

ANALYSIS OF REGIONAL GOVERNMENT EXPENDITURE ON ECONOMIC GROWTH OF DISTRICT AND CITY IN EAST JAVA

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ABSTRACT

This study aims to test and assess the impact of local government expenditure on health, infrastructure, and labor on the economic growth of districts and cities in East Java Province between 2013 and 2022. This study employed the panel data regression method, using data from 38 districts and cities in East Java Province from 2013 to 2022. The study findings show that government expenditure on health, infrastructure, and labor has a favorable and considerable impact on the economic growth of East Java Province's districts and cities.

Keywords: Government expenditure on Health and Infrastructure, Labor, Economic growth, panel data

ABSTRAK

Penelitian ini bertujuan untuk menguji dan menilai dampak pengeluaran pemerintah daerah untuk bidang kesehatan, infrastruktur, dan tenaga kerja terhadap pertumbuhan ekonomi kabupaten dan kota di Provinsi Jawa Timur selama periode 2013 hingga 2022. Penelitian ini menggunakan metode regresi data panel dengan data 38 kabupaten/kota di Provinsi Jawa Timur dari 2013 hingga 2022. Temuan penelitian menunjukkan bahwa pengeluaran pemerintah untuk kesehatan, infrastruktur, dan tenaga kerja memiliki dampak yang baik dan cukup besar terhadap pertumbuhan ekonomi kabupaten dan kota di Provinsi Jawa Timur.

Kata Kunci: Pengeluaran Pemerintah Kesehatan dan Infrastruktur, Tenaga Kerja, Pertumbuhan Ekonomi, data panel

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Introduction

One of the indicators that can indicate that a region is prosperous and that development is progressing well is economic growth (Imleesh et al., 2017). Infrastructure development is a technique for stimulating economic growth. The degree of infrastructure influences a regions's development rating (Babatunde, 2018). The government plays an important role in managing infrastructure development because the government has the highest policy in managing the infrastructure. With a good government role in managing the budget for infrastructure, it will certainly advance the infrastructure so that it can improve people's welfare efficiently (Ramadhan, 2019).

The government has budgeted funds that are used to help launch infrastructure development to make it more advanced and developed. In 2022, the government budgeted for

infrastructure through the APBD per function in East Java Province amounting to Rp132.921 billion ([Directorate General of Fiscal Balance, 2023](#)). Expenditures per function in the APBD include functions in the health sector and the infrastructure sector (housing and public facilities). According to statistics from the Directorate General of Fiscal Balance (2023), the spending budget for health functions is given around 17%. Then, to support the functions of the education sector and the health sector, there is a function in the infrastructure sector (housing and public facilities) whose budget is around 3%.

Table 1: Functional Expenditure Budget for Health Sector, and Infrastructure Sector (Housing and Public Facilities) of East Java Province in 2021-2022 (in Billion Rupiah)

Sector	2021 (RP)	2022 (RP)
Health	15,081	20,538
Housing and Public Facilities	4,063	2,773

Source: [Directorate General of Fiscal Balance \(2023\)](#)

In Table 1, the expenditure budget for the health sector function increased, while the infrastructure sector function (housing and public facilities) decreased due to the provision of portions to restore social and economic conditions affected by Covid-19 and the shrinkage of transfer funds from the center. The health sector and the infrastructure sector (housing and public facilities) that receive allocations of government spending funds are investments in the growth of economy. However, the influence of government expenditure on these two areas takes time to feel the impact on economic growth ([Setiawan, 2016](#)).

Economic growth is reflected in the increase in GRDP as well as in assessing the results of a region's development ([Nairobi & Respitasaki, 2021](#)). GRDP is a calculation of regional income used to see development results and as a reference in planning the economy in a region). GRDP is the entire value of service items and goods created in the regional area that will be used for final consumption by the population. GRDP is a measure of the economic success of overall economic activity in a region ([Prasetyo, 2016](#)).

