

## The Impact Of Social Infrastructure On Economic Growth In East Java Province

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### ABSTRACT

**Introduction:** The process of economic development emphasizes economic growth, in which the results at a certain time will provide an overview of economic activity and increase the level of welfare of the population. This study aims to determine how much impact of Expenditures for Elementary Schools, Expenditures for Junior High Schools, Expenditures for Basic Health Services, and Expenditures for Referrals on Economic Growth in East Java Province.

**Methods:** . The method used in this research is panel data regression analysis with Fixed Effect Model (FEM) approach.

**Results:** Based on the results of the study, it shows that Expenditure for Elementary School , Expenditure for Junior High School , Expenditure for Basic Health Services have positive and significant impact on Economic Growth, meanwhile Expenditure for Referrals Services has a positive and insignificant impact on Economic Growth of East Java Province.

**Conclusion and suggestion:** The local government is expected to increase economic growth in East Java Province by paying more attention to human development. Policies related to improvement in the field of education are needed by optimizing government spending to build supporting facilities for education that can support improving the quality of education. Other policies related to the health sector can be done by improving facilities and infrastructure in the health sector. This is because there are still remote areas that have limited facilities and inadequate infrastructure.

## INTRODUCTION

Development is a basis for improving the welfare of population. In an effort to improve the welfare of the community, the development of public infrastructure (infrastructure) is an important thing (Posumah, 2015). There are four things that can be indicators of the success of a country's development, namely economic growth, equity or low inequality, quality of life, and environmental damage. Economic growth is one of the most important factors in economic development, although there are other factors such as equity, quality of life, and environmental damage, growth is the most important point in the success of economic development (Arief Budiman, 1996).

Simon Kuznets stated that the growth of a country is influenced by capital accumulation (investment in land, equipment, facilities and infrastructure, and human resources), natural resources, human resources both in terms of quantity and quality level, technological progress, access to information, desire to innovate, and develop themselves also work culture (Afdalul Aulad, 2019).

Harrod-Domar theory is a direct development of Keynes's short-run macro theory into a long-run macro theory. And in Keynes's theory, investment spending affects aggregate demand but does not affect aggregate supply. Harrod-Domar sees the impact of investment in a longer time perspective. In the opinion of these two economists, investment spending does not only have an effect on aggregate demand, but also on aggregate supply through production capacity. In a longer time perspective, investment adds to the stock of capital such as factories, roads, and *etcetera*.

The World Bank limits infrastructure into three categories, namely: economic infrastructure is a physical asset needed to support economic activity both in production and in final consumption. Economic infrastructure includes public utilities (power, telecommunications, drinking water, sanitation, and gas), public work (roads, dams, canals, irrigation, and drainage) as well as the transportation sector (roads, railroads, port transportation, airports and others, etc). Social infrastructure is an asset used to support community health and expertise. Social infrastructure includes education (schools and libraries), health (hospitals and health centers), housing and recreational areas (parks, museums, etc). And the last is administrative/institutional infrastructure which includes law enforcement, administrative control, and coordination as well as culture.

Social infrastructure can encourage more efficient use of physical infrastructure and human resources, thus leading to increase economic growth. Ekundayo and Amarachi (2016) stated that social infrastructure is part of the infrastructure sector and usually includes assets that accommodate social services. Ariantika and Ikhsan (2016) stated that education infrastructure and health infrastructure have an effect and positive relationship on the economic growth of a region. More And Aye (2017) stated

that spending on education infrastructure has an effect on economic growth where the effect is positive while spending on health infrastructure has a negative relationship with economic growth in the region.

The contribution given by each region in Indonesia is very diverse in forming the Gross Regional Domestic Product (GRDP). Each region in Indonesia has a diverse economic structure and activities. Based on data from BPS (Central Statistics Bureau), the Java Island region has more contributions than other regions in Indonesia.

