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THE INFLUENCE OF HUMAN DEVELOPMENT INDEX, INVESTMENT, AND CAPITAL EXPENDITURE ON ECONOMIC GROWTH IN CENTRAL JAVA PROVINCE

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Abstract

Economic growth in Central Java Province is the lowest when compared to other provinces in Java. This study aims to analyze the effect of human development index, foreign investment, domestic investment, education capital expenditure and health capital expenditure on economic growth in Central Java Province. This study uses secondary data from 35 districts / cities in Central Java Province for the period 2021-2023. The research method uses panel data linear regression with the eviews application. The results showed that HDI and education capital expenditure had a significant effect on economic growth and FDI, DDI and health capital expenditure had no effect and were insignificant to economic growth in Central Java Province. The implication of this study is that local governments must improve the quality of human resources and optimize the allocation of education spending.

Keywords: Economic Growth; Human Development Index; Foreign Direct Investment; Domestic Direct Investment; Education Capital Expenditure; Health Capital Expenditure

INTRODUCTION

Development is a multidimensional process that includes changes in social structures, people's living attitudes, and national institutions to improve the quality of life of the community. Economic growth is one of the measures of the success of a region's economic development (Patta & Zulfikry, 2017). Economic growth is basically defined as an increase *in* output per capita that reflects long-term well-being and provides a variety of options for consuming goods and services, as well as an increase in people's purchasing power. The level of economic activity has increased compared to the previous period, so economic performance has improved (Rahmawati, 2023).

Regional economic growth can be seen from the value of the Gross Regional Domestic Product (GDP). GDP can be calculated by summing up the value of all final goods and services produced by a country over a given period of time. The value of GDP shows the *economic output* of a country as a whole.

Table 1. 2010 ADHK GDP Growth Rate by Province in Java Island 2021-2023 (Percent)

Province	2021	2022	2023	Flat- Flat
Jakarta	3,55	5,25	4,96	4,59
West Java	3,74	5,45	5,00	4,73
Central Java	3,33	5,31	4,98	4,54
IN Yogyakarta	5,58	5,15	5,07	5,27
East Java	3,56	5,34	4,95	4,62
Banten	4,49	5,03	4,81	4,78

Source: Statistics Indonesia, 2024

Based on Table 1, Central Java Province with an average GDP growth rate on a Constant Price (ADHK) basis is in the lowest position on the island of Java during the period 2021-2023, with an average value of 4.54 percent. Meanwhile, the highest economic growth on the island of Java is DI Yogyakarta Province with an average value of 5.27.

The Endogenous Economic Growth Theory developed by Paul Romer and Robert Lucas (1950) emphasizes the quality of human capital through the improvement of science, the utilization of natural resources, the development of technology, and the improvement of economic institutions. According to Romer and Lucas, people with high levels of education and health tend to have better levels of productivity and innovation so that they can increase economic growth (Nurlaili & Sugiharti, 2023). One of the measures of the quality of human capital is *Human Development Index* (HDI) or Human Development Index (HDI) developed by *United Nations Development Program* (UNDP) in 1992.

Table 2. HDI in Central Java in 2021-2023 (Percent)

Year	HDI (Percent)
2021	72,16
2022	72,79
2023	73,39

Source: Central Bureau of Statistics Central Java, 2024

Based on figure 2, the Human Development Index in Central Java Province in 2021-2023 tends to increase every year. In 2021, the HDI of Central Java Province was 72.16, then in 2022 it increased with an HDI value of 72.79, and in 2023 the HDI became 73.39.

The Endogenous Growth Theory, not only emphasizes human capital, but there is an accumulation of physical capital such as investment. Capital stock or investment is one of the important components of economic development and growth. With the addition of capital stock or investment, it can create new jobs, increase *output* and income which will ultimately encourage economic growth. One of the important variables that drive economic growth is foreign direct investment and domestic investment.