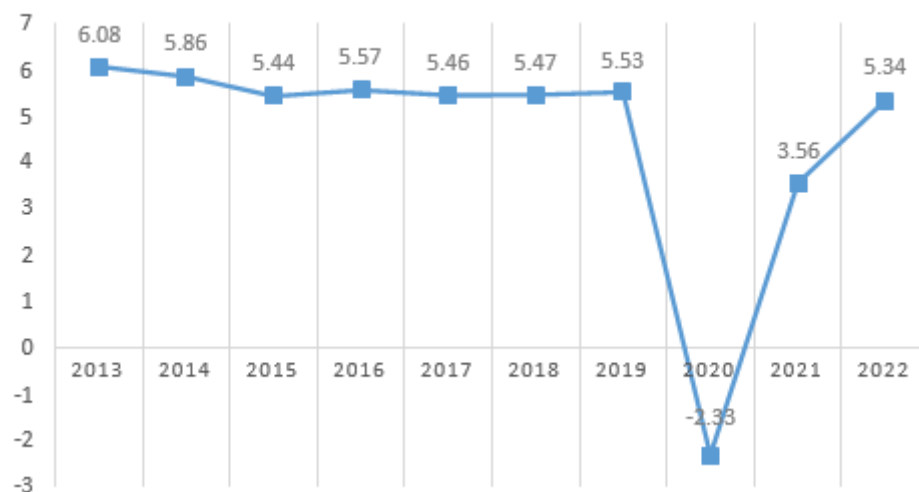


Figure 1: East Java Economic Growth Rate 2013-2022 (Percent)

East Java Province has 38 districts and cities where each region has different characteristics and potential. Figure 1 depicts East Java Province's economic growth rate from 2013 to 2019 tended to stabilize above 5%. Then in 2020, economic growth decreased dramatically to -2.33%. The Covid-19 pandemic caused a significant decrease in the economy. Then, in 2021 and 2022, East Java Province's growth of the economy began to increase again.

This illustrates that the economy in East Java Province is improving and can return to 5% as before the pandemic occurred.

Samuelson & Nordhaus (2010) state that labor (HR) is the most important element in economic growth. Trained labor skills are needed so that labor productivity can be more effective. Absorbed labor will make production activities increase and reduce unemployment. So that in the long run it will improve welfare and affect the economy (Hidayat & Nalle, 2017). Research by Nairobi & Respitasari (2021) found that the employment variable is significant and has a beneficial impact on economic growth.

This study focuses on the impact of regional government spending on the health sector, infrastructure, and labor on the district and cities economic growth in East Java Province when viewed from the background.

Literature Review

Economic Growth Theory

The Harrod-Domar theory focuses on economic growth depending on savings and investment so that the expectation of an increase in people's income and production capacity is always related to the rate of investment. The government also encourages capital investment to progress development (Todaro & Smith, 2012). In addition, labor force growth and technological progress are two additional components of economic growth besides investment. This theory does not explain labor force expansion directly because of the enormous number of people in emerging nations who can be hired in proportion to capital investment.

According to Mankiw (2007), Solow's growth theory was created with the aim of showing how labor force growth, investment/capital growth, and technological progress affect the total output of goods and services and their relationship in a country's economy. By changing this theory from the Harrod-Domar theory, Solow's theory allows for the substitution of capital for labor (Todaro & Smith, 2012). In the Solow Theory model, in contrast to the Harrod-Domar analysis, thus, the output ratio and the model ratio in labor after the economy adjusts some time will increase, but not the growth rate.

Government Expenditure Theory

The development of government spending in economic development, according to Rostow and Musgrave is divided into three stages; initial, intermediate, and advanced. During in the initial stages, the government must provide facilities and services. Then, the moderate stage, the government tries to boost economic growth which requires more government investment. Musgrave said that the percentage of private investment to GRDP will increase along with the percentage of government investment to GRDP. Rostow said that at the next economic level, expenditure on social incentives, including old-age benefits and public healthcare facilities, will be high. (Haryanto, 2013).

Sectors of Government Expenditure

1. Health

Health is the most basic need for humans since better health leads to higher productivity. This is connected to the human capital theory which holds that human capital has a large role and is more important than technology that can increase economic growth. Thus, health is crucial for economic development and growth as part of the aggregate production function. The government have a vital role in improving health by allocating fund allocations to develop health facilities and infrastructure. So that the even distribution of health services will create a productive society and increase its income (Septiani, 2019)

2. Infrastructure (Housing and Public Facilities)

Infrastructure is physical and financial capital that includes roads, railways, waterways, airways, transportation and communication along with other facilities such as water supply, financial institutions, electricity, housing and public facilities. (Todaro & Smith, 2012). Bappenas found that infrastructure availability is related to regional development, including economic growth and community welfare. Thus, the provision of infrastructure is an important component in promoting economic growth.