There are several factors that support economic growth in East Java Province, including inflation, Gross Regional Domestic Product (GRDP) at current prices, and Gross Regional Domestic Product (GRDP) at constant prices. Inflation in East Java Province manages to score below inflation at the national level. In recent years, inflation in East Java Province is recorded below the national level inflation. Based on the latest data from the Central Statistics Bureau (BPS), inflation in 2018 reached 2.74%, which was lower than the national inflation rate of 3.13%. The inflation rate is still included in the category of mild inflation.

One of the goals of human development is productivity, the ability of the community to increase productivity and play a full role in the process of creating income and meeting the needs of life, so that economic development can also be classified as part of human development. Human capital theory explains that formal education is one of the most important instruments to produce a society that has high productivity. The higher the education of the community, the higher the level of productivity of the community. With the existence of human resources produced through the educational process. It is hoped that it can increase the basic capacity of the population that can play a role in sustainable development. In addition to education, there are other factors that affect productivity, namely health. Health is a basic need for every human being, without human health it cannot produce a productivity for the country. The form of productivity for the country will provide an overview of improving economic conditions. Improved health can provide an overview of improving the socio-economic conditions of the population.

In this case, there is a difference of opinion about social infrastructure which has no impact on economic growth and another opinion which states that social infrastructure has an impact on economic growth. Therefore, the author wants to conduct a research which to see whether social infrastructure has an impact on economic growth in East Java Province.

## **LITERATURE REVIEW**

Keynes explained that economic growth is influenced by aggregate demand. Where this aggregate demand includes: consumption spending, investment spending,

and government spending. Harrod-Domar theory is a direct development of Keynes's short-run macro theory into a long-run macro theory. The main aspect developed from Keynes's theory is the aspect concerning the role of investment in the long term. And in Keynes's theory, investment spending affects aggregate demand but does not affect aggregate supply. Harrod-Domar sees the impact of investing in a longer time perspective. In the opinion of these two economists, investment spending does not only have an effect on aggregate demand, but also on aggregate supply through production capacity. In a longer time perspective, investment increases the capital stock such as factories, roads and so on (Boediono, 1999).

Simon Kuznets stated that a country's economic growth is influenced by capital accumulation (investment in land, equipment, facilities and infrastructure, also human resources), natural resources, human resources both in terms of quantity and quality level, technological progress, access to information, desire to innovate also develop themselves and work culture (Todaro, 2000).

## RESEARCH METHODS

The type of data used in this study is a secondary data type where the data is obtained from data published by the Central Statistics Bureau (BPS) for each district in East Java Province, both from GRDP data, health infrastructure, and education infrastructure. In addition to published data from the Directorate General of Fiscal Balance, BPS, data is also obtained from published data from the Health Service and Education Office in East Java Province. The data analysis method used in this research is multiple regression analysis.

And specifically, the equation is formed in the econometric model as follows:

$$Y_{it} = \beta_0 + \beta_1 X_{it1} + \beta_2 X_{it2} + \beta_3 X_{it3} + \beta_4 X_{it4} + \epsilon_{it}$$

Description :

Y	= Economic Growth
X <sub>1</sub>	= Expenditure on Elementary School
X <sub>2</sub>	= Expenditure on Junior High School
X <sub>3</sub>	= Expenditure on Basic Health Services
X <sub>4</sub>	= Expenditure on Referral Services
β <sub>0</sub>	= Constant
β <sub>1</sub>	= Variable X <sub>1</sub> Coefficient
β <sub>2</sub>	= Variable X <sub>2</sub> Coefficient
β <sub>3</sub>	= Variable X <sub>3</sub> Coefficient
β <sub>4</sub>	= Variable X <sub>4</sub> Coefficient
ε <sub>it</sub>	= error term

**RESULT AND ANALYSIS**

This study uses three models that are often used in panel data regression, namely Pool Least Square (PLS), Fixed Effect Model (FEM), and Random Effect Model (REM). The three models are tested using the Chow test, Hausman test, and Brreusch-Pagan (LM) which are used to determine the best model in this study. Based on the results of the Chow-test and Hausman's test, the correct model used is the Fixed Effect Model (FEM).