Table 3. Realization and Growth Rate of Foreign Investment (FDI) and Domestic Investment (DDI) in Central Java Province in 2021-2023

Year	Realization of PMA (Thousand Dollars)	Growth (Percent)	Realization of PMDN (Million Rupiah)	Growth (Percent)
2021	1.465.9		31.311.180,8	
2022	2.362.0	0,61	24.992.291,6	-0,20
2023	1.563.6	-0,33	32.987.199,8	0,31

Source: Investment Coordinating Board, 2023

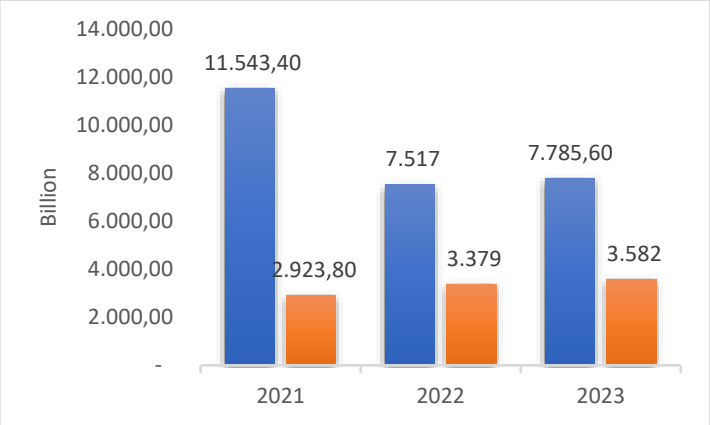
Table 3 shows the realization of FDI and PMDN in Central Java in 2021-2023 in units of thousands of dollars along with growth each year. The highest realization of FDI in Central Java occurred in 2022 with an acquisition of around US$2,362.0 thousand dollars with a growth of 0.61 percent. In 2021, there is no growth because it is used as the base year for calculating the growth of FDI realization every year.

Meanwhile, the realization and growth rate of PMDN in Central Java Province from 2021 to 2023 do not show a significant trend. The highest value of PMDN realization in 2023 is IDR 32,987,199.8 million rupiah. Meanwhile, the highest growth in 2023 was 0.31 percent.

Government spending plays a role as a driver of economic growth (Aryanto & Handaka, 2017), where one of the components of government spending is capital expenditure which is

included in direct spending and produces fixed assets that provide long-term benefits (Gosal *et al*., 2022).

One form of government expenditure to improve the quality of human capital in capital expenditure allocation is education and health spending. Good education and health will encourage increased productivity so that it will cause the economy to grow.



Source : Directorate General of Regional Fiscal Balance, 2023

Figure 1. Realization of Central Java Education and Health Capital Expenditure 2021 – 2023

Figure 1 shows data on the realization of education and health capital expenditure in Central Java in 2021-2023. In 2021, the realization of education capital expenditure reached IDR 11,543.40 billion or 19.46% of the total Central Java APBD while in 2021 the realization of education capital expenditure reached IDR 2,923.8 billion rupiah or 10.99% of the total Central Java APBD.

The novelty of this study compared to previous research is that it combines several factors that are suspected to affect economic growth, namely the Human Development Index (HDI), Foreign Direct Investment and Domestic Investment, Education Capital Expenditure and Health Capital Expenditure on Economic Growth in Central Java Province. This research was conducted because the realization of HDI, Investment and Capital Expenditure tends to increase, but economic growth in Central Java Province is ranked the lowest on the island of Java. The researcher conducted an analysis by combining factors that are suspected to affect economic growth, namely the Human Development Index (HDI), Foreign Direct Investment, Domestic Investment, Education Capital Expenditure and Health Capital Expenditure.

LITERATURE REVIEW AND HYPOTHESIS FORMULATION

Endogenous Economic Growth Theory

In the 1950s, a new theory of economic growth emerged pioneered by Paul Romer and Robert Lucas. This theory is known as the Endogenous Growth Theory or New Growth Theory. Endogenous theory emphasizes the optimization of a country's internal potential, with the main focus on developing human resources (HR) through improving science, utilizing natural resources, developing technology, and strengthening economic institutions.

