

Analysis of the Influence of Economic and Social Infrastructure on Economic Growth in East Java

Muchamad Toha Yudo Pratama^{1*}, M Taufiq²

Faculty of Economics and Business, Universitas Pembangunan Nasional
Veteran Jawa Timur

Corresponding Author: Muchamad Toha Yudo Pratama
tohayudo313@gmail.com

ARTICLE INFO

Keywords: Electricity
Infrastructure, Roads
Infrastructure, Health
Infrastructure, Educational
Infrastructure, Economic
Growth

Received: 15, May

Revised: 22, June

Accepted: 21, July

©2023 Pratama, Taufiq: This is an open-access article distributed under the terms of the [Creative Commons Attribution 4.0 International](https://creativecommons.org/licenses/by/4.0/).



ABSTRACT

This study aims to determine the effect of economic and social infrastructure on economic growth in East Java in the 2008-2022 period. This research approach uses a quantitative approach. By using independent variables, namely the electricity infrastructure variable, the road infrastructure variable, the health infrastructure variable, and the education infrastructure variable and the dependent variable is the economic growth variable. The data analysis technique uses multiple linear regression analysis with the Ordinary Least Square (OLS) model with IBM SPSS 21 as the data processor. The results of my research studies show that electricity, health, and education infrastructure have a positive and significant impact on economic growth, while road infrastructure does not affect economic growth.

INTRODUCTION

National development is a development effort that is carried out continuously in all sectors, including the economic, cultural, social, political, educational, and infrastructure sectors (Purba et al., 2021). An indicator in assessing success in economic development in a country is its economic growth, Success in economic growth can be seen from the growth of GRDP and growth in GRDP per capita (Panama et al., 2019).

Economic growth can be influenced by capital accumulation, which includes investment in land, equipment, machinery, facilities, natural resources, and human resources, both in terms of quality and quantity. In addition, factors such as technological advances, access to information, innovation, self-development skills, and work culture play an important role in driving economic growth. Accumulation of capital is very important to encourage increased productive activities. To support and increase productive activities, it is necessary to carry out complementary investments such as infrastructure development, such as road construction, telecommunications or electricity, education, and health. Investing in strong infrastructure facilitates economic development and contributes to substantial growth (Noguga B, 2022).

According to the world bank, development infrastructure is divided into (1) Economic infrastructure is the development that has physical assets that are used to support economic activities, including public utilities (telecommunication or Electricity), and public works (roads). And social infrastructure is the development that supports basic services and community expertise, including education (schools), and health (hospitals, health centers) (Saputra et al., 2021).

According to (Iskandar & Nuraini, 2019), infrastructure development has two impacts on the economy in a region, namely the direct impact and the indirect impact. The direct impact is that it can increase output with an increase in infrastructure development, while the indirect impact is being able to stimulate economic activity so that it can increase capital for the government and private parties.

Infrastructure development has always been viewed by policymakers as a political tool, expressed through government initiatives and then implemented through public policy. Its main objectives are to reduce disparities and inequalities and promote economic growth. Infrastructure is considered a productive public expenditure because the economy benefits from transport facilities that speed up access to services and expand export markets. In addition, it facilitates market expansion and labor mobility, reduces wealth inequality, increases social welfare, saves time, and reduces the cost of doing business (Cigu et al., 2019).

East Java is a province in Indonesia that is located in the eastern part of Java Island. East Java Province is a province that is one of the centers of Indonesia's economic growth and is also the gateway to the economy of eastern Indonesia. Supported by the availability of local infrastructure and resources, regional economic development has progressed in terms of economic value.

This economic value is manifested in the value of the Gross Regional Domestic Product (GDP) (Muslihatinningsih et al., 2020).

The rate of economic growth in a region can be indicated by the Gross Regional Domestic Product (GDP) (BPS, 2020). The growth in the GRDP figure which seems to always be positive is also shown by the province of East Java.

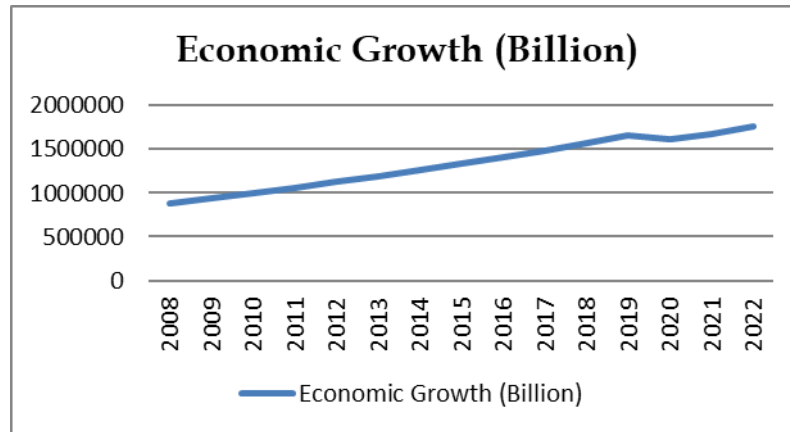


Figure 1. Development of Economic Growth Rate in East Java Province 2008-2022 (billions)

Source: BPS 2023, (processed)

Figure 1 shows that economic growth in the province of East Java in 2008-2022 tends to increase. However, a decrease can be seen in the graph of economic growth in the province of East Java in 2020 of -4.39%, this was due to the COVID-19 pandemic which caused a decline in the regional and national economic sectors due to the imposition of social restrictions.

