cerya (2023), it shows that the School Participation Rate (SPR) has a positive influence on HDI. This means that the more school-age children attend school, the higher the HDI in a region.

Based on the explanation above, there are still research gaps that need to be bridged regarding the factors that influence HDI, especially in the BARLINGMASCAKEB region. First, there are differences in the results of several studies, for example research conducted by Rontos et al. (2023), with the results showing that GRDP has a positive and significant effect on HDI because GRDP reflects the level of community income that affects purchasing power, access to education services, and

living standards in general. However, other studies such as Yosepa (2018), that GRDP has no significant effect on HDI. Then, research from Federova et al. (2024), the result is that poverty has a significant negative effect on HDI. Another study from Awalia (2024), that poverty has no significant effect on HDI. Research conducted by Federova et al. (2024), shows that life expectancy has a positive effect on the long-term quality of life index (HDI). In the research of Prahasta et al. (2023), partially life expectancy does not have a significant effect on HDI. In contrast to the research of Putra Kusuma & Bendesa (2022), Life Expectancy has a significant positive effect on HDI. Therefore, this study aims to fill the gap by analyzing HDI factors in four main aspects, namely Gross Regional Domestic Product (GRDP), poverty, Life Expectancy Rate, and School Participation Rate affecting HDI in the BARLINGMASCAKEB region.

Some studies find that GRDP has a positive and significant influence on HDI, but others find the opposite. The same applies to the relationship between poverty to HDI, LER to HDI, and APS to HDI. Therefore, further research is needed to find out how much these four variables affect HDI in the BARLINGMASCAKEB region. Based on these phenomena and research gaps, the research question in this study is how do GRDP, Poverty, Life Expectancy, and School Participation Rate affect HDI especially in BARLINGMASCAKEB? In addition, this study aims to analyze the influence on GRDP, Poverty, Life Expectancy Rate, and School Participation Rate on HDI in BARLINGMASCAKEB. This research is expected to increase knowledge about the relationship between human development and economic, social, and health elements. This research contributes to the development of development economics literature by analyzing the influence of various variables such as GRDP, poverty, LER, and APS on HDI. Practically, this research can help local governments in the BARLINGMASCAKEB Region to formulate more data-driven development policies. By understanding the key components that drive HDI, the government can design more focused strategies to improve community welfare, especially with regard to access to education, health services and economic welfare.

LITERATURE REVIEW AND HYPOTHESIS FORMULATION

1. Human Development Theory

Human development is a way of improving options for people themselves (UNDP, 1990). This theory was developed by the UNDP to improve on previous ideas of human capital analysis based on GDP or average per capita income. According to UNDP (1990), because the difference between the rich and the poor tends to be larger, average income does not fully describe the condition of human capital in an area. As a result, people who are considered poor are reported to have higher levels of welfare.

According to Amartya Sen (1988) in his book entitled *Development as Freedom*, development emphasizes not only improving the economy, but also increasing individual freedom in various aspects of life. Freedom plays a role in development in two ways: as an end in itself and as a means to achieve broader development. Various types of "unfreedom" can be eliminated through successful development. These include poverty, hunger, lack of healthcare, and limited access to education.

Capabilities Approach, where a person's well-being is measured not just by income or consumption, but also by their ability to live a life they value. These capacities indicate people's opportunities to live a good life, such as getting an education, getting good health, and being involved in politics and the economy. Therefore, development is carried out with methods that allow people to choose and live a life according to their wishes.

In the process of development, five types of basic freedoms must be expanded:

- a. Political freedom, which includes access to democracy and participation in decision-making;
- b. Economic facilities, which provide employment opportunities and access to economic resources;
- c. Social opportunities, such as health and education services;
- d. Transparency guarantees, which ensure fairness in social and economic systems; and

- e. Protective security, which ensures that everyone is safe. These five freedoms work together to improve one's general well-being.