Gross Regional Domestic Income

According to the Badan Pusat Statistik (BPS), Gross Regional Domestic Product (GDP) is defined as the sum of added value produced by all business units in a region, or the sum of the total value of final goods and services produced by all economic units in a region. There are three approaches that can be used to calculate GDP, namely the production approach, the income approach and the expenditure approach (Yoshanda, 2020).

Human Development Index

The Human Development Index (HDI) is an indicator used to measure the success of human development in a region. According to the United Nations Development Programme (UNDP), HDI covers 3 main dimensions, namely health, education, and economy. The health dimension is represented by the indicator of life expectancy at birth. The education dimension is represented by the indicators of Length of School Expectancy (HLS) and Average School Length (RLS). Economic or standard dimensions. The Human Development Index by UNDP is grouped into 4 (four) categories, namely:

a. Very high HDI: for an HDI value of ≥ 80
b. High HDI: 70 ≤ HDI value < 80
c. Medium HDI: 60 ≤ HDI value < 70
d. Low HDI: HDI value < 60

Investment

Investment is an investment activity in a company with the aim of adding existing capital goods and production equipment to increase the amount of production. Investment can also be interpreted as allocating resources in the long term to obtain profits in the future. There are two categories of investment, namely domestic investment (PMDN) and foreign direct investment (PMA).

1. Foreign Direct Investment
   Based on the Undang-Undang Republik Indonesia Number 25 of 2007 concerning Investment pasal 1 ayat 3, foreign investment is an activity of investing capital to conduct business in the territory of the Republic of Indonesia carried out by foreign investors, either who use foreign capital fully or jointly with domestic investors, or a capital transfer, both real and intangible, from one country to another, the purpose of which is to be used in that country to make a profit under the supervision of the owner of the capital, either in whole or in part.
2. Domestic Investment
   Based on the Undang-Undang Republik Indonesia Number 25 of 2007 concerning Investment pasal 1 ayat 5, Domestic investors are individual Indonesian citizens, Indonesian business entities, the state of the Republic of Indonesia, or regions that make investments in the territory of the Republic of Indonesia.

Capital Expenditure

Capital expenditure is one part of direct expenditure in the State Revenue and Expenditure Budget (APBN) and the Regional Revenue and Expenditure Budget (APBD). These expenses are used to acquire tangible fixed assets that provide benefits over one accounting period or more than one budget year (Rain) *et al*., 2023).

1. Education Capital Expenditure
   Education spending is a type of regional spending that is used to fund the education sector. In Undang-Undang Republik Indonesia Number 20 of 2003 concerning the allocation of education funds, it is stated that education funds in addition to educators' salaries and official education fees are allocated at least 20% of the State Revenue and Expenditure Budget (APBN) in the education sector and at least 20% of the Regional Revenue and Expenditure Budget (APBD).
2. Healthcare Capital Expenditure
   Health spending is a type of regional expenditure that is used to fund the implementation of affairs in the health sector. Based on Undang-Undang Number 36 of 2009, pasal 171 ayat (2) states that the amount of the government health budget is allocated at least 10 percent of the APBD outside salaries.

The Effect of the Human Development Index (HDI) on Economic Growth in Central Java Province

In line with the theory of endogenous growth, a high HDI indicates that a country has made greater investments in human resource development. The investment produces an educated and

skilled workforce so that they are able to produce more goods and services with better quality so as to support economic growth. This is also supported by the research of Pamungkas & Hayati, (2023) which states that the Human Development Index has a positive and significant effect on economic growth in Regencies/Cities in Central Java Province in 2015-2019. Therefore, the following hypothesis can be formulated.

