Analysis Of The Effect Of Inftrastructure And Popultaion On The Economy Of Java Island

Septriani*

Department of Economic Development, Bengkulu University, Indonesia
septriani@unib.ac.id

Abstract

This study aims to analyze the influence of road infrastructure, electricity infrastructure and population on provincial GRDP in Java. The type of data used in this study is secondary data from the Ministry of Finance and the Statistics Center Agency during the 2016-2021 time period. The method used in this study is panel data regression. Based on the regression result, the best model was obtained, namely the Random Effect Model. Furthermore, the results of this study show that partially the variables of road infrastructure, as well as electricity infrastructure have a positive and significant effect on the Provincial GRDP in Java Island at $\alpha = 5\%$, while simultaneously the variables of roads infrastructure, electricity infrastructure, and population have a positive and significant effect on GRDP at $\alpha = 5\%$. As for the results of the coefficient of determination (R2) test, the Adjusted R-Square value is 0.8414. This result shows that the variables of road infrastructure, electricity infrastructure and population can explain GDP by 84.14 percent while 15.86 percent is explained by other variables outside the model.

Keywords: *GRDP, Road infrastructure, Electrical Infrastructure, Population*

Abstrak

Penelitian ini bertujuan untuk menganalisis pengaruh infrastruktur jalan, infrastruktur listrik dan jumlah penduduk terhadap PDRB provinsi di Pulau Jawa. Jenis data yang digunakan dalam penelitian ini adalah data sekunder dari Kementerian Keuangan dan Badan Pusat Statistik selama periode waktu 2017-2021. Metode yang digunakan dalam penelitian ini adalah regresi data panel. Berdasarkan hasil regresi, diperoleh model terbaik yaitu Random Effect Model. Selanjutnya, hasil penelitian ini menunjukkan bahwa secara parsial variabel infrastruktur jalan, serta infrastruktur listrik berpengaruh positif dan signifikan terhadap PDRB Provinsi di Pulau Jawa pada α=5%, sedangkan secara simultan variabel infrastruktur jalan, inftrastruktur listrik, dan jumlah penduduk berpengaruh positif dan signifikan terhadap PDRB sebesar α=5%. Sedangkan untuk hasil uji koefisien determinasi (R2) nilai Adjusted R-Square adalah 0,8414. Hasil ini menunjukkan bahwa variabel infrastruktur jalan, infrastruktur listrik, dan jumlah penduduk.

Kata Kunci: PDRB, Infrastruktur Jalan, Inftrastruktur Listrik, Jumlah Penduduk

INTRODUCTION

Economic growth is one of the indicators to see the success of economic development and determine the direction of a country's economic development policy in the future. Economic growth is said to be positive if there is an increase in economic activity, while economic growth is said to be negative indicated by a decrease in economic activity (Maharani, 2015). In order to increase economic activities, the existence of infrastructure has a very important role in a country. According to Canning and Pedrioni (2008), the availability of infrastructure is very influential to encourage economic growth, economic development and community welfare in the long run.

As one of the developing countries, currently the State of Indonesia always carries out gradual and planned development without neglecting the principles of equity and stability, especially in carrying out infrastructure development. According to the Ministry of Finance in the publication of information on the 2022 State Budget, infrastructure development is one of the keys to revive sluggish economic activity. In the

short term, infrastructure development becomes the driving force of the economy from the demand side through job creation and consumption. Meanwhile, in the long run, infrastructure development has a contribution on the supply side through increasing production capacity, improving the flow of goods and services so as to create economic efficiency. In this case, infrastructure is an important aspect as a cog of economic growth and development, without the support of adequate infrastructure a country's economic activity will not run optimally. In addition, according to Prannesy (2015), in an effort to improve the economic development of a region, one of them is largely determined by the quality and quantity of infrastructure. According to Soebagiyo (2007), the success of economic development can be judged from the large growth rate of Gross Domestic Product (GDP). Based on data obtained from the Central Statistics Agency (2021), Java Island is the island that contributes the largest to Indonesia's GDP compared to other islands. The comparison of each island's contribution to GDP can be seen in the following graph.
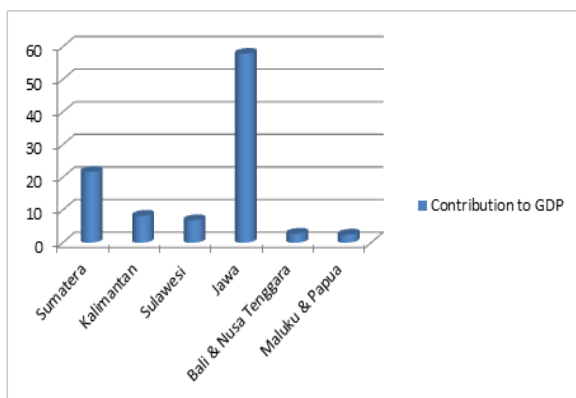
Graph 1. Contribution to Gross Domestic Product (GDP) by Island in Indonesia
Source: Central Bureau of Statistics in 2021 (data processed)