Economic growth has an influence on the economy of a region by redistributing gross income and increasing output levels. GRDP affects the economy by redistributing gross income and wealth and increasing output levels. (Cornelius & Primandhana, 2022).

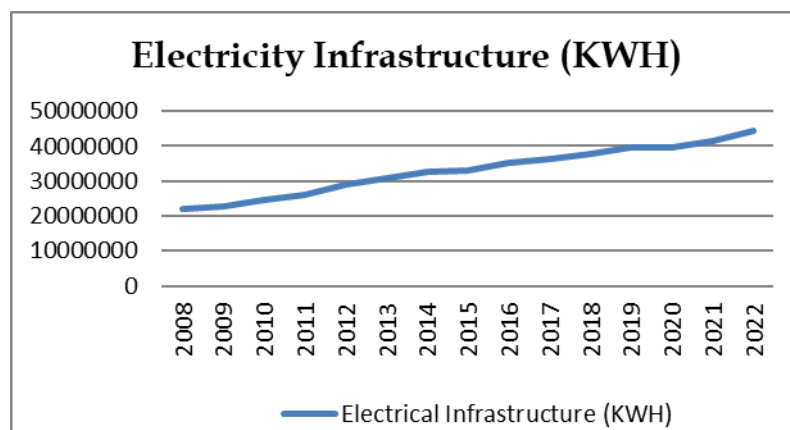


Figure 2. Electricity Infrastructure Development in East Java 2008-2022 (KWH)

Source: BPS 2023, (processed)

Figure 2 shows developments in electricity infrastructure that have increased from year to year. The highest level of availability of electricity infrastructure in 2022 is 42,814,056. support for the household and industrial consumption sectors provides evidence that the availability of electricity infrastructure is increasing from year to year. Electricity can directly or indirectly affect the increase in household and industrial production to maximize output, and electricity infrastructure has a very important role in encouraging various economic activities to improve welfare.

Contribution to the Road Infrastructure sector can be seen in the table for the Length of Roads in East Java in 2008-2022 as follows:

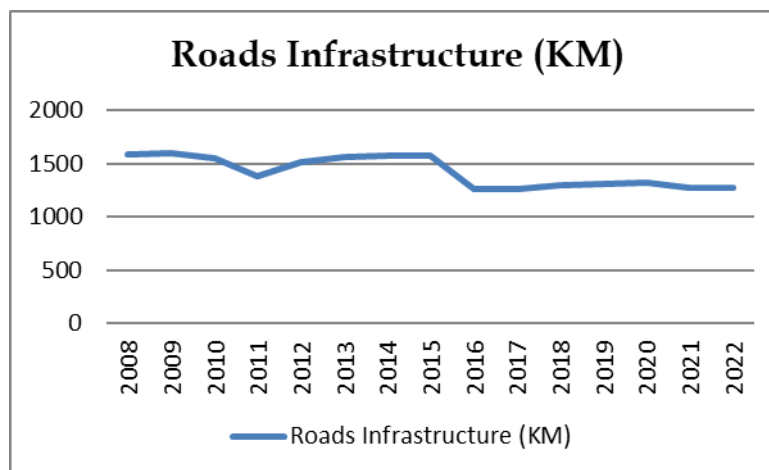


Figure 3. East Java Province Road Infrastructure Development

Source: BPS East Java 2023, (processed)

Figure 3 shows that the length of roads in the province of East Java in 2008-2022 seems to have fluctuated from year to year and has tended to see a decline later this year. This shows that the province of East Java has not prioritized road construction. Road construction in East Java province that is not yet optimal can hamper the distribution of both goods and services from one area to another, so it can affect economic activities that are less than optimal.

According to (Nurhakim, 2019), the role of social infrastructure is no less important than economic infrastructure. Social infrastructure is infrastructure consisting of infrastructure supporting public service facilities. Several service facilities in social infrastructure such as in education in the form of (Elementary Schools, Junior High Schools, and Senior High Schools both private and public) and Health (hospitals and health centers).

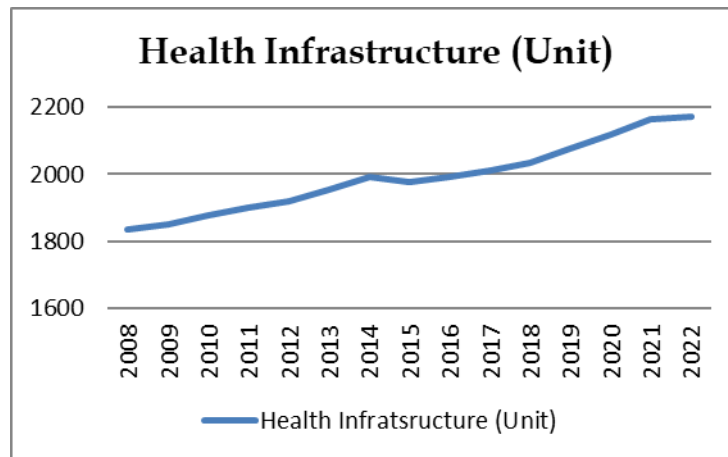


Figure 4. Development of Health Infrastructure in East Java Province 2008-2022 (Units)

Source: BPS East Java 2023, (processed)

Figure 4 above shows that the development of health infrastructure in East Java province has fluctuated and tends to increase. However, the increase in infrastructure development looks not so massive. The development of health facilities that are not optimal has an impact on the people of East Java not getting access to good health. Public health drives the quality of the workforce. A healthy workforce can work more productively in encouraging the production sector so that economic growth in a region can increase.