H1a : Human Development Index Has a Positive Effect on Economic Growth in Central Java Province

The Influence of Foreign Direct Investment on Economic Growth in Central Java Province

In line with conventional neoclassical theories and endogenous growth, foreign investment is able to contribute to the expansion of productive economic potential, job creation and a country's income can increase (Rakhmatillo, *et al*. 2021). With FDI, the passion of foreign investors to continue to invest continues to grow and is expected to improve the economy in Indonesia continuously. Winarni *et al.,* (2020) stated that foreign direct investment has a positive influence on economic growth in Central Java. Therefore, the following hypothesis can be formulated.

H1b: Foreign Direct Investment Has a Positive Effect on Economic Growth in Central Java Province

The Influence of Domestic Investment on Economic Growth in Central Java Province

Based on Keynesian theory, increased investment will cause increased income which will later affect GDP growth (Yasa, 2021). The availability of efficient capital can be used as an input factor for the production process which will later create an increase in regional productivity so that it will create economic growth for the region itself. Supported by research by Albasyari & Priyadi, (2023) shows that domestic investment has a significant effect on economic growth in Central Java in 2017-2021. Based on this description, the following hypothesis can be formulated.

H1c : Domestic Investment Has a Positive Effect on Economic Growth in Central Java Province

The Effect of Education Capital Expenditure on Economic Growth in Central Java Province

Based on Wagner's theory, in an economy if per capita income increases relatively government spending. Education has an important role to play in shaping the ability of a developing country to absorb modern technology and to develop capacity for sustainable growth and development. The results of a study conducted by Ri Setia Hutama (2015) say that government expenditure in the education, health and infrastructure sectors has a positive effect on economic growth in Indonesia. Therefore, the following hypothesis can be formulated.

H1d : Education Capital Expenditure has a Positive Effect on Economic Growth in Central Java Province

The Effect of Health Capital Expenditure on Economic Growth in Central Java Province

Government spending in the health sector is an indirect investment provided by the government in increasing human capital. The better the government optimizes the health budget, the better the level of public health nationally. The results of research conducted by Anggraini, (2017) say that government spending in the health sector has a positive effect on economic growth in Indonesia. Therefore, the following hypothesis can be formulated.

H1e : Health Capital Expenditure has a Positive Effect on Economic Growth in Central Java Province

RESEARCH METHODS

Research Design

The type of research conducted in this study uses a quantitative descriptive methodology. The data used in this study is secondary data, which is data obtained indirectly from the original source, such as data obtained from citing books, literature, notes, journals, and other sources that are related and relevant to the research theme. The main data sources used came from the Central Statistics Agency in the form of Central Java ADHK GDP data, Central Java Human Development Index (HDI) data 2021-2023, the Directorate General of Fiscal Balance in the form of data on the realization

of the Central Java Regional Budget for 2021-2023, and the Investment Coordinating Board in the form of data on the realization of PMA & PMDN in Central Java for 2021-2023.

Data Analysis Techniques

The method used is the panel data regression analysis method. Panel data regression is a regression that combines cross section data , namely 35 districts/cities in Central Java, and time series data, namely 2021-2023. This study was conducted to test the influence of human development index, foreign direct investment, domestic investment, education capital expenditure, and health capital expenditure on economic growth. To process the data using the Eviews-12 software. The following equations are used in this study.

$$PDRBit = \alpha + \beta 1IPMit + \beta 2FDIit - \beta 3IDNit + \beta 4BMPit - \beta 5BMKit + \varepsilon it$$

Because there are differences in the units and quantities of free variables in the regression model, the approach used is the natural logarithmic model. Therefore, the regression model in this study uses the form of natural logarithms as follows:

$$LnPDRBit = \alpha + \beta 1IPMit + \beta 2LnFDIit - \beta 3LnIDNit + \beta 4BMPit - \beta 5BMKit + \varepsilon it$$

Where GDP is economic growth (billion rupiah), B1-5 is the coefficient of independent variables, HDI is the human development index (Index), FDI is foreign direct investment (billion rupiah), IDN is domestic investment (billion rupiah), BMP is education capital expenditure (percentage), BMK is health capital expenditure (percentage), α is constant, e is Error Term, i is cross section, t is time series, and Ln is a natural logarithm.