The high contribution of Java Island to GDP shows that Indonesia's economic structure until now is still spatially dominated by provinces in Java. In this case, provinces in Java Island contribute the largest to Indonesia's GDP every year with an average contribution of 58.52 percent when

compared to other islands in Indonesia, then Java Island is the island that contributes the most to the Indonesian economy. This is not comparable to the percentage area of Java Island which is only about 6.77 percent of Indonesia's land area. The results of this data show that national economic activity is still concentrated on the island of Java. This is because the concentration of development on the island of Java is much stronger than in other regions. Differences in development in each region cause differences in economic output produced. One of the differences comes from the infrastructure owned by each region. The development of infrastructure in Java Island can be seen in the following chart.
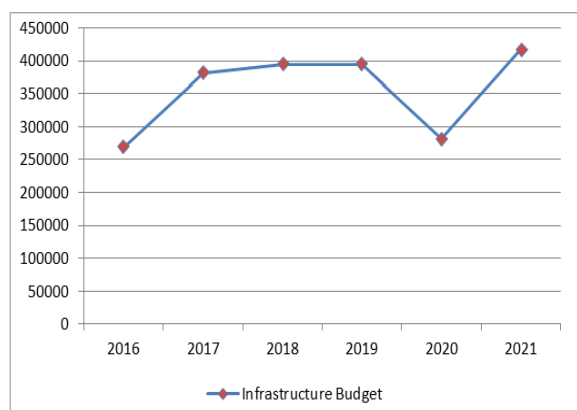

Graph 2. Indonesia's Infrastructure Budget 2016-2021
Source : Ministry of Finance, 2021 (data processed)

Based on Table 1, it can be seen that GDP and infrastructure budget issued by the government always increase from year to year. However, the percentage increase in the budget is much higher than the percentage increase in economic growth. In fact, the larger the infrastructure budget, it is expected to have a significant impact on the economy. According to the Ministry of Public Works and Public Housing (PUPR), through PUPR Minister Basuki Hadimuljono said the infrastructure development that has been carried out has contributed to Indonesia's economic growth and increased national competitiveness. Improving the quality and quantity of infrastructure is expected to

accelerate economic development, improve community welfare and so that economic activities will run efficiently.

The economic condition of each region can also be seen from the value of Gross Regional Domestic Product (GDP). The measure of GDP value is the value of goods and services produced by a region in a certain year using production factors owned by the region. The GDP value will show the level of development of each of these regions. The development of GRDP on the basis of constant hagra based on Provinces in Java Island in 2016-2020 can be seen in the following chartThe economic condition of each region can also be seen from the value of Gross Regional Domestic Product (GDP). The measure of GDP value is the value of goods and services produced by a region in a certain year using production factors owned by the region. The GDP value will show the level of development of each of these regions. The development of GRDP on the basis of constant hagra based on Provinces in Java Island in 2016-2020 can be seen in the following chart.
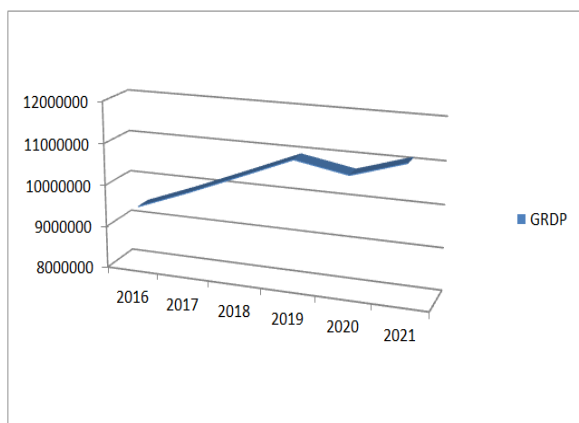
Graph 3. Development of GDP Basic Constant Price (Billion Rupiah) On Provinces in Java Island in 2016-2020
Source: Central Bureau of Statistics in 2021 (data processed)