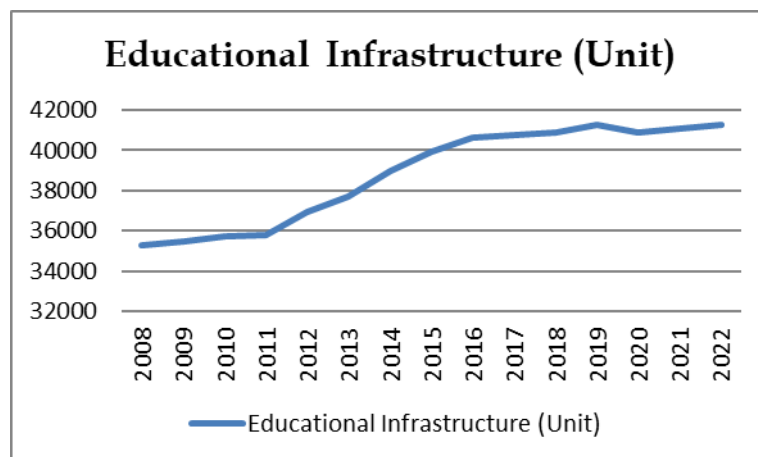


Figure 5. Education Infrastructure Development in East Java Province 2008-2022 (Units)

Source: BPS East Java 2023, (processed)

Figure 5 above shows that the development of educational infrastructure in the province of East Java has fluctuated in the last 5 years, with the highest school infrastructure development in 2022 of 41,254 units. All members of society should be able to enjoy an equitable education. Several government efforts have been made to support educational facilities. The development of

infrastructure facilities is related to developments in the economic growth of a region because it can encourage increased productivity in a region (Sugiarto & Subroto, 2019).

Judging from this explanation, infrastructure development, both economic and social, is a primary public service requirement, so that the availability of infrastructure can support economic activity in an area. Lack of infrastructure capability is one of the factors that result in a high-cost economy. Broadly speaking, the development of economic and social infrastructure has a common thread that is interrelated with economic growth. Adequate and quality infrastructure becomes an investment and has an impact on other sectors in supporting economic activities in the province of East Java. So that researchers are interested in researching **"The Influence of Economic and Social Infrastructure on Economic Growth in East Java Province in 2008-2022"**.

LITERATURE REVIEW

Infrastructure Concept

Definitions of "infrastructure" focus on basic physical structures and "hard" public assets that provide essential services to society. A common distinction is between economic and social infrastructure. Another distinction that is often made is between "physical" and "non-physical infrastructure". (Inderst, 2020). According to World Bank, infrastructure development is divided into (Saputra et al., 2021):

1. Economic infrastructure is the development that has physical assets that are used to support economic activities, including public utilities (telecommunication), and public works (roads).
2. Social infrastructure is the development that supports basic services and community skills, including education (schools), health (hospitals, health centers), housing, and recreation (parks, museums, and others).

Classical Economic Growth Theory

The results show that classical economic theory, which was initiated by Malthus, Ricardo and Smith, implies the importance of proper infrastructure development to initiate economic growth. The classic position is that the state can improve economic growth through various steps aimed at improving the quality of the development of an institution.

Classical economists discuss the dynamics of economic growth in their studies. They see population growth and physical capital accumulation as necessary conditions for economic growth. Capital accumulation is determined by the rate of profit. It creates demand for jobs, stimulates innovation, and enables a division of labor. Increased population leads to increased demand for food, which is characterized by a decrease in production. Innovation spurs growth and breaks the trend of declining returns. Innovations stimulate growth and annihilate the tendency of declining yields. Classics studied value theory and distribution theory to better understand the important economic, political, and social changes that occurred in their time, and also to predict what would happen in the long run in these economies (Cvetanović et al., 2019).

Neo-Classical Economic Growth Theory

Solow is the proponent of neoclassical growth theory. Neoclassical growth theory explains that increases in factors of production, human resources, and technological progress can affect economic growth. The impact of investment, especially in public investment, so that the influence on economic growth cannot be denied. Public investment has a far-reaching impact on economic growth, which is mainly reflected in two aspects: aggregate demand and aggregate supply. aggregate demand and aggregate supply. use of public investment can affect aggregate demand through government spending and while aggregate supply can affect it through optimization of the production function. It is also undeniable that public investment can influence aggregate demand indirectly through the entry of investment from the private sector and aggregate supply by attracting private sector investment capital. (Nguyen & Trinh, 2018).