**Table 1**  
**Multicollinearity Test Results**

	<b>X1</b>	<b>X2</b>	<b>X3</b>	<b>X4</b>
<b>X1</b>	1.000000	0.592737	-0.033927	0.314410
<b>X2</b>	0.592737	1.000000	0.028876	0.262888
<b>X3</b>	-0.033927	0.028876	1.000000	0.301901
<b>X4</b>	0.314410	0.262888	0.301901	1.000000

Source : Attachment 5.a (processed data)

The table above shows the results of the multicollinearity test using the Correlation Test. The multicollinearity test results show that there is no multicollinearity problem, because the correlation coefficient of each resulting variable is smaller than 0.80, it can be concluded that the panel data model is free from multicollinearity problems.

**Table 2**  
**Heteroscedasticity Test Results**

<b>Variable</b>	<b>Coefficient</b>	<b>Std. Error</b>	<b>t-Statistic</b>	<b>Prob.</b>
C	0.042404	0.203658	0.208212	0.8353
X1	-1.26E-08	1.68E-08	-0.748789	0.4549
X2	5.08E-08	2.72E-08	1.870335	0.0630
X3	2.01E-08	1.69E-08	1.189193	0.2359

The results of the heteroscedasticity test shows the probability of each independent variable is greater than = 0.05, it can be concluded that the panel data model does not have heteroscedasticity problems.

**Table 3**  
**Panel Data Regression Estimation Results**

<b>Variable</b>	<b>Coefficient</b>	<b>Std. Error</b>	<b>t-Statistic</b>	<b>Prob.</b>
C	5.316649	0.038706	137.3581	0.0000
X1	4.74E-09	1.72E-09	2.752845	0.0066
X2	1.75E-08	4.11E-09	4.255151	0.0000
X3	8.41E-09	3.28E-09	2.565038	0.0113
X4	2.69E-09	3.40E-09	0.791626	0.4298

R-squared	0.947788
Adjusted R-squared	0.933323

The results of the R2 test states that the Adjusted R-squared is 0.933323, then the results show that 93.3% of economic growth in East Java Province is strongly influenced by government spending on elementary schools (SD), government spending on junior high schools, government spending on basic health services and government spending on referral services, while the remaining 6.7% is influenced by other variables outside the model.

**The Impact of Government Expenditure for Elementary Schools (SD) on Economic Growth**

Government Expenditure for Elementary Schools (SD) has a positive and significant impact on economic growth in East Java Province with a regression coefficient of 4.74E-09 and a probability value of 0.0066. This means that when there is an increase in Government spending for Elementary Schools (SD) in East Java Province, it will affect economic growth in East Java Province. This study is in accordance with the initial hypothesis that government spending on Elementary Schools (SD) has a positive effect on economic growth in East Java Province, the more the government optimizes spending on Elementary Schools (SD), the economic growth in East Java Province will increase. This is because education in Elementary School (SD) is very important to be the foundation for a higher level of education, namely Junior High School (SMP). Elementary school (SD) is considered as the smallest level of education when compared to other levels of education. However, without elementary school education (SD) children cannot know basic sciences such as reading, writing, and counting. As in East Java, almost half of the problem of illiteracy in Indonesia is in the province of East Java. In 2014, according to data from the Education Data and Statistics Center of the Ministry of Education and Culture, East Java was recorded as the province with the highest illiteracy population with a total of 1.4 million people. Apart from that, of the 25 districts with the most illiteracy, 12 are in East Java. This shows the importance of basic education as the first step in the intellectual life of the nation.