Economic performance in Java during 2016 to 2020 as measured by GDP on the basis of constant prices in 2010 continues to increase from year to year. When viewed based on the amount of GDP, the GRDP of each province in Java tends to vary. According to the solow growth model theory, the difference in the value of GRDP in each province on the

island of Java cannot be separated from various influencing factors including physical capital stock, human capital, natural resources, and technological knowledge. In this case, infrastructure is a form of physical capital.

Java Island has an area of 6.77 percent of Indonesia's total land with a population of 56.09 percent of Indonesia's total population. This has had an impact on increasing the need for community infrastructure in Java. Some of these infrastructures include road infrastructure, electricity infrastructure. This road infrastructure is used to offset the population explosion that can cause problems in land transportation traffic in addition to supporting smooth economic activities. In addition, people's need for electrical energy both in big cities and rural areas is also very large. This is because the economic sector of Java Island is dominated by the industrial sector, therefore the need for electrical energy in the production process must be met. In addition, in recent years, Indonesia has focused on building infrastructure in various regionsJava Island has an area of 6.77 percent of Indonesia's total land with a population of 56.09 percent of Indonesia's total population. This has had an impact on increasing the need for community infrastructure in Java. Some of these infrastructures include road infrastructure, electricity infrastructure. This road infrastructure is used to offset the population explosion that can cause problems in land transportation traffic in addition to supporting smooth economic activities. In addition, people's need for electrical energy both in big cities and rural areas is also very large. This is because the economic sector of Java Island is dominated by the industrial sector, therefore the need for electrical energy in the production

process must be met. In addition, in recent years, Indonesia has focused on building infrastructure in various regions. The Indonesian government issued a number of policies in implementing infrastructure development throughout the region. Infrastructure development programs carried out by the government are currently contained in Law Number 18 of 2020 concerning the National Medium-Term Development Plan (RPJMN) 2020-2024 as part of the National Long-Term Development Plan (RPJMN) 2005-2025 (KemenPUPR, 2021).

Infrastructure development is one of the important and vital aspects to accelerate the process of national and regional development. The rate of GDP and investment of a country or region cannot be separated from the availability of infrastructure. Infrastructure development is the foundation of sustainable economic development. The increase in infrastructure and its improvement by the government is expected to spur GRDP in each region (Putro, 2010). In supporting infrastructure development, the government conducts policies through government spending. Government spending plays a role in capital formation through government spending in areas such as facilities and infrastructure. Capital formation in the field of facilities and infrastructure is generally a social overhead capital that is very important in economic development. (Safira et al, 2019). The results of Dewi's research (2021) show that the existence of electricity and road infrastructure has a positive and significant influence on increasing Indonesia's GDP in the long term, then electricity and road infrastructure has no effect on GDP in the short term. The role of health infrastructure is to grow productive human resources with adequate abilities, knowledge, and skills so that they are able to innovate continuously in facing the times and are a determining factor in increasing productive capacity, thus

providing a boost to economic growth (Hardianto, 2017).

Infrastructure development is one of the important components in increasing economic growth through GRDP in a region. This is also supported by government policy contained in Law Number 18 of 2020 concerning the 2020-2024 National Medium-Term Development Plan (RPJMN) whose development direction focuses on infrastructure. In this case, the Indonesian government has spent a very large budget in infrastructure development. Therefore, Java as the island that contributes the most to Indonesia's GDP, shows that the economy of Java Island is the most advanced economy when compared to the economy on other islands. With this phenomenon, it becomes interesting to conduct a scientific study on whether there is an influence of infrastructure development on the economy in Java, so that later it can be used as evaluation material for the government in determining development policies in the future with this phenomenon, it becomes interesting to conduct a scientific study on whether there is an influence of infrastructure development on the economy in Java, so that later it can be used as evaluation material for the government in determining development policies in the future.