Neo-Classical theory determines economic growth there are 3 factors, as follows (Intan Suswita et al., 2020):

- a. Capital accumulation is a factor that includes the form of investment that aims to achieve greater income or production in the future such as land, physical equipment, infrastructure development, and improvement in the quality of human resources through education and health
- b. Population growth affects the growth of the workforce. The higher the population means the higher the number of productive forces.
- c. Advances in technology, this factor supports the improvement and development of production quality.

Modern Economic Growth Theory

According to the Harrod-Domar theory, there is a positive correlation between a country's investment activity and economic growth. Investment activity is an important factor affecting the economy in two ways. Investment is positively correlated with government revenue. The simpler the investment process, the more investment activities and higher government revenue. second, the capacity for productivity can be increased through investment by increasing the capital stock. Form capital as expenditures that increase community needs.

The Harold-Dormer theory emphasizes the importance of allocating government revenue to finance damaged assets; the purpose is to promote the economic development of the country. This is why investing as a form of capital is so important. To achieve stable growth, the situation and status of economic entities must have stable expectations and prospects, which will have a positive impact on economic growth (Hanim et al., 2022).

New Economic Growth Theory (New Growth Theory)

The new growth theory is an endogenous growth theory. This theory provides a theoretical framework so that endogenous growth can be analyzed because growth in GRDP is considered as the impact a long-term balance. The new economic growth theory explains that one of the inputs that can affect

aggregate output is optimizing the availability of infrastructure. Infrastructure externalities affect production activities by providing accessibility, convenience, and the possibility to increase the efficiency and productivity of production activities. Infrastructure externalities are called positive externalities caused by infrastructure on the production function. The public sector plays an important role in productive activities. The public sector can be included in the production function because of its important role as one of the production inputs. The role of a productive public sector will create a potential positive relationship between government and economic growth (Husen Amran, 2021).

Theory of Aggregate Demand and Supply

According to (Dyanasari, 2021), aggregate demand is the total amount of spending on goods and services desired by the public. Income in an area can increase when viewed through the aggregate demand side and is influenced by several factors such as consumption, investment, government spending, and import and export. Meanwhile, when viewed from the side of aggregate supply, aggregate supply itself is an offer on the production of goods and services at a certain price and a certain time. Several factors influence changes in aggregate supply, namely making optimal use of resources, the resources needed come from factors of production consisting of capital, labor (human resources), land and technology, and production costs such as increases and decreases in currency abroad and wages.

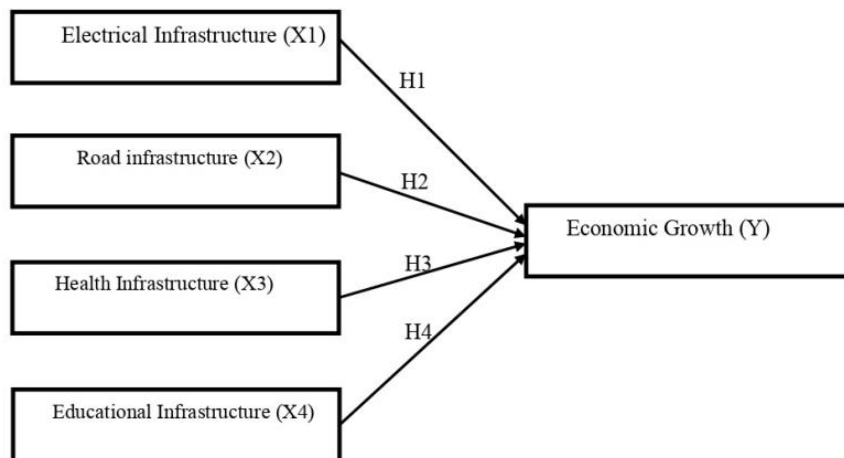


Figure 6. Conceptual Framework

Effect of Electricity Infrastructure on Economic Growth

According to research from (Aldona et al., 2021) and (Dendi, 2021), electricity infrastructure has a positive influence on economic growth. The availability of electricity infrastructure can improve people's welfare, this is because the availability of electricity is used to support various economic activities that have an impact on economic growth. Electrical infrastructure will continue to be needed in economic activities, especially for industries that rely on the technology and machinery sector in carrying out their production

activities, so that the development of electricity, can increase efficiency and increase output (Rahayu & Soleh, 2017).

H1: Electrical infrastructure has a positive influence on economic growth

The Effect of Road Infrastructure on Economic Growth

This is in line with research (Kristian, 2021) and (Divia, 2021) which explain that road infrastructure has a positive influence on economic growth. The presence of road infrastructure will affect economic growth because the availability of road infrastructure provides accessibility and mobility functions as a tool for developing untapped areas and further accelerating areas that are already developing (Iriyena et al., 2019).

H2: Road Infrastructure has a positive influence on economic growth

Effect of Health Infrastructure on Economic Growth

Sharma and Huchet Bourdon ((Kustanto, 2020) argue that health infrastructure is an asset that can improve the quality of human resources. Health infrastructure can support the availability of health services that will increase life expectancy (AHH) in an area. With increasing life expectancy (AHH), labor force productivity increases, and increased work productivity will have a positive impact on economic growth. This theory is in line with research from (Aldona et al., 2021) and (Divia, 2021) which results that health infrastructure has a positive influence on economic growth.