In the analysis of panel data, it is necessary to use the right model in regression. In the regression panel data, there are three models, namely common effect, fixed effect and random effect. Thus, to test the suitability or goodness of the three methods in the estimation technique with the panel data model, the Chow Test and the Hausman Test (Widarjono, 2018) were used. In addition, according to Gujarati (2015), the regression model that produces the best unbiased linear estimator (Best Linear Unbiased Estimator), it is necessary to conduct a test to find out that the resulting regression model meets the requirements of classical assumptions. The elasticity test is used to determine the magnitude of the influence of independent variables on bound variables.

RESULTS AND DISCUSSION

Descriptive Statistical Analysis

The descriptive data in this study used *the* minimum, maximum, mean, median, standard deviation values of each variable.

Table 4. Descriptive Statistical Results

	GDP	IPM	FDI	IDN	BMP	BMK
Mean	10.07940	73.50562	4.815254	6.092642	8.578111	13.44198
Median	10.01900	72.57000	5.163471	6.199616	8.296898	12.38723
Maximum	11.99442	84.99000	9.189829	9.045827	18.04563	51.30867
Minimum	8.781709	66.32000	-1.427116	3.802654	3.327099	2.354176
Std. Dev.	0.621776	4.430778	2.398655	1.121470	2.993019	6.825678

Source: Data processing, Eviews 2025

Based on table 4, it shows that Central Java's GDP has a *mean* value of 10.07940, *a median* value of 10.01900, *a maximum* value of 11.99442, *a minimum* value of 8.781709, and a standard deviation value of 0.621776. The HDI variable has a *mean* value of 73.50562, *a median* value of 72.57000, *a maximum* value of 84.99000, a *minimum* value of 66.32000, and a standard deviation value of 4.430778. The foreign direct investment variable has a *mean* value of 4.815254, *a median*

value of 5.163471, a *maximum* value of 9.189829, *a minimum* value of 3.802654, and a standard deviation value of 1.121470. The domestic investment variable has a *mean* value of 6.092642, *a median* value of 6.199616, *a maximum* value of 9.045827, *a minimum* value of 3.802654, and a standard deviation value of 1.121470. The variable of education capital expenditure has a *mean* value of 8.578111, *a median* value of 8.296898, *a maximum* value of 18.04563, *a minimum* value of 3.327099, and a standard deviation value of 2.993019. The independent variable of health capital expenditure has a *mean* value of 13.44198, *a median* value of 12.38723, *a maximum* value of 51.30867, *a minimum* value of 2.354176, and a standard deviation value of 6.825678.

Panel Data Regression Analysis

Based on the Chow test and the Hausman Test of the three *Common Effect, Fixed effect*, and Random Effect models, the best model to choose in this study is the Fixed Effect Model. However, the output must bear the title of Best Linear Unbiased Estimator (BLUE) or must pass the classical assumption test consisting of multicollinearity and heteroscedasticity tests. In this study, the regression output has been declared to have passed the classical assumption test, so that this regression output can be used.

Table 5. Results of Panel Data Regression Analysis with Fixed Effect

Variable	Coefficient	t-Statistic	Probability
C	4.640547	26.06150	0.0000
IPM	0.074156	29.67588	0.0000***
FDI	0.001074	0.825639	0.4120
IDN	-0.001177	-0.473479	0.6375
BMP	-0.001438	-2.071469	0.0423**
BMK	0.000172	0.580528	0.5636

Remarks : Significance on * : α = 10%, ** : α = 5%, *** : α = 1%
Source : Data processed, Eviews 2025

Based on Table 5, the equation from the results of the panel data regression estimation using *the Fixed Effect Model* is shown as follows.