METHOD

The type of research in this study is quantitative descriptive. This study uses secondary data in the form of panel data which is a combination of time series data and cross section. The data collected consists of GRDP on the basis of constant prices, road infrastructure, electricity infrastructure and the number of population in the Provincial Government on Java Island during 2016-2021. The research data was sourced from publications conducted by the Central Bureau of Statistics Indonesia, Ministry of Finance of the Republic of Indonesia,

Ministry of Public Works and Public Housing.

The analysis method used in this study is panel data regression analysis. Statistically, panel data regression models can be expressed in the form of the following equation:

$$GRDP_{it} = \alpha + \beta_1 ROI_{it} + \beta_2 ELI_{it} + \beta_3 POP_{it} + \varepsilon_{it}$$

Dimana :

GRDP : Gross Regional Domestic Product
α : Konstanta
$\beta_1, \beta_2, \beta_3$: Regression coefficient of the independent variable
ROI : Road infrastructure (km)
ELI : Electrical infrastructure (gwh)
POP : Population
i : Province
t : Time
ε : error term

To determine the best model between the common effect model (CEM), fixed effect model (CEM) and random effect model (REM), several tests were carried out, including the chow test, hausman test and lagrange multiplier test. The next stage is to conduct statistical testing consisting of F test, t test and coefficient of determination (R2).

RESULTS AND DISCUSSION

Result

In panel data model research, there are 3 tests to determine the best model between the common effect model, fixed effect model, and random effect model. The three tests include the chow test, hausman test, and lagrange multiplier test. Based on the chow test, it is used to choose which model is the best between the common effect model or fixed effect model with an alpha confidence level of 5 percent. The results of the chow test can be seen based on the following table.

Table 1. Chow Test Results

Effects Test	Statistic	d.f.	Prob.
Cross-section F	332.138444	(5,27)	0.0000
Cross-section Chi-square	148.870097	5	0.0000

Source : Secondary data (processed, 2022)

Based on the chow test table, it can be seen that the probability value of cross-section F is 0.0000 smaller than α=5%, which means that H1 is accepted and H0 is rejected. Then the best model to use is the fixed effect model. Therefore, enter the next stage, namely the hausman test, which is to test to choose which model is the best between the random effect model or fixed effect model. Based on the results of the hausman test with an alpha confidence level of 5% (0.05), the following results were obtained.

Table 2. Hausman Test Results

Test Summary	Chi-Sq Stat.	Chi-Sq. d.f.	Prob.
Cross-section random	0.995857	3	0.8023

Source : Secondary data (processed, 2022

Based on the results of the hausman test, it can be seen that the results of random cross-section are 0.8023 smaller than α=5%, which means H0 is accepted and H1 is rejected, so the best model to use is the random effect model. Therefore, it is necessary to test the lagrange multiplier to determine the best model between the Common Effect Model and the Random Effect Model. Based on the results of the lagrange multiplier test with an alpha confidence level of 5 percent, the following results were obtained.

Table 3. Lagrange Multiplier Test Results

| | Test Hypothesis | | |
	Cross-section	Time	Both
Breusch-Pagan	79.25480	3.341189	82.59598
	(0.0000)	(0.0676)	(0.0000)

Source : Secondary data (processed, 2022

Based on the langrange multiplier test table above, it shows that the result of both values in food breuch- is 0.000 less than α=5%, which means H0 is rejected and H1 is accepted. So the best model to use in this study in this study is the random effect model. Based on the selection of models between the common effect model (CEM), fixed effect model (FEM), and random effect model (REM) through the chow test and hausman test, the most suitable model for this study is to use the random effect model (REM). The results of regression data are seen in the following table:

Tabel 4. Hasil Regresi Data Panel Model Random Effect

Var.	Coeff.	S. E	t- Stat.	prob.
C	-8451997	213889.7	-0.395157	0.6953
ROI	84.74197	14.40256	5.883819	0.0000
ELI	34.77815	4.287951	8.110668	0.0004
POP	-0.001161	0.008089	-0.143587	0.8867

R-squared : 0.855071
Adj. R-Square: 0.841484
F-statistic : 62.93242
Prob(F-statistic) : 0.000000