H3: Health infrastructure has a positive influence on economic growth

The Effect of Educational Infrastructure on Economic Growth

According to (Sugiarto & Subroto, 2019) the availability of educational infrastructure can encourage economic growth because educational infrastructure supports learning activities and success in education can be an indicator of the success of a country's development because increased intelligence and quality of society are expected to compete with other countries for global economic growth. This is in line with research conducted by (Kristian, 2021) and (Dendi Nur, 2021) which obtained the result that educational infrastructure has a positive influence on economic growth.

H4: Educational Infrastructure has a positive influence on economic growth

METHODOLOGY

This research approach uses a quantitative approach. By using independent variables, namely the electricity infrastructure variable (X1), the road infrastructure variable (X2), the health infrastructure variable (X3), and the education infrastructure variable (X4), the dependent variable is the economic growth variable (Y).

This research was carried out by researchers covering the East Java region with the data used being secondary data types. Data were obtained from the East Java Central Statistics Agency (BPS) and the East Java Health Office during the 2008-2022 period.

The data analysis technique uses multiple linear regression analysis with the Ordinary Least Square (OLS) model. Multiple linear regression analysis is a method used to determine whether or not there is an influence of the independent variables (X1, X2, X3, X4.....,c) on the dependent variable (Y). Multiple Linear Regression Model Equation:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + e$$

Explanaton:

- Y = Economic Growth
- X1 = Electrical Infrastructure
- X2 = Road Infrastructure
- X3 = Health Infrastructure
- X4 = Education Infrastructure
- β_0 = Constant (Y value if X1, X2, X3, X4 = 0)
- β = Regression coefficient (increasing or decreasing value)
- e = remainder (error)

RESEARCH RESULT

Results of Classical Assumption Test Analysis:

Normality test

Table 1. One-Sample Kolmogorov-Smirnov Test

Variable	Sig	Limit	Explanation
Unstandar Residual	0.200 ^d	> 0,05	Normal

Source: Research Results SPSS 21, 2023

Based on Table 1, it can be seen that the asymp.sig (2-tailed) value is 0.200^d > 0.05 so it can be concluded that the data are normally distributed and the data from this study pass the normality test and can be carried out with further tests. The following are the results of the normality test using the P-P Plot graph:

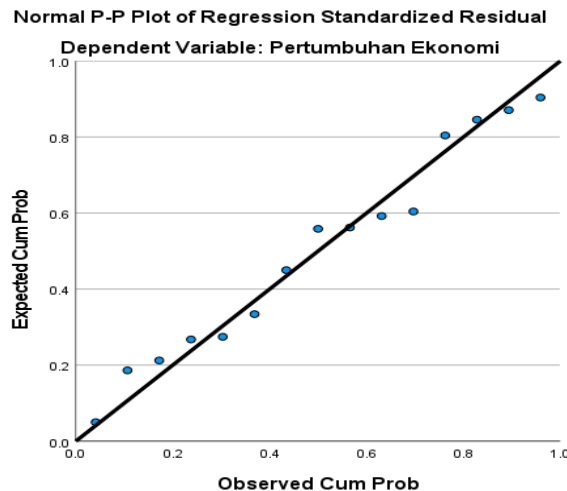


Figure 7. Normal P-P Plot Graph

Source: Research Results SPSS 21, 2023

Based on the chart above, it can be seen that the plotting points in the figure follow and approach the diagonal line, so it can be concluded that the data is normally distributed

Multicollinearity Test

Table 2. Multicollinearity Test

Variable	Tolerance	Provision	VIF	Provision	Explanation
Electricity Infrastructure	0.323	> 0.1	2.675	< 10	multicollinearity does not occur
Roads Infrastructure	0.941	> 0.1	1.063	< 10	multicollinearity does not occur
Health Infrastructure	0.282	> 0.1	2.148	< 10	multicollinearity does not occur
Educational Infrastructure	0.446	> 0.1	2.932	< 10	multicollinearity does not occur

Source: Research Results SPSS 21, 2023

Based on Table 2 it can be seen that the tolerance value > 0.10 or the VIF value < 10 means that multicollinearity does not occur.

Autocorrelation Test

Table 3. Autocorrelation Test

Model	R	R Square	Adjusted R Square	Std. The error in the Estimate	Durbin Watson
1	,997 ^a	,994	,991	,02142	1.832

Source: Research Results SPSS 21, 2023

From the output data above, the results of the analysis for the autocorrelation test in this study obtained a Durbin Watson (DW) test value of 1,832. to find out whether there is an autocorrelation symptom we can prove it by using the DW curve. The equation in this study uses the number of independent variables (k) as 4 and the number of data (n) as 15 so that the DW values obtained are dL: 0.6852 and dU: 1.9774, can be seen in the figure below for the results of the autocorrelation test:

Table 4. Autocorrelation Test

Durbin Watson	DU	DL	4-DU	4-DL	Keterangan
1.832	1.97	0,68	2.02	3,31	There is no autocorrelation

Source: Research Results SPSS 21, 2023

Based on the results of the analysis, the regression model above uses the Durbin-Watson statistical curve to obtain 1.832 in the area between dL and dU, which means that the area is in doubt or there is no autocorrelation.