$$LnPDRBit = 4.640547 + 0.074156IPMit ***+ 0.001074LnFDIit - 0.001177LnIDNit - 0.001438BMPit **+ 0.00172BMKit$$

The HDI variable has a regression coefficient of 0.074156 with a probability value of 0.0000. This shows that the HDI variable has a significant effect on economic growth in Central Java Province. The PMA variable has a regression coefficient of 0.001074 with a probability value of 0.4120. This shows that the FDI variable does not have a significant effect on economic growth in Central Java Province. The IDN variable has a regression coefficient of -0.001177 with a probability value of 0.6375. This shows that the IDN variable does not have a significant effect on economic growth in Central Java Province. The BMP variable has a regression coefficient of -0.001438 with a probability value of 0.0423. This shows that the BMP variable has a significant effect on economic growth in Central Java Province. The BMK variable has a regression coefficient of 0.00172 with a probability value of 0.5636. This shows that the BMK variable does not have a significant effect on economic growth in Central Java Province.

Elasticity Test

The results of the elasticity test in this study are as follows.

Table 6. Elasticity Test Results

Variable	Coefficient (β)	Average X ($\bar{x}$)	Average Y ($\bar{y}$)	Elasticity
IPM	0.074156	73.50562	10.0794	0.5407
FDI	0.001074	(log)	(log)	0.0010
IDN	-0.001177	(log)	(log)	-0.0011
BMP	-0.001438	8.578111	10.0794	-0.0012
BMK	0.000172	13.44198	10.0794	0.0002

Source : Data processed, Eviews 2025

Based on the results of the elasticity of each independent variable, the HDI variable has the greatest elasticity value than other independent variables, which is 0.5407, which means that the HDI variable is the variable that has the most influence on economic growth in Central Java Province in 2021-2023.

The Influence of the Human Development Index on Economic Growth in Central Java Province

Based on the analysis of the panel data regression estimation that has been carried out, the results of the analysis were obtained that H1 was accepted, which means that there is a positive and significant influence of the human development index on economic growth in Central Java Province in the 2021-2023 range. In line with research conducted by Finals & Survival (2023) which shows that the human development index has a positive and significant effect on economic growth in districts/cities in Central Java Province in 2015-2019.

This is in line with endogenous theory which emphasizes the importance of internal factors, namely the role of innovation and human capital in driving long-term economic growth. A high HDI indicates that a region has made greater investment in human resource development. A high level of human development greatly determines the ability of the population to absorb and manage resources both in relation to technology and institutions as an important means to achieve economic growth.

The Influence of Foreign Direct Investment on Economic Growth in Central Java Province

Based on the results obtained through regression analysis, H1 has been rejected, which means that there is no influence and significance of foreign direct investment on economic growth in Central Java Province in 2021-2023. These results are in line with research conducted by Nadzir & Kenda (2023) which states that foreign investment has no effect on economic growth in Indonesia. Based on these results, it is proven that the endogenous theory is true where the endogenous theory emphasizes that human capital is to encourage economic growth rather than physical capital such as investment.

Based on DPMPTSP data, Central Java's investment characteristics are still labor-intensive or *labor intensive* have not moved to the *capital intensive sector*, the development of foreign investment realization in Central Java has decreased in 2023, which is 23.14 trillion rupiah. This decline is due to the decline in foreign investors' interest in investing in Central Java Province, due to the lack of optimal local governments in creating a conducive situation for foreign investors to invest their capital, both in terms of politics and policies that support the development of the investment.

The Influence of Foreign Direct Investment on Economic Growth in Central Java Province

Based on the results obtained from the data regression analysis, the panel showed that H1 was rejected, which means that the PMDN variable did not have a significant effect on economic growth in Central Java Province in 2021-2023. This result is also inconsistent with the theory put forward by Keynes which states that increased investment will have a positive effect on increasing

economic growth and proves that the endogenous theory that emphasizes that human capital has an effect on economic growth compared to physical capital, namely investment.