Source : Secondary data (processed, 2022

Berdasarkan hasil pengujian pada Tabel 1 maka diperoleh persamaan sebagai berikut:

$$GRDP_{it} = -8451997 + 84.74197 * ROI + 34.77815 * ELI - 0.001161 * POP$$

In this study, hypothesis testing was carried out consisting of a coefficient of determination test (R2), F test and t test. As for the results of the coefficient of determination (R2) test, the Adjusted R-Square value is 0.8414. This shows that the variables of road infrastructure, electricity infrastructure and population can explain GDP by 84.14 percent, while 15.86 percent is explained by other variables outside the model. Meanwhile, based on the F test, the F-statistic probability value of 0.000000 is less than α (0.05). This shows that road infrastructure, electricity infrastructure and population have a positive and significant effect on GDP at α=5%. Then based on the t test, it was obtained that the road infrastructure has a t-statistical value of 5.883819 with a probability of 0.0000 less than α (0.05), so that H0 is rejected and H1 is accepted. This result shows that partially road infrastructure has a positive and significant effect on the GDP of Provinces in Java Island at α=5%. For electrical infrastructure variables, a t-statistic value of 8.110668 is obtained with a probability of 0.0000 less than α (0.05), so H0 is rejected and H1 is accepted. This shows that partially electricity infrastructure has a positive and significant effect on the Provincial GRDP in Java Island at α=5%., while in the population variable, a t-statistic value of -0.143587 is obtained with a probability of 0.8867 greater than 0.05, so that H0 is accepted and H1 is rejected. This shows that the population does not affect the provincial GDP in Java at α=5%.

Discussion

Based on the results of the regression random effect model, it shows that road infrastructure in steady condition has a prob value of 0.0174 and a coefficient of 0.125, meaning that if road infrastructure increases by 1 percent, then GDP will increase by 0.125 percent. Based on these results, it can be stated that road infrastructure has a significant positive effect on GDP. This result is in accordance with the hypothesis where road infrastructure has a positive and significant effect on provincial GRDP in Java, The results of this study are in line with Dewi (2021) which states that road infrastructure has a positive and significant effect on GRDP in Indonesia. The same results are also shown by research conducted by Arumsari and Naidah, et al (2020), which states that the length of roads in good condition has a significant positive impact on GRDP on the island of Sulawesi. Likewise, the results of research by MS Yanti et al

(2018) found that increasing the length of roads in good condition had a positive and significant impact on the growth of GRDP in Gowa Regency. According to Wahyuni (2009), road length has an important role in economic activities. The distribution of production factors as well as goods and services produced is highly dependent on the existence of road infrastructure. Spatially, human mobility and production results will determine the progress of a region because interaction and openness with other regions increase market share of both production factors and production output. Furthermore, according to Nurjanah and Subiyakto (2007), road infrastructure plays an important role in the distribution process of goods and services. Infrastructure functions as a liaison between regions. In this case, the better the quality of road infrastructure, the easier access to the location, so that it will accelerate the flow of goods distribution to the destination area. This also has an impact on saving the cost of transporting goods and services that must be paid. Based on research data, it shows that DKI Jakarta province has the longest steady condition road and also has a GRDP value that ranks highest when compared to other provinces on the island of Java, because good road conditions will facilitate mobility, productivity, and economic activity so that it will be able to increase GRDP. Meanwhile, DI Yogyakarta, which has the lowest steady road length, has a low GRDP value. In the economic theory of the solow growth model, it is explained that the increase in output of a region in the long run is influenced by the high investment and quality of the amount of physical capital, human capital and technology in a country or region, with the increase in these factors of production, the output of the region will increase. In this case, road infrastructure is included in the physical capital. The results of research that have been conducted show that the high physical investment in the form of road infrastructure can increase the output of GDP in Java Island.