Heteroscedasticity Test

Table 5. Heteroscedasticity Test

Variable	Sig	limit	Explanation
Infrastruktur Listrik	0.761	>0,05	There is no heteroscedasticity
Infrastruktur Jalan	0.093	>0,05	There is no heteroscedasticity
Infrastruktur Kesehatan	0.076	>0,05	There is no heteroscedasticity
Infrastruktur Pendidikan	0.736	>0,05	There is no heteroscedasticity

Source: Research Results SPSS 21, 2023

Based on Table 4.5 it can be seen that the probability value is greater than 0.05, thus the variables proposed in the study do not occur in heteroscedasticity

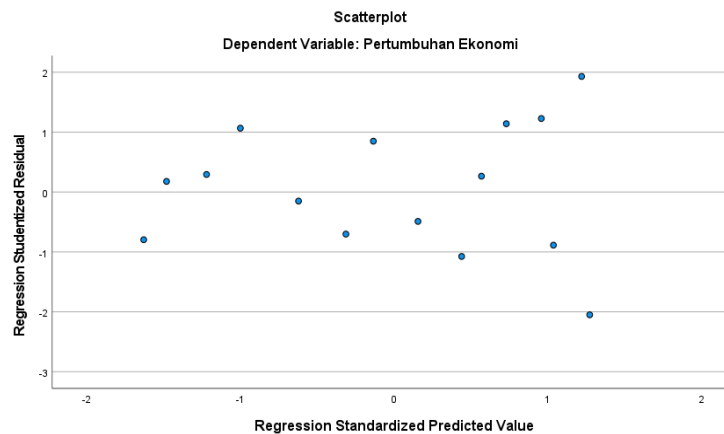


Figure 8. Results of the Heteroscedasticity Test Using Plot Graphs
Source: Research Results SPSS 21, 2023

Based on the scatterplot above, it can be seen that the data points are spread around the number 0, thus the variables proposed in the study do not occur heteroscedasticity.

Hypothesis Analysis and Testing

The Results of Multiple Linear Regression Analysis

Based on multiple linear regression calculations using the SPSS program version 21.0 for Windows, the following results are obtained:

$$Y = -13.941 + 0.428X_1 + -0.042X_2 + 1.254X_3 + 1.080X_4 + e$$

1. $b_1 = 0.428$

This means that if the Electricity Infrastructure variable increases by one KWH, the GRDP growth rate will increase by 0.428 assuming the other independent variables are constant.

2. $B_2 = -0.042$

This means that if the Road Infrastructure variable increases by one KM it will not affect the increase or decrease in economic growth.

3. $B_3 = 1.254$

This means that if the Health Infrastructure variable increases by one Weighted Unit, the GRDP growth rate will increase by 1,254 assuming that the other independent variables are constant.

4. $B_4 = 1.080$

This means that if the Education Infrastructure variable increases by one Weighted Unit, the GRDP growth rate will increase by 1,080 assuming the other independent variables are constant.

Partial Hypothesis Testing (t-test)

The partial t-test was carried out to determine the partial effect between the independent variables and the dependent variable.

1. The results of the significance test show that there is a probability value of $0.035 < 0.05$. This value can prove that H_{a1} is accepted, which means that "Electricity Infrastructure has a positive effect on Economic Growth"
2. The results of the significance test show that there is a probability value of $0.055 > 0.05$. This value can prove that H_{a2} is rejected, which means that "Road Infrastructure is suspected of not affecting Economic Growth"
3. The results of the significance test show that there is a probability value of $0.007 < 0.05$. This value can prove that H_{a2} is accepted, which means that "Health Infrastructure is suspected of having a positive effect on Economic Growth"
4. The results of the significance test show that there is a probability value of $0.030 < 0.05$. This value can prove that H_{a2} is accepted, which means that "Educational Infrastructure is suspected of having a positive effect on Economic Growth"

Simultaneous Testing (F)

From the results of the F test, the F count is 388,970 and the probability is 0.000. Because $\text{sig } 0.000 < 0.05$, it can be concluded that the variables of Electricity Infrastructure, Road Infrastructure, Health Infrastructure, and Education Infrastructure together affect Economic Growth.

Coefficient of Determination (Adjusted R2)

Based on table 3, shows that the coefficient of determination (Adjusted R2) = 0.991, meaning that the variables of Electricity Infrastructure, Road Infrastructure, Health Infrastructure, and Education Infrastructure together affect Economic Growth by 99.1%, the remaining 0.9% are influenced by other variables not included. in research models.

DISCUSSION

The Influence of Electricity Infrastructure on Economic Growth in East Java

The electricity infrastructure variable partially has a positive and significant effect on economic growth in East Java from 2008-2022. According to data from PT. PLN in (BPS, 2018) shows that the community's need for electricity continues to grow every year, both in terms of the number of consumers and the level of electricity consumption (KWH). The number of submissions for new connections, every year also continues to grow. So it cannot be denied that the development of electricity infrastructure is very important in East Java by adding and optimizing development every year at several points in East Java. PLN continues to make various efforts to increase sales of electrical energy by supporting the productive activities of the community through intensification and extensification activities.