2. Human Development Index (HDI)

The HDI value of a particular region gives an idea of how far the region has reached predetermined targets, such as a life expectancy of 85 years, access to basic education for all, and expenditure and consumption levels that have reached a decent standard of living. The path that must be taken to achieve the target is getting closer to the regional HDI value that reaches 100 (Putri & Muljaningsih, 2022). For the human development index, the 1990 HDR introduced three dimensions: longevity and healthy life, knowledge, and decent standard of living. The three metrics used to calculate the HDI are Life Expectancy at Birth (UHH), Literacy Rate (AMH), Gross Enrollment Rate (APK), and Gross Domestic Product (GDP) per capita. These represent all three dimensions. The aggregation method is used to calculate HDI using the arithmetic mean method (BPS, 2021). The HDI itself has three main dimensions: knowledge (education), decent standard of living, longevity and health (UNDP, 2019).

The important objectives of using HDI as an indicator of human development are as follows:

- a. Develop parameters to assess fundamental aspects of human development and the extent of freedom of choice;
- b. Using a number of parameters to make the measure easier;
- c. Creating one composite index using a number of basic indices; and
- d. Creating a measure that includes social and economic aspects (Putri & Muljaningsih, 2022).

3. Gross Regional Domestic Product (GRDP)

GRDP is basically the sum of the added value of final (net) goods and services produced by all economic units or all business units in a region. GRDP at current prices shows the value added of goods and services at any time calculated using prices prevailing from year to year, while GRDP at constant prices states the value added of goods and services calculated annually at current prices (BPS, 2024). Three different approaches can be used to calculate GRDP:

- a. The Production Approach, which depicts the total of the value added of goods and services produced by the various units of production in an area over a period of time, generally one year.
- b. The Income Approach, the total rewards received by the elements of production that play a role in the production process in a region over a period of time.
- c. Expenditure Approach, GRDP covers all aspects of final demand from household consumption expenditure and non-profit organizations, government consumption, gross fixed capital investment, changes in stocks of goods, and finally net exports (net exports are exports minus imports) (BPS, 2024).

According to Muliza et al. (2017), the Human Development Index affects the increase in government revenue, and Gross Regional Domestic Product affects economic growth. In addition, these gains can be allocated to human development. With this investment, people will have easier access to quality education and health services. This will allow workers' productivity to increase and they can acquire skills and technological advancements. Therefore, economic growth is one of the important factors in a country's development. The successful development of a region is also judged based on this factor. In terms of human development, an increase in GRDP per capita can offer more choices for people by increasing income. This indicates increased access to education and health services. According to research conducted by Fitria et al. (2024), GRDP had a positive and strong impact on HDI in DKI Jakarta from 2010 to 2023. This supports the idea that economic growth can drive human development, provided it is combined with investment in the social sector and fair distribution.

H₁ *Gross Regional Domestic Product (GRDP) has a positive effect on HDI in the BARLINGMASCAKEB region.*

4. Poverty

Simply put, poverty is defined as a situation where a person or group of people is unable to fulfill their basic rights to live a decent life. This broad description shows that poverty is a problem that has many aspects, making it difficult to measure and there needs to be agreement on the best way to measure it (Badan Pusat Statistik, 2011). In this case, people whose average monthly per capita expenditure falls below the poverty line are considered poor. Susenas Consumption and Expenditure Module data is used to determine the number of poor people (Novitasari et al., 2021).

Various aspects of low living standards include low incomes, inadequate housing conditions, poor health services, and low levels of education. All of these elements contribute to a decline in the quality of human resources and an increase in unemployment. People with low incomes struggle to fulfill their basic needs and find it difficult to obtain good health services. Inadequate housing conditions affect physical and mental health, while poor health services increase the risk of illness and disability. Low education levels also lead to a lack of skills and lack of competition in the labor market. All these factors are interrelated and create a challenging environment for people to improve and maintain quality of life (Muliza et al., 2017).