Meanwhile, based on the results of the regression random effect model shows that the electricity infrastructure sold has a prob value of 0.0000 and a coefficient of 0.934 means that if the electrical energy sold increases by 1 percent, the GDP will increase by 0.934 percent. Based on these results, it can be stated that electricity infrastructure has a significant positive effect on GDP. This result is in accordance with the hypothesis where electricity infrastructure has a positive and significant effect on provincial GDP in Java. The results of this study are in line with the results of research found by Placencia (2022) which states that electricity infrastructure has a positive and significant effect on GRDP in provinces in the special autonomous region of Indonesia. Similar results were also found in a study conducted by Amalia (2019) whose research results stated that electricity infrastructure had a positive and significant effect on GDP in provinces in Indonesia.

Basically, electrical energy that affects economic growth is electrical energy used for economic activities that are directly related to the formation of GDP such as in the industrial sector. If the industrial sector increases, employment will increase which will then increase the level of public consumption, and ultimately will have an impact on the economic growth of the region. This is because the industrial sector (factory) will directly contribute to economic growth on the island of Java, because one of the important factors in industry (factory) is electrical energy so that it can drive machinery or technology used in the production process. Research by the African Development Bank states that the largest cost incurred by most companies in Sub-Saharan Africa is the cost of electrical energy because the available electricity infrastructure has not met all electricity needs, so companies have to incur additional costs that are more expensive for backup energy (Richard Agenor and Blanca, 2006). So it can be said that electricity has an important role in production activities.

The economic structure in Java Island itself until now is very dominated by the processing industry sector, therefore the need for supply of electrical energy is needed in the production process so that it will be able to increase GDP. Based on data from BPS (2020) that the average contribution of the industrial sector to GDP in provinces on the island of Java is quite high, West Java at 40.47 percent, Banten with 33 percent, DIY Yogyakarta 17 percent, DKI Jakarta 12 percent, East Java 34 percent, East Java 30 percent. This shows that electrical energy has a crucial role as the main driver of industrial activities for production activities to have a considerable influence on increasing GDP. As stated in the economic theory of the solow growth model that the increase in output in the long run is influenced by the high investment and quality of the amount of physical capital, human capital and technology in a country or region, with the increase in these factors of production, the output of the region will increase. In this case, the electricity infrastructure is included in the physical capital. The results of research that have been conducted show that the high physical investment in the form of electricity infrastructure can increase the output of GDP in Java Island. Local government capital expenditure greatly affects Regional Original Revenue. Septriani *et.al* (2020) said that increasing local government activities in capital expenditure can improve the quality of public services and stimulate the community to actively participate in development activities and carry out their obligations to the regions. According to Septriani (2023), in an effort to meet the needs of basic service facilities and infrastructure, the community urgently needs a certain amount of budget derived from transfer funds, namely the Special Allocation Fund.

Furthermore, for the population variable, based on the results of the t test, a t-statistic probability value of 0.8867 was obtained. This probability value is greater than α=5%. This result shows that the population does not affect the GDP of the Province in Java. This is due to problems in employment. In theory, large population growth will have a positive impact on the economy, especially in terms of the availability of labor that can be empowered to produce goods and services. However, the problem is that population growth results in an increase in the labor force, but on the other hand the growth of the labor force is faster than the growth of employment opportunities. As a result, many people are unemployed. Therefore, the high population in Java does not have a significant impact on the Provincial GRDP in Java Island.

The things that affect the amount of demand for labor include wages or salaries. The higher the wage level, the demand for labor will decrease. This is due to the company's ability to pay its obligations. If this happens, then to keep maximizing profits, the company will reduce the number of its workforce. This is very influential on small-scale businesses that have a lot of limited capital. But on the other hand, this increase in wages also has an impact on increasing labor productivity, so that the products produced will be more abundant and of higher quality. Then in the end it will affect product competitiveness and will increase company profits. According to Nurmayanti, et al (2020), the main problem of employment in Java lies in unemployment. In research by Nurmayanti, et al (2020), it was found that the level of education affects the application of labor. provincial minimum wage (UMP).

The results of this study are in line with the results of Zakaria's research (2022), which also found that the population has no effect on the GRDP in Banten Province. Meanwhile, the results of this study are different from the results of research by Tumaleno and Riazis (2022), Yuliansyah (2018), Prasetyo *et.al* (2023), Sari and Bustaman (2022), which found that population affects GRDP.