The Influence of Road Infrastructure on Economic Growth in East Java

The road infrastructure variable partially has no significant effect on economic growth in East Java from 2008-2022. There is no effect of road infrastructure on economic growth in East Java as a result of the good condition of the quantity and quality of roads in East Java decreasing from year to year so that it can hamper economic activity in East Java and this proves that road infrastructure is not a priority sector in development.

The Influence of Health Infrastructure on Economic Growth in East Java

The health infrastructure variable partially has a positive and significant effect on the economic growth of East Java Province from 2008 to 2022. The positive and significant impact on the development of health infrastructure is evidenced by the annual construction of hospitals and health centers in various regions in East Java. In addition, the COVID-19 pandemic that has occurred in recent years has made the sanitation sector a top priority, the construction of adequate facilities and improvement of sanitation buildings in several areas of East Java can affect the condition of people of productive age in East Java.

The Influence of Educational Infrastructure on Economic Growth in East Java

The educational infrastructure variable partially has a positive and significant effect on the economic growth of East Java Province from 2008 to 2022. Educational infrastructure has a positive and significant impact on East Java's economic growth, as evidenced by the availability of educational infrastructure in East Java which has increased from year to year. The construction of schools in East Java continues to be carried out so that education is evenly distributed in various regions of East Java so that the implementation of the zoning system program and equal distribution of the quality of human resources in East Java is more optimal.

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the above research, the following conclusions can be obtained:

1. Using statistical calculations results in an explanation that electricity infrastructure (X1) has a significant effect on economic growth using the GRDP rate in East Java. This is because the needs of the people of East Java for electricity continue to increase from year to year, both in the number of users and the number of consumers. With the increasing number of electricity consumers each year, the electricity infrastructure must also be accompanied by optimization. There is adequacy in the availability of electrical energy for industry and household players which can ultimately increase economic growth which is manifested in the GRDP growth rate in East Java
2. Using statistical calculations results in an explanation that road infrastructure (X2) does not significantly influence economic growth using the GRDP growth rate in East Java. This is due to the inadequate quality and quantity of roads in East Java and it is also seen that road infrastructure development has not become a top priority. So the road infrastructure is still not able to support economic activities in East Java, optimization of road infrastructure development is very important as a smooth distribution channel of production so that it can affect efficiency and effectiveness in increasing consumers in the area.
3. Using statistical calculations results in an explanation that health infrastructure (X3) has a significant effect on economic growth using the GRDP rate in East Java. This is because the development of health infrastructure continues to be optimized until now, especially during the COVID-19 pandemic yesterday so the health sector is a top priority. Massive health infrastructure development can affect the increase in life expectancy, especially at productive age.
4. Using statistical calculations results in an explanation that education infrastructure (X4) has a significant effect on economic growth using the GRDP rate in East Java. This is because optimizing the development of educational infrastructure continues to be encouraged so that equity and rights as citizens to get a proper education. Optimization of the development of educational infrastructure continues to be carried out every year because it adjusts to the increasing population level so that it can affect the improvement of the quality of human resources in the people of East Java.

ADVANCED RESEARCH

1. The regional government, especially in the province of East Java, can continue to make improvements in both the construction of facilities and infrastructure which in theory can affect increased economic growth. Especially in the management and planning of the budget carried out by the government so that it can better measure and analyze the development that must be optimized to increase regional economic growth, for example

optimizing the development of road infrastructure, which is not only seen from development in terms of quantity but more in terms of quality and maintenance as well. Besides being able to streamline the wasted budget, it can also be considered, especially those that connect to regions that incidentally have strategic economic locations. When viewed from the results of this study, it appears that the increase in road length alone does not have a significant role in economic growth in East Java.

2. Communities should be able to use infrastructure wisely, maintain, care for, and maintain it so as not to reduce the benefits and functions of the infrastructure itself so that the infrastructure built can have direct or indirect impacts.
3. For future research, it is expected to use alternative research variables other than electricity infrastructure, road infrastructure, health infrastructure, and education infrastructure as well as the use of larger secondary data and observation time spans that are expected to be able to generalize research results and provide more comprehensive conclusions and results.