In human development, poverty is a significant problem because it prevents people from getting proper education, medical care and food. Overcoming poverty is important in human development theory to give people more choices and improve their quality of life. In addition, poverty impacts people's level of prosperity, which cannot be achieved to its full potential. Whereas, the main goal of development is to create welfare and prosperity for the entire community, an increase in the poverty rate in an area will hinder the process of success of these development goals (Wardani Umi & Yoga Kundhani, 2021).

H₂ Poverty negatively affects HDI in the BARLINGMASCAKEB region.

5. Life Expectancy

Life expectancy is a crucial element that relates to a society's ability to determine life expectancy, and reflects the extent to which public health is maintained. It is also influenced by the mortality rate of infants and vulnerable children, as well as maternal deaths during childbirth, which also greatly affect life expectancy. People's health conditions are affected due to lack of nutrition and poor environmental sanitation, which can lead to an increase in the number of deaths. Mortality rates in infants and children under five are closely related to inadequate nutrition, as well as poor environmental conditions, for example the location of septic tanks that are too close to clean water sources (Primandari, 2020).

Life expectancy is an important tool to measure how well the government is improving the overall welfare of society and health levels in particular (Asmawani & Pangidoan, 2021). In addition, the average lifespan of a community or group is measured by LER (Ginting et al., 2023). Life expectancy helps evaluate the quality of life and health of local communities by providing an idea of how long an average person will live in an area. In areas with low life expectancy, health and social development programs such as improved nutrition, environmental health programs, and poverty eradication are needed (Federova et al., 2024).

H₃ Life Expectancy has a positive effect on HDI in the BARLINGMASCAKEB region.

6. The School Enrollment

The school enrollment rate (APS) is calculated by comparing the number of students of a particular school age group enrolled in various levels of education with the total population of school-age children in the corresponding area. APS is expressed as a percent. If the APS in an area is high, it means that many school-age children in the area are attending school. APS is also an important indicator in measuring how easily people access educational facilities, especially for those who are of compulsory school age. The higher the APS, the more school-age children are attending school in an area (Rumbiak et al., 2023).

The number of school-age children still attending school at all levels of education can be calculated using this indicator. In general, APS is divided into three age groups: 7-12 years old indicates primary school age; 13-15 years old indicates junior high school age; 16-18 years old

indicates senior high school age; and 19-24 years old indicates university age. Higher APS levels indicate more school-age children are attending school (MOH RI, 2017).

Research conducted by Aprilia & Cerya (2023), shows that the School Participation Rate (APS) has a positive and significant influence on HDI in districts in West Sumatra Province. The research also correlates with human development, because education is one of the accesses to individual capabilities.

H₄ *The School Enrollment has a positive effect on HDI in the BARLINGMASCAKEB region.*

RESEARCH METHODS

In this study using numerical data analyzed by statistical methods. According to Hardani et al. (2020), quantitative research emphasizes the analysis of numerical data, or numbers, which are then analyzed using appropriate statistical methods. This approach is usually used in inferential research to test hypotheses, and the results of statistical tests can show how significant the relationship being sought is. This study aims to analyze the influence on the independent variables of GRDP, Poverty, LER, and SPR on HDI in BARLINGMASCAKEB, both partially and jointly, using Multiple Linear Regression analysis. This research utilizes secondary data as the type and source of information. The data used comes from the official website of the Central Bureau of Statistics in the Banjarnegara, Purbalingga, Banyumas, Cilacap, and Kebumen regions. The following is a model on the HDI in Barlingmascakeb from 2013 to 2023 by looking at the HDI dependent variable and independent variables such as GRDP, Poverty, Life Expectancy and School Enrollment Rates.

$$HDI_{it} = \beta_0 + \beta_1 GRDP_{it} + \beta_2 POV_{it} + \beta_3 LER_{it} + \beta_4 SPR_{it} + \varepsilon_{it}$$

HDI : Human Development Index (index scale 0-100)