CONCLUSION

Based on results of this study show that partially the variables of road infrastructure, as well as electricity infrastructure have a positive and significant effect on the Provincial GRDP in Java Island at α=5%, while simultaneously the variables of roads, electricity, and population have a positive and significant effect on GDP at α=5%. As for the results of the coefficient of determination (R2) test, the Adjusted R-Square value is 0.8414. This result shows that the variables of road infrastructure, electricity infrastructure and population can explain GDP by 84.14 percent while 15.86 percent is explained by other variables outside the model.

SUGGESTIONS

This study has only analyzed several factors that affect GDP. Then, the scope of this research is only in Java. Therefore, for future research it is expected to include other variables outside the model and expand the scope of research and add other variables that have an influence on GRDP and can use different analytical tools.

REFERENCES

Agenor, P.R., & Moreno-Dodson,B.. (2006.) *Public Infrastructure and Growth: New Channels and Policy Implications. World Bank Policy Research Working Paper 4064,* November 2006.

Amalia, Dyah. (2019). *Analisis Pengaruh Infrastruktur Terhadap Pertumbuhan Ekonomi (Studi Pada 33 Provinsi di Indonesia).* Skripsi. Univeristas Brawijaya

Badan Pusat Statistik. (2022). *Pertumbuhan ekonomi indonesia 2016-2021.*Jakarta: BPS Indonesia.

Badan Pusat Statistik. (2022). *Statistika Indonesia 2016-2021.* Jakarta: BPS Indonesia.

Canning, D., & Pedroni, P. (2008). Infrastructure, Long-Run Economic Growth and Causality Tests for Cointegrated Panels. *Manchester School, University of Manchester,* 76(5), 504-527. DOI: 10.1111/j.1467-9957.2008.01073.x

Dajan, A. 1996. *Pengantar Metode Statistik Jilid II.* Jakarta: PT Pustaka LP3ES.

Dewi, H.S. (2021). Pengaruh Infrastruktur Jalan, Air , dan Listrik Terhadap Produk Domestik Regional Bruto di Indonesia. Skripsi. Universitas Islam Negeri Syarif Hidayatullah.

Hardianto, B. (2017). *Effectiveness Governance To Education Quality. International Journal of Research Science & Managemen*t, 4(8), 1–4. DOI: 10.5281/zenodo.845661

Hutajulu (2020), yang menyatakan panjang jalan dalam kondisi baik memberikan dampak signifikan positif terhadap PDRB di pulau Sulawesi.

Kementerian PUPR(2021). *Informasi Infrastruktur Indonesia 2019-2020.* Jakarta: Kementerian PUPR Indonesia.

Kementerian Keuangan. 2021. *Anggaran Infrastruktur APBN 2010-2021.*Jakarta: Visual Kemenkeu.

Kementerian Keuangan. 2018. *Capaian Pembangunan Infrastruktur Indonesia.* Jakarta: Publikasi Kemenkeu.

Maharani, Marsha M. 2015. *Analisis Pengaruh Infrastruktur Trehadap PDRB Kota Surabaya. Skripsi.* Bogor: Fakultas Ekonomi dan Manajemen Institut Pertanian Bogor.

MS Yanti (2018). Pengaruh Infrastruktur Jalan, Listrik dan Air Terhadap Produk Domestik Regional Bruto di Kabupaten Gowa Provinsi Sulawesi Selatan. Makassar. Universitas Muhammadiyah.

Ms, Y., Naidah., & Badollahi, I. (2018). The Effect of Infrastructure, Electricit and Water On The Growth of Gross Regional Domestic Products In Gowa District, South Sulawesi Province. BALANCE:Jurnal Ekonomi, 14(2),291-303. DOI:https://doi.org/10.26618/jeb.v15

i1.2150

Nurjanah,D., & Subiyakto, H. (2021). Analisis Pengaruh Pembangunan Infrastruktur Kawasan Ekonomi Khusus Terhadap Pertumbuhan Ekonomi Di Kabupaten Bantul Tahun 2007-2019. *Jurnal Ekonomi dan Bisnis,* 15((2), 71-79.

Nurmayanti, Heni, et al. 2020. Analisis Penyerapan Tenaga Kerja di Pulau Jawa Tahun 2011-2018. *Dinamic*, 2(2), 563-572, doi:10.31002/dinamic.v2i2.1389.