This is in line with research conducted by Zakaria and Hasbi (2019) where the inverse or opposite results between PMDN and economic growth occur because in an area it has not provided a conducive climate for domestic investors. Based on DPMPTSP data, the realization of PMDN by city and district in Central Java province in 2021-2023 has fluctuated which has led to a lack of investor confidence to invest their capital in Central Java Province. In addition, it is also caused by infrastructure governance factors and communication between entrepreneurs and the government which are still not good.

The Effect of Education Capital Expenditure on Economic Growth in Central Java Province

Based on the results obtained through regression analysis, H1 was accepted, which means that there is a positive influence of education capital expenditure on economic growth in Central Java Province in 2021-2023. This is in line with research conducted by Anggraini (2017), from Nistor *et al.* (2018), Haini (2020), and Swaleheen *et al*. (2019) which states that education spending significantly affects economic growth.

The positive relationship between capital expenditure in the education sector and economic growth means that the government's policy of making a minimum 20% education budget will have an impact on increasing economic growth. This is in accordance with the endogenous theory that formal education is the dominant factor to produce a highly productive society. The better ability of the community will affect its performance in encouraging economic activities and being able to improve economic conditions in a region.

The Effect of Health Capital Expenditure on Economic Growth in Central Java Province

Based on the results obtained through the panel's data regression analysis, H1 has been rejected, which means that there is no significant influence of health capital expenditure on economic growth in Central Java Province in 2021-2023. This result is in line with research conducted by Rotinsulu & Kawung (2018) which states that health sector spending has a negative effect on economic growth.

The existence of a negative relationship between government spending in the health sector and economic growth means that the government's policy of making a minimum 5% health budget will have a downward impact on economic growth. This is not in accordance with the endogenous theory which states that health is a basic need for every human being, without public health it will not produce a productivity for the state because human capital plays a significant role, even more important than technological factors in spurring economic growth. This implies poor health can lower productivity and contribute to underdevelopment in various regions.

The most influential variable among independent variables is economic growth in Central Java Province in 2021-2023.

Based on the results of the analysis of the elasticity test that has been carried out, the HDI variable has the greatest elasticity value among other independent variables such as FDI, IDN, BMP, and BMK which has a very small influence and is close to zero, which means that the HDI variable is the most influential variable on economic growth in Central Java Province in 2021-2023. In line with endogenous theory that emphasizes the importance of internal factors, namely the role of innovation and human capital in driving long-term economic growth. A high HDI indicates that the region has good education, health, and economic quality that can increase productivity in both the service and goods sectors and increase economic growth.

CONCLUSION

Conclusion

Some of the conclusions and findings found are as follows.

1. The Human Development Index has a positive and significant influence on economic growth in Central Java Province for the 2021-2023 period.
2. Foreign Direct Investment has no influence and significance on economic growth in Central Java Province for the 2021-2023 period.
3. Domestic Investment has no influence and is significant to economic growth in Central Java Province for the 2021-2023 period.
4. Education Capital Expenditure has a significant influence on economic growth in Central Java Province for the 2021-2023 period.
5. Health Capital Expenditure has no influence and is significant on economic growth in Central Java Province for the 2021-2023 period.
6. The Human Development Index is the variable that has the most influence on economic growth in Central Java Province in 2021-2023.

Implication

1. Based on the findings of the study, the human development index in 35 districts/cities can increase economic growth in Central Java Province in 2021-2023. The recommendation needed is that the government needs to maintain and increase the HDI level as a key strategy to support sustainable economic growth and overall community welfare.
2. Based on the findings of the research, education capital expenditure in 35 districts/cities can increase economic growth in Central Java Province in 2021-2023. The recommended is that the government more optimize the use of the education budget which is 20% of the state budget, as well as optimize the allocation of education in cities/districts of Central Java Province.

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