GRDP : Gross Regional Domestic Product (million rupiah)

POV : Poverty (%)

LER : Life Expectancy Rate (years)

SPR : School Participation Rate (%)

β_0 : Constant

$\beta_1, \beta_2, \beta_3, \beta_4$: regression coefficients, showing the magnitude of the influence of each independent variable on HDI

i : Individual

t : Time

ε : Error term, other factors that affect HDI but are not included in the model

This model shows how GRDP, Poverty, LER, and SPR relate to HDI as the dependent variable. By considering the error term (ε) for other factors not included in the model, the regression coefficients ($\beta_1, \beta_2, \beta_3, \beta_4$) will see how much influence each independent variable has on HDI. This study uses CEM, FEM, and REM model testing to determine which model is the best. The model was tested using the Chow Test, Hausman Test, and LM Test.

RESULTS AND DISCUSSION

The BARLINGMASCAKEB region is a regency in Central Java Province. The BARLINGMASCAKEB region consists of 5 regencies, namely Banjarnegara, Purbalingga, Banyumas, Cilacap, and Kebumen. The region is located between 6° 29' to 7° 37' South latitude (LS) and 108° 39' to 109° 45' East longitude (BT). Banjarnegara has potential in the agriculture, forestry and fisheries sectors. Superior products in Banjarnegara include coffee, salak, rice, tilapia, carp, and so on. Unlike Banjarnegara, Purbalingga has the same potential in the agricultural sector. However, the agricultural sector is favored in coconut commodities and coconut products such as coconut sugar. Purbalingga also excels in the tourism and trade sectors. Banyumas is known for its agricultural commodities such as rice, plantation commodities such as coffee, and livestock products. In addition, other sectors in Banyumas include processing industry, tourism, construction and so on. Cilacap has a leading sector in the processing industry in oil refineries and is one of the largest in Indonesia. Other sectors such

as fisheries where Cilacap is close to the south coast. Kebumen has a leading sector in agriculture such as rice and corn. In addition, mining sectors such as lime, iron sand, and limestone exist in Kebumen.

In data analysis, there is a regression test, namely the chow test to determine the best model between the Common Effect Model (CEM) and the Fixed Effect Model (FEM). To show the difference between two regression models by using the F-test statistic to select the Fixed Effect Model (FEM) or the Common Effect Model (CEM), a Chow test is required which will be used to estimate panel data. If the probability value is <0.05 then the best model is FEM. If the probability value > 0.05 then the best model uses the CEM model. In the Chow test results of this study, it shows that the Cross-section Chi-Square probability value is 0.0000 and this value is <0.05 . This means that the best model chosen is the FEM model. The following table shows the results of the Chow test in this study.

Tabel 1. Chow Test Result

Effect Test	Prob
Cross-section F	0,0000
Cross-section Chi-square	0,0000

Source: Data processed, Eviews (2025)

To understand which model is best between the Random Effect Model (REM) or Fixed Effect Model (FEM), the Hausman Test is required to estimate panel data. If the probability value is <0.05 then the best model is FEM. If the probability value > 0.05 then the best model uses the REM model. In this study, the cross-section random probability value is 0.0000. Which means the probability value <0.05 , then the best model is to use the FEM model. The following is the Hausman test table for this study.

Tabel 2. Hausman Test Result

Test Summary	Prob
Cross-section random	0,0000

Source: Data processed, Eviews (2025)

After testing the best model, the next step is to test the classical assumptions. the first is to test for heteroscedasticity. The Glejser test or scatterplot pattern between residuals and independent variables can be used to identify heteroscedasticity. There is an indication of heteroscedasticity that can interfere with the validity of the regression model if the pattern that appears is not random. If the significance value ≥ 0.05 , then there is no heteroscedasticity. But if the significance value < 0.05 , then there is no heteroscedasticity. Prob value. > 0.05 for the variables of GRDP, Poverty, LER, and SPR so it can be concluded that there is no heteroscedasticity in the FEM model. Below is the heteroscedasticity table.