Placencia, Daffa .(2022). Analisis Pengaruh Infrastruktur Publik Terhadap Produk Domestik Regional Bruto pada Daerah Otonomi Khusus Indonesia. Skripsi. *Univeristas Bengkulu.*

Pranessy, Lina; et.al. (2015). *Pengaruh Pembangunan Infrastruktur Terhadap Pertumbuhan Ekonomi Provinsi Bengkulu*. Skripsi. Universitas Bengkulu.

Prasetyo, D., Barika, B., Septriani, S., & Armelly, A. (2023). Analisis Pengaruh Belanja Langsung, Belanja Tidak Langsung dan Jumlah Penduduk Terhadap Struktur Ekonomi Primer Provinsi Bengkulu. *WELFARE Jurnal Ilmu Ekonomi,* 3(2), 158-166. doi:https://doi.org/10.37058/wlfr.v3i2.6074

Sarifah, I., Prijanto, W.J., & Rusmijati. (2020). *Analisis Pengaruh Infrastruktur Jalan, Listrik, Kesehatan, dan Pendidikan Terhadap PDRB Kawasan Strategis Purwomanggung 2010-2018*. Magelang. DINAMIC: Directory Jpurnal of Economic, 2(4). 1143-1157. DOI: http://dx.doi.org/10.31002/dinamic.v2i4.1450

Sari, G.N., & Bustaman, N. (2022). *Analisis Pengaruh Investasi dan Jumlah Penduduk Terhadap PDRB Di Provinsi Riau.*

Soebagiyo, D. (2007). *Kausalitas Granger Pdrb terhadap Kesempatan Kerja di Provinsi Dati I Jawa Tengah. Jurnal Ekonomi Pembangunan*, 8(2), 177-192. DOI: 10.23917/jep.v8i2.1040

Tumaleno, A.F., & Riazis, K.R. (2022). Pengaruh Jumlah Penduduk Terhadap Produk Domestik Regional Bruto di Sulawesi Tenggara.*Arus Jurnal Sosial dan Humaniora (AJSH), 189-195.*

Putro, N.S. (2010). *Pengaruh Pertumbuhan Ekonomi, Pendapatan Asli Daerah dan Dana Alokasi Umum Terhadap Pengalokasian Anggaran Belanja Modal (study kasus kab/kota di provinsi Jawa tengah)*. Skripsi. Universitas Diponegoro.

Safira., Djohan, S., & Nurjanana. (2019). Pengaruh Pengeluaran Pemerintah Pada Bidang Infrastruktur Pendidikan dan Kesehatan Terhadap Pertumbuhan Ekonomi di Provinsi Kalimantan Timur. FORUM EKONOMI, 21(2), 211-216.

Septriani, S., Armelly, A., Ekaputri, R. A., & Pasaribu, E. (2020). ANALISIS FENOMENA FLYPAPER EFFECT PADA KINERJA KEUANGAN KOTA BENGKULU. *AKUNTABILITAS*, *14*(1), 33-56.

Septriani, S. (2023). Analisis Pengaruh Dana Perimbangan dan Pendapatan Asli Daerah Terhadap Belanja Daerah Kabupaten/Kota di Provinsi Bengkulu. *JEMSI (Jurnal Ekonomi, Manajemen, dan Akuntansi)*, *9*(3), 884-894.

Wahyuni, K. T. (2009). *Analisis Pengaruh Infrastruktur Ekonomi Dan Sosial Terhadap Produktivitas Ekonomi Di Indonesia. Skripsi. Institut Pertanian Bogor.*

Undang-Undang Nomor 18 Tahun 2020 tentang Rencana Pembangunan Jangka Menengah Nasional (RPJMN) 2020-2024.

Yuliansyah, Y. (2018). Pengaruh jumlah penduduk dan investasi serta inflasi

terhadap produk domestik regional bruto. *Jurnal Ilmu Ekonomi Mulawarman (JIEM), 3*(2). doi:https://doi.org/10.29264/jiem.v3i2.2419

Zakaria, Muhamad (2022) *Pengaruh Jumlah Penduduk dan Pendapatan Asli Daerah Terhadap Produk Domestik Regional Bruto (Provinsi Banten 2010-2020).* Diploma atau S1 thesis, UIN Sultan Maulana Hasanuddin Banten.