REFERENCES

- Aldona, Y., Primandhana, W. P., & Wahed, M. (2021). Analisis Pengaruh Infrastruktur Listrik, Jalan Dan Kesehatan Terhadap Produk Domestik Regional Bruto Di Kabupaten Sidoarjo. *Eksis: Jurnal Ilmiah Ekonomi Dan Bisnis*, 12(1), 54. <https://doi.org/10.33087/eksis.v12i1.223>
- Cigu, E., Agheorghiesei, D. T., Gavriluță, A. F., & Toader, E. (2019). Transport infrastructure development, public performance, and long-run economic growth: A case study for the Eu-28 Countries. *Sustainability (Switzerland)*, 11(1). <https://doi.org/10.3390/su11010067>
- Cornelius, D., & Primandhana, W. P. (2022). Analisis pengaruh infrastruktur jalan , listrik dan air terhadap produk domestik regional bruto Analysis of the effect of road , electricity and water infrastructure on gross regional domestic product. 19(2), 338–344. <https://doi.org/10.29264/jkin.v19i2.10923>
- Cvetanović, S., Mitrović, U., & Jurakić, M. (2019). Institutions as the Driver of Economic Growth in Classic, Neoclastic and Endogenous Theory. *Economic Themes*, 57(1), 111–125. <https://doi.org/10.2478/ethemes-2019-0007>
- Dyanasari. (2021). *Pengantar Ekonomi Makro (pertama)*. CV BUDI UTAMA.
- Hanim, A., Hermawan, G. B., & Wilantari, R. N. (2022). *Pertumbuhan Ekonomi Indonesia The Effect Of Investment And Technology Development On Indonesia S Economic Growth*. 1, 131–140.
- Husen Amran, dkk. (2021). Pengaruh Pembangunan Infrastruktur Pelabuhan, Infrastruktur Jalan dan Infrastruktur Jembatan terhadap Pertumbuhan Ekonomi Maluku Utara. *Jurnal Poros Ekonomi*, 10(1), 20–34.
- Inderst, G. (2020). Social Infrastructure Finance and Institutional Investors.

SSRN Electronic Journal, September. <https://doi.org/10.2139/ssrn.3556473>

- Intan Suswita, Darwin Damanik, & Pawan Darasa Panjaitan. (2020). Pengaruh Infrastruktur terhadap Pertumbuhan Ekonomi di Kabupaten Simalungun. *Jurnal Ekuilnomi*, 2(1), 1-11. <https://doi.org/10.36985/ekuilnomi.v2i1.346>
- Iriyena, P., Naukoko, T. A., & Siwu, H. F. D. (2019). Analisis Pengaruh Infrastruktur Jalan Terhadap Pertumbuhan Ekonomi Di Kabupaten Kaimana 2007-2017. *Jurnal Berkala Ilmiah Efisiensi*, 19(02), 49-59.
- Iskandar, & Nuraini. (2019). Pengaruh Infrastruktur Publik Terhadap Pertumbuhan Ekonomi di Kota Langsa. *Jurnal Samudra Ekonomika*, 3(1), 57-64.
- Kustanto, A. (2020). Buletin Studi Ekonomi. Vol. 25 No. 1, Februari 2020. *Pertumbuhan Ekonomi Regional Di Indonesia: Peran Infrastruktur, Modal Manusia Dan Keterbukaan Perdagangan*, 25(1), 22-40.
- Muslihatinningsih, F., Walid, M., & Wayan, I. S. (2020). Penyerapan Tenaga Kerja Di Provinsi Jawa Timur (Labor Absorption in East Java Province). *E-Journal Ekonomi Bisnis Dan Akuntansi*, VII(1), 1-6.
- Nguyen, C. T., & Trinh, L. T. (2018). The impacts of public investment on private investment and economic growth: Evidence from Vietnam. *Journal of Asian Business and Economic Studies*, 25(1), 15-32. <https://doi.org/10.1108/JABES-04-2018-0003>
- Noguga B. (2022). *the Effect of Infrastructure Development on Service Delivery*. 5(3), 230-241.
- Nurhakim, R. (2019). *Analisis Pengaruh Infrastruktur Ekonomi Dan Infrastruktur Sosial Terhadap Pertumbuhan Ekonomi Di Priangan Timur 2011-2016*. Universitas Pasundan, Bandung.
- Panama, H., Zuhroh, I., & Nuraini, I. (2019). Pengaruh Infrastruktur Pembangunan Terhadap Pertumbuhan Ekonomi Jawa Timur. *Jurnal Ilmu Ekonomi JIE*, 3(3), 410-420. <https://doi.org/10.22219/jie.v3i3.9545>
- Purba, B., Rahmadana, M. F., Basmar, E., Klara, A., Damanik, D., Lie, D., Fazira, N., Tanjung, R., & Arif, N. (2021). *Ekonomi Pembangunan* (R. Watrionthos (ed.)). Yayasan Kita Menulis. https://books.google.co.id/books?id=LbAfEAAAQBAJ&printsec=frontcover&hl=id&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false
- Rahayu, Y., & Soleh, A. (2017). Pengaruh Pembangunan Infrastruktur Terhadap Pertumbuhan Ekonomi Provinsi Jambi (Pendekatan Fungsi Cobb Douglas). *Journal Development*, 5(2), 125-139. <https://doi.org/10.53978/jd.v5i2.52>
- Saputra, D., Valeriani, D., & Ningrum, C. (2021). Pengaruh Infrastruktur Ekonomi Dan Infrastruktur Sosial Terhadap Pertumbuhan Ekonomi

- Provinsi Kepulauan Bangka Belitung. *Klassen*, 1(2), 111-123. <https://journal.unbara.ac.id/index.php/klassen/article/view/991> <https://journal.unbara.ac.id/index.php/klassen/article/download/991/646>
- Sugiarto, T., & Subroto, W. T. (2019). Pengaruh Infrastruktur Terhadap Pertumbuhan Ekonomi Di Jawa Timur. *Jurnal Pendidikan Ekonomi (JUPE)*, 7(1), 31-37. <https://doi.org/10.26740/jupe.v7n1.p31-37>