Tabel 3. Heteroscedasticity test

Variabel	Coefficient	Std. Error	t-Statistic	Prob.
C	20,49110	10,48491	1,954342	0,0568
GRDP	-0,029291	0,015026	-1,949371	0,0574
Poverty	-0,040533	0,031122	-1,302408	0,1993
LER	-0,239139	0,138505	-1,726570	0,0910
SPR	-0,015188	0,013703	-1,108370	0,2735

Source: Data processed, Eviews (2025)

Next is the multicollinearity test. This test is used to determine if there is too strong a relationship between the independent variables. Multicollinearity can lead to inaccurate interpretation of results as regression estimates become unstable. The multicollinearity test uses the pairwise correlation method. The criteria for the coefficient value between variables <0.80 , which means there is no correlation between variables. The following is a multicollinearity test table. In this

test, among the independent variables, there is no coefficient value <0.80 , therefore it can be concluded that there is no multicollinearity in this multicollinearity test.

Tabel 4. Multicollinearity Test

	PDRB	Kemiskinan	LER	SPR
PDRB	1,000000	-0,715797	0,074347	0,210642
Kemiskinan	-0,715797	1,000000	-0,586702	-0,151316
LER	0,074347	-0,586702	1,000000	-0,002958
SPR	0,210642	-0,151316	-0,002958	1,000000

The best model selection for this study is Fixed Effect. The following are the estimation results of the Fixed Effect model.

Tabel 5. Model Estimation Results

Variabel	koefisien	t-Statistik	Prob.
C	-184,8920	-9,517151	0,0000
GRDP	0,119414	4,289157	0,0001
POV	-0,099707	-1,729087	0,0905
LER	3,296934	12,84688	0,0000
SPR	0,118652	4,673250	0,0000
Fixed Effects (Cross)			
Banjarnegara-C	-2,524931		
Banyumas-C	2,566894		
Cilacap-C	-3,442240		
Kebumen-C	1,418262		
Purbalingga-C	1,982016		
R-Squared	0,978924		
F-statistik	267,0762		
Prob(F-statistik)	0,000000		

Source: Data processed, Eviews (2025)

The estimation results of the above model with panel data regression using the FEM model obtained the following equation.

Based on the estimation equation above, the following interpretation is obtained.

- The variable regression coefficient on GRDP per capita (X1) has a positive value of 0.119. Which means that every increase in GRDP per capita by 1 million rupiah, it will increase HDI by 0.119
- The variable regression coefficient on poverty (X2) is statistically insignificant
- The variable regression coefficient on LER (X3) has a positive value of 3.296. Which means that every increase in LER by 1 year, it will increase HDI by 3.296
- The variable regression coefficient on SPR (X4) has a positive value of 0.118. Which means that every increase in SPR by 1 percent, it will increase HDI by 0.118

The R2 coefficient of determination is 0.978924. Which means that 97.89% of the HDI dependent variable can be explained by four independent variables, namely GRDP per capita, Poverty, LER, and SPR. While 2.11% is explained outside the model.

The F test is a test to test the joint significance of a regression model (Gujarati, 2003). Based on table 4.12, the F-count value is 267.0762 and the F-table is 2.57. Which means $F\text{-count} > F\text{-table}$. Prob (F-Statistic) value $0.0000 < 0.05$. Which means that H_0 is rejected so that the independent variables of GRDP, Poverty, LER, and SPR together have a significant and significant effect on HDI in the BARLINGMASCAKEB Region

In the t test, to determine the hypothesis or find out whether the independent variable has an influence or not partially on the dependent variable. The number of samples (n) in this study was 50, the number of variables was 5 with an alpha of 5%, so the t table value in this study is 2.010. If $t\text{-count} > t\text{-table}$, then the result is influential. Meanwhile, if the t-count value $\leq t\text{-table}$, then the variable has no effect. The following is a t test table.