This research is in line with research conducted by Ira (2016) which found that the development of educational infrastructure has a positive and significant impact on economic growth in Aceh. This is because in terms of the quality of educators, Aceh is included in an area that has a fairly low quality of education. This condition occurs due to the lack of educational support facilities and infrastructure such as laboratories, libraries, and teaching aids. So that the government optimizes regional spending on education in order to improve the quality of education in Aceh. If the quality of education increases, it will improve the quality of human resources in Aceh which will then have an impact on productivity which increases economic growth in Aceh. Like one of the cities in East Java, namely Batu City. Batu City is one of the cities that is in the

third place with high economic growth in East Java. Batu City is one of the cities that has a high commitment to improving the quality of education. So that the quality of human resources produced will be better.

Based on Simon Kuznets' theory of economic growth that the economic growth of a country is influenced by capital accumulation (investment in land, equipment, facilities and infrastructure, and human resources), natural resources, human resources both in terms of quantity and quality level, technological advances, access to information, the desire to innovate and develop themselves and work culture (Todaro, 2000). In this case, the facilities and infrastructure of a country have an influence on economic growth in that country. Facilities and infrastructure take part in expediting the pace of the economy and improving the quality of human resources in a country. The better the facilities and infrastructure in a country, the more it will support the progress of economic growth in that country.

These facilities can also be referred to infrastructure which means as facilities used to support an activity. This infrastructure can be in the form of economic and social infrastructure that supports each other, where the economic infrastructure supports the community's economic activities and social infrastructure supports the improvement of the community's quality of life and these two things will always be related. With these two things can support economic growth in a region. Therefore, the level of education in an area can indirectly affect economic growth in that area. because the more human quality of an area increases, the productivity produced will increase so that it affects economic growth in the area.

### **The Impact of Government Spending for Junior High Schools (SMP) on Economic Growth**

The government expenditure for Junior High Schools (SMP) has a positive and significant impact on economic growth in East Java Province with a regression coefficient of 1.75E-08 and a probability value of 0.000. This means that when there is an increase in Government spending for Junior High Schools (SMP) in East Java Province, it will increase the level of economic growth in East Java Province. This study is in accordance with the initial hypothesis which states that government spending on Junior High Schools (SMP) has a positive effect on economic growth in East Java Province. The greater government spending on education will increase human capital which in the end will increase productivity so that economic growth in East Java also increases. Government spending on education is an indirect investment provided by the government in increasing human capital. Even some earlier economists emphasized the importance of human capital in the production process. Technological knowledge and skills are immaterial tools which without those human physical capital cannot be used productively.

In 1984 the government made a 6-year compulsory education program which means that every citizen had to graduate from elementary school. After 10 years, in 1994, the government changed the program to 9 years compulsory education, which means that citizens must pass junior high school. This is done to improve the quality of human resources through education. This 9-year compulsory education program is expected to reduce the number of people who are illiterate. In addition, the program is expected to produce better human resources and be able to overcome the challenges of life that are increasingly complex and difficult from time to time.

This study is in line with research conducted by Rusmusi (2018) which found that educational infrastructure has a positive and significant effect on economic growth in Central Java. This is indicated by the increase in educational facilities as many as 2,705 units in Central Java Province. This is an effort to improve the quality of education through the development of educational infrastructure. Education has a role in forming a productive and competent workforce. A workforce that has good education and adequate quality is a determining factor for increasing production capacity so as to stimulate economic growth.

#### **The Impact of Government Spending for Basic Health Services on Economic Growth**

Government spending on basic health services has a positive and significant impact on economic growth in East Java Province with a regression coefficient of 8.41E-09 and a probability value of 0.0113. This means that any changes that occur in government spending on basic health services will result in significant changes in economic growth in East Java Province. This study is in accordance with the initial hypothesis that government spending on basic health services has a positive impact on economic growth in East Java Province, the greater the government spending on basic health services, the economic growth will increase. Government spending on basic health services that is increasing will improve the quality of health services that will be obtained by the community.