Labor Force

Labor force and population growth are two positive aspects that drive economic growth according to Todaro & Smith (2012). The high number of workers will increase productivity. However, it must be balanced with the available jobs. This will increase total production (Hidayat & Nalle, 2017). According to Samuelson & Nordhaus (2010), labor quantity and labor force skills are part of labor input. A large workforce must be balanced with a qualified workforce as well. The quality of workers is concerned with the skills, knowledge, and discipline of the workforce. A trained and skilled workforce can utilize faster technological developments effectively.

This study is strengthened by prior research written by Ramadhan (2019), which resulted in spending by the government in the economic and education sectors being significant and having a favorable impact on economic growth. Then for the health variable is not significant and has a negative effect. Meanwhile, in research by Babatunde (2018), the health variable has a considerable impact on economic growth.

Then research from Nairobi & Respitasari (2021) shows that infrastructure for roads, water supply, health, investment, labor, and Gini growth are significant and have a positively impact on economic growth. Meanwhile, spending on capital variable has no meaningful impact on economic growth. The PMTB variable is significant according to research by Widyanti (2017), however it has a negative impact on growth in economies because ASEAN-5 countries only have few domestic and foreign investors.

Data and Research Methods

This study used panel data regression analysis approach, which combines time series data and cross section data (Sugiyono, 2016). The statistic used in this research are panel data including of cross section data from 38 districts and cities in East Java Province, as well as time series data from the period 2013-2022.

Table 2: Data Sources

Variable	Description	Data Sources
GRDP (lnpdrb)	Economic growth variables assessed through GRDP at constant 2010 prices in 38 town and districts in East Java Province in 2013-2022 in units of billion rupiah.	BPS
Health Expenditure (lnpk)	Variable government expenditure on health infrastructure in 38 town and districts in East Java Province in 2013-2022 in units of billion rupiah.	DJPK Kemenkeu
Infrastructure Expenditure (lnpi)	Variable government spending on infrastructure (housing and public facilities) in 38 town and districts in East Java Province in 2013-2022 in units of billion rupiahs	DJPK Kemenkeu

Variable	Description	Data Sources
Labor Force (Intk)	Variable labor force in 38 town and districts in East Java Province in 2013-2022 in units of souls	BPS

The panel data regression model was used to determine the effect of the separate variable on the dependent variable that can be formulated as follows:

$$\ln Y_{it} = \beta_0 + \beta_1 \ln PK_{it} + \beta_2 \ln PI_{it} + \beta_3 \ln TK_{it} + \epsilon_{it} \quad (1)$$

Where Y is the GRDP variable which is the dependent variable. While other variables are independent variables that affect GRDP.

Finding and Discussion

Statistical Description

Table 3: Summary of Statistical Description of Variables

Variable	Obs.	Mean	Std. Dev.	Min	Max
Inpdbrb	380	10.0250	.9741	8.1452	12.9814
Inpk	380	12.5937	.6479	10.1346	14.6437
Inpi	380	11.8872	1.038	7.1462	14.3783
Intk	380	12.9414	.7950	11.0253	14.2329

Table 3 shows the statistical data from the study with 380 observations. The table also shows the maximum value utilized to set the highest value limit, as well as the minimum value, mean, and standard deviation.

Estimation Results

Table 4 presents the results of panel data regression from three models; PLS, FEM and REM. According to the regression results using the three models, the health expenditure, infrastructure, and labor variables are significant to economic growth. However, in the FEM and REM models, the infrastructure expenditure variable has an adverse impact of the growth in the economy.

Table 4: Panel Data Regression Results

Independent Variable	Description	PLS	FEM	REM
	<i>Coef.</i>	-4.4622 ***	-4.2942 **	-3.3508 **
Constanta	<i>t</i>	-6.52	-3.31	-3.28
	<i>P > t </i>	0.000	0.001	0.001
	<i>Coef.</i>	0.4250 ***	0.1253 ***	0.1306 ***
Inpk	<i>t</i>	6.53	10.59	11.51
	<i>P > t </i>	0.000	0.000	0.000
	<i>Coef.</i>	0.1468 ***	-0.0165 **	-0.0174 **
Inpi	<i>t</i>	4.18	-3.07	-3.27
	<i>P > t </i>	0.000	0.002	0.001
	<i>Coef.</i>	0.5709 ***	0.9996 ***	0.9224 ***
Intk	<i>t</i>	10.03	9.58	11.28

Independent Variable	Description	PLS	FEM	REM
	$P > t $	0.000	0.000	0.000
<i>R-Squared</i>		0.5721	0.5219	0.5235
<i>Prob>F</i>		0.000	0.000	0.000
Notes : * $p<0.05$; ** $p<0.01$; *** $p<0.001$				

Based on the results of the fixed effect significance test (Chow Test) and the random effect significance test (Hausman Test), it is possible to conclude that the Fixed Effect Model (FEM) was used as a regression tool in this study. The selection of the FEM model requires a classical assumption test which the model must match the Best Linear Unbiased Estimator (BLUE) criteria.