Tabel 6. t Test

Variabel	t-hitung		t-tabel	Prob	Sig
GRDP	4,289157	>	2,01	0,0001	0,05
POV	-1,729087	<	2,01	0,0905	0,05
LER	12,84688	>	2,01	0,0000	0,05
SPR	4,673250	>	2,01	0,0000	0,05

- The t-count value is $4.289157 > 2.01$. Which means that the t-count value $> t\text{-table}$. This means that GRDP per capita has a significant effect on HDI. This result shows that H_0 is rejected.
- The t-count value is $-1.729087 < 2.01$. Which means that the t-count value $< t\text{-table}$. It means that poverty has no significant influence on HDI. This result shows that H_0 is accepted.
- The t-count value is $12.84688 > 2.01$. That means the t-count value $> t\text{-table}$, indicating that LER has a significant influence on HDI. This result shows that H_0 is rejected.
- The t-count value is $4.673250 > 2.01$. Indicates that the t-count value $> t\text{-table}$. That means APS has a significant influence on HDI. This result shows that H_0 is rejected.

This study shows that GRDP per capita has a positive and significant effect on HDI. This research is also in line with research from Rontos et al. (2023) which shows that GRDP has a significant positive effect on HDI. Todaro & Smith (2020) state that economic improvement can improve people's welfare. According to Muliza et al. (2017), GRDP can affect economic growth. In addition, the profits from GRDP can be allocated to human development. With this investment, education and good health of the population will be easier to obtain. This will allow workers' productivity to increase and they can acquire skills and technological advancements. From 2013-2023, GRDP in the BARLINGMASCAKEB Region has increased. The average in BARLINGMASCAKEB on GRDP is 23.89 (million rupiah). This makes GRDP in BARLINGMASCAKEB increase every year. HDI can be used to measure the success of improving the quality of human life and the level of development of a country or region (Mongan, 2019). GRDP is a measure that describes the economic growth of a region. The higher the GRDP, the more likely it is that people's welfare will improve, which in turn can result in better living standards, education, and health services.

The results of this study show that poverty has no effect on HDI. This finding is different from the general assumption that high poverty will reduce HDI in a region Todaro & Smith (2020). In the case of poverty in BARLINGMASCAKEB, it has decreased every year from 2013-2023. The average poverty rate in BARLINGMASCAKEB from 2013-2023 was 16.03 percent. The data shows that poverty in BARLINGMASCAKEB has decreased because there are several policies from the government to reduce poverty. Local governments with policies mainly in the fields of health and education. In Banyumas, there are well-known universities, one of which is Unsoed. In addition, there are regional hospitals in each region, especially in BARLINGMASCAKEB. This is also in line with Pritchett (2004) research, which states that improvements in a region's public services have more impact on human development when compared to increases in income. In addition, there is government assistance such as the Healthy Indonesia Card (KIS) and Smart Indonesia Card (KIP) which can help underprivileged people to get education and health and can reduce poverty (Corolina et al., 2021). That means that there are other variables that can affect HDI, such as LER and SPR in the health and education sectors, so poverty has no effect on HDI.

This study shows the results that LER has a positive and significant effect on HDI. This research is in line with the research of Federova et al. (2024) which says that LER has a positive effect on HDI. Another study from Putra Kusuma & Bendesa (2022) confirmed that Life Expectancy has a positive

impact on HDI. The higher the life expectancy in a region, the higher the HDI achieved. This suggests that things that affect a person's health and life expectancy also contribute to improving the quality of life in the area (Meilinna et al., 2023). In addition, the average life expectancy of a community or group is measured by LER (Ginting et al., 2023). From 2013 to 2023, the LER in BARLINGMASCAKEB has increased. The increase in LER can also increase the HDI in the BARLINGMASCAKEB region. From 2013-2023, the LER in BARLINGMASCAKEB amounted to 73.39, which means that the LER in BARLINGMASCAKEB can be said to be quite good and there is an increase. In general, LER reflects the level of health, especially on access to health services and health awareness by the community.