The increasing government spending for basic health services will have an impact on the provision of health facilities in the area, which will be more complete and easily accessible to the community so that the quality of life of the people in the area will increase. This is shown by several government programs carried out to overcome health problems that occur in East Java Province. The level of public health will affect productivity, if the community is healthy it will produce optimal productivity and will affect the increase in economic growth.

The implementation of basic health services is carried out in a Puskesmas working area and in carrying out activities assisted by an integrated service post (Posyandu). There are several main activities carried out in basic health services including providing education related to health problems and how to prevent and monitor them, provision of clean water and basic sanitation, maternal and child health including family planning, immunization activities to prevent major infectious



diseases, prevention and supervision activities of local endemic diseases, treatment of common diseases, and essential drug supply activities.

This study is in line with the research conducted by Warsilan (2015) which found that health infrastructure has a significant influence on economic growth in Samarinda. This is because people in Samarinda optimize the use of health facilities, namely puskesmas. And thus public health will be monitored. This is in line with the theory of economic growth which suggests that the active role of public policy in increasing economic development is through direct and indirect investment (Todaro and Smith, 2012: 151). Government spending on basic health services is a form of indirect investment issued by the government that is used to increase human capital. The higher the expenditure on basic health services, the better the level of health in the area.

### **The Impact of Government Spending for Referral Services on Economic Growth**

Government spending on referral services has a positive but not significant impact on economic growth in East Java Province with a regression coefficient of 2.69E-09 and a probability value of 0.4298. This means that when there is an increase in government spending on referral services in East Java Province, it will not affect economic growth in East Java Province and vice versa. This study is not in accordance with the initial hypothesis that government spending on referral services has a positive effect on economic growth in East Java Province.

Judging from the analysis results which show a positive and insignificant relationship between government spending on referral services and economic growth, it means that if the government continues to increase government spending on referral services, the impact on economic growth in East Java Province is not too large. In this case, referral services do not have a significant effect on economic growth because most of the public's health needs have been covered in basic health services, while referral services are only intended for more serious health problems and for handling diseases that require intensive care in hospitals. Referral service is the implementation of health services that carry out the reciprocal delegation of responsibility for one or more cases of disease or health problems vertically from units that have less ability to units that have more capabilities or horizontally between units in the same level of ability.

This is in line with the research conducted by Heri (2014) which found that health spending has an insignificant effect on economic growth in East Kalimantan Province. This is because the government budget for health is not always properly allocated. There are several explanations for this problem, including the weakness of the capacity of program planners and implementers so that the project does not achieve the actual program targets.

The theory of economic growth suggests the active role of public policy in increasing economic development through direct and indirect investment (Todaro and Smith, 2012: 151). Government spending in the health sector, one of which is referral services, is an indirect investment provided by the government in increasing human capital. In the health sector, this theory applies in the long term and in the short term that government spending in the health sector affects economic growth although the effect is not too significant. Government spending in the health sector is used to improve access and quality of health services. The better the government in optimizing the health budget, the better the level of public health in the area. In the long term, the better the level of public health, the better their physique, the better their productivity.

## CONCLUSION

Government spending for elementary schools (SD), junior high schools (SMP), and basic health services have a positive and significant impact on economic growth in East Java Province. The results of this study are in accordance with the research hypothesis. Meanwhile, government spending on referral services has a positive and insignificant effect on economic growth in East Java Province. The results of this study are in accordance with the research hypothesis.

The local government is expected to increase economic growth in East Java Province by paying more attention to human development. This is because human resources are the main capital in the development process. The quality of human resources which is characterized by a good health condition and level of education will affect work productivity. Policies related to improvement in the field of education are needed by optimizing government spending to build supporting facilities for education that can support in improving the quality of education. Other policies related to the health sector can be done by improving facilities and infrastructure in the health sector. This is because there are still remote areas that have limited facilities and inadequate infrastructure.

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