The classical Assumption Test is carried out by running multicollinearity, heteroscedasticity, and autocorrelation tests. The multicollinearity test is tested using Correlation Matrix Test, then the heteroscedasticity test is tested using Breush-Pagan Test, and autocorrelation test is tested using Wooldridge Test.

Table 5: Multicollinearity Test Result

	Inpdrb	Inpk	Inpi	Intk
Inpdrb	1.0000			
Inpk	0.6143	1.0000		
Inpi	0.4299	0.2538	1.0000	
Intk	0.7108	0.625	0.4326	1.0000

According to the multicollinearity test results in Table 5, the model in this study has a correlation value below 0.8 between variables, indicating that there is no concern with multicollinearity.

The analysis of the heteroscedasticity test on this research model resulted in a prob>chi2 value of 0.0000 or less than 0.05, indicating that H0 is rejected and heteroscedasticity exist in this study. The results of the autocorrelation test on this research model produced a probability value of 0.0000 or less than 0.05, so H0 was rejected so that there was an autocorrelation problem in this study. The heteroscedasticity and autocorrelation issues in this study are addressed by conducting robust tests or feasible general least square (FGLS) tests so that the estimation results are BLUE.

Table 6: Estimation Results with FGLS Method

Variable	Coef	Std. Err.	P > z
Konstanta	-4.4622***	0.6804	0.000
Inpk	0.4250***	0.0647	0.000
Inpi	0.1468***	0.0349	0.000
Intk	0.5709***	0.6804	0.000
Prob>Chi2	0.000		

Table 6 presents the outcomes of the panel data information estimation using the FGLS approach. The test results shows that the variables health expenditure (Inpk), infrastructure expenditure (Inpi), and labor influence economic growth.

The health spending variable (lnpk) has a significant effect on economic growth in the period 2013 to 2022 in East Java, as indicated by probability value of 0.000 smaller than α . The coefficient value of the health expenditure variable (lnpk) is 0.4250, implying the positive relationship between spending for health in districts and cities by local government in East Java. This shows that with an increase of 1 percent the realization of health expenditure will increase economic growth by 0.42 percent. These findings are consistent with the prior research of Nairobi & Respitasari (2021) and Safita et al. (2019) who found that the health spending variable positively and substantially affects economic growth.

The probability value of variable infrastructure spending (lnpi) $0.000 < \alpha$, shows that the variable infrastructure spending (lnpi) has a correlation impact with economic growth in East Java from the period 2013 to 2022. The correlation value of the infrastructure expenditure variable (lnpi) is 0.1468 presents the positive relationship between infrastructure expenditure and economic growth of local government in East Java. This shows that with an increase of 1 percent realization of infrastructure spending will increase economic growth by 0.14 percent. The output of this research differ from the research of Safita et al. (2019) which shows that the infrastructure spending variable is significant but has a negative impact of the growth on economy because it takes a long time to feel the impact of infrastructure development and also requires considerable funds.

The labor variable (lnlk) has a significant effect on economic growth in East Java in the period 2013 to 2021, based on probability value of the labor variable (lnlk) is $0.000 < \alpha$. The coefficient value of the labor variable (lnlk) is 0.5709 which explains the positive relationship between labor and the growth on economy. This shows that a 1 percent increase in labor, leads economic growth increase by 0.57 percent. The output of this study are consistent with research by Maharani & Isnawati (2014) showing that the labor variable has a positive and significant effect on economic growth because the population acts as a producer so that it has a role to increase productivity which will increase economic growth through aggregate consumption.

Conclusion

The purpose of this research is to test and analyze the impact of expenditure by government on health, infrastructure, and labor sectors on the growth of economy of districts and cities in East Java from 2013 to 2022. Depending on the findings and discussions in this study, it is possible to conclude that government investment in the health, infrastructure, and labor sectors have a vital correlation with economic growth. The determinants of government expenditure in the health sector, infrastructure, and labor partially have a positive and significant effect on the growth of districts and cities' economies in East Java Province from 2013 to 2022.

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