This study shows the results that APS has a positive and significant effect on HDI. This research is also in line with research from Aprilia & Cerya (2023), School Participation Rate has a positive influence with HDI. School enrollment rate (APS) and human development index (HDI) have a positive influence. This can occur due to the important role of education in building a highly competitive society in a particular region or area (Aprilia & Cerya, 2023). APS reflects the level of education especially in a particular region. The more children who go to school and get education, it can improve the quality of resources in the community. Overall, the APS in the BARLINGMASCAKEB region has increased. This proves that APS in an area can increase productivity, which in turn will improve the quality of resources in the community, especially in BARLINGMASCAKEB. APS also reflects that public awareness of the importance of education is getting higher, which indirectly increases APS and later increases HDI in BARLINGMASCAKEB because education is one of the main components in HDI.

CONCLUSION

Based on the results of this study, factors that affect HDI using independent variables such as GRDP, poverty, LER, and SPR can be drawn a research conclusion. GRDP, Poverty, LER, and SPR jointly affect HDI in the BARLINGMASCAKEB Region. This means that HDI is influenced by economic and social variables such as GRDP, Poverty, LER, and SPR. When GRDP increases, Poverty decreases, LER increases, and APS increases, it will increase HDI in BARLINGMASCAKEB. GRDP, LER, and SPR have a positive and significant effect on HDI in the BARLINGMASCAKEB region from 2013-2023. It means that indicators such as welfare, health, and education derived from the independent variables of GRDP, LER, and SPR have a relationship with HDI and can increase HDI in BARLINGMASCAKEB. Poverty has no significant negative effect on HDI in the BARLINGMASCAKEB region from 2013-2023. An increasing or decreasing poverty rate has no effect on HDI. However, there are other variables that can affect HDI in BARLINGMASCAKEB such as health with LER, education with SPR, and welfare with GRDP.

After analyzing, this research will provide implications, especially on the findings of this research. The following are the research implications.

1. Based on the results of this study, the government can increase GRDP per capita if there is a policy. Local government policies can be carried out in various ways such as increasing the potential of superior sectors in each Regency. Kebumen and Banjarnegara with the agricultural sector, Cilacap in the oil and gas processing industry sector, Purbalinga with the processing industry, and Banyumas in the agricultural sector. Sector improvement can create equitable human development. In addition, improvements in education such as building schools and health such as improving water sanitation are also useful for improving the quality of human resources.
2. Based on the findings of this study, the government can reduce poverty to increase HDI, which requires good policies from the local government. These policies include improving community welfare by improving adequate infrastructure. In addition, improving health services such as the National Health Insurance (JKN) and improving health center services. Training the community and providing regional scholarships to underprivileged people can improve the quality of human resources and also to increase HDI.

3. Based on the results of this study, the government can increase LER to increase HDI with good and appropriate policies by local governments. These policies include improving community health centers in the regions. In addition, improving sanitation and access to clean water such as the provision of clean water and communal sanitation can increase LER. Improving health services is also like improving health insurance services for underprivileged people such as the National Health Insurance (JKN).
4. Based on the results in this study, the government can increase SPR to increase HDI with good and appropriate policies. Policies such as increasing regional scholarships so that children can go to school. In addition, digitization training for students to improve learning. The government can also immediately address the handling of children who drop out of school so that these students can return to school again. Equitable distribution of educators such as teachers to places that are remote from the city. In addition, the community can participate in the government's compulsory education program so that children can go to school.

This study has limitations that are expected to be a reference for other studies in the future. The following are the limitations of this research. This study has limited data up to 2023. For 2024, the data is still incomplete, especially on the SPR variable. This study has limitations, especially on the independent variable SPR, whose data is still based on a certain age and has not been averaged for each district / city.

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