



## What Factors Affect Expenditures of Goods Services For Infrastructure In Indonesia

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**Abstract:** This study identifies and analyzes the factors that influence infrastructure spending and their impact on regional economic growth in Indonesia. This study is based on cross-sectional data covering 32 provinces in Indonesia with time series 2008-2020 using multiple regression analysis models and simple regression panel data. The results of the study show that the Provincial Minimum Wage, Construction Support Workforce Growth, Regional Own Revenue and Total Provincial Government Expenditure are factors that have a significant influence on the allocation of goods/services expenditure for infrastructure. Meanwhile, the Construction Sector Workforce Growth factor and Gross Regional Domestic Product do not affect the allocation of goods/ services expenditure for infrastructure. The results of the study show that the allocation of goods/services spending for infrastructure has a significant negative effect on economic growth. When infrastructure spending increases by 1 million rupiah, economic growth will decrease by  $8.58e-07$  or  $0.000000858\%$ . While the implications of the results of this study should be that the central and regional governments prioritize spending on goods/services for infrastructure with programs related to reducing poverty and unemployment. Productive infrastructure development and maintaining the quality of work results.

**Keyword:** Shopping, Infrastructure, Economic Growth.

### INTRODUCTION

Expenditure for the procurement of goods/services in the last five years (2017-2021) has continued to increase and has averaged 1,092 trillion rupiahs of total state spending of 2,385 trillion rupiahs or 46% of the total state spending provided. This is certainly a large amount and if managed properly will have a positive impact on economic growth and increase the welfare of the Indonesian people. If it is spent efficiently, effectively and transparently it will encourage the achievement of procurement objectives, namely value for money (VfM) that

every money spent will produce the right goods/services measured in terms of quality, quantity, time, cost, location and provider. The amount of government spending is as explained in the following table:

**Table 1. State Expenditures and Procurement Expenditures in the 2017-2021 Period (in Trillion Rupiah)**

No	Description	Year				
		2017	2018	2019	2020	2021
A	State Spending	2007.40	2217.30	2,461.10	2540.40	<b>2,697.23</b>
	1. Central Government Expenditure	1265.40	1453.60	1634.30	1683.50	<b>1926.96</b>
	2. Procurement Shopping	1039.0	1117.50	1168.40	1027,10	<b>1106.4</b>
B	Value of Procurement Expenditures Announced in SiRUP	<b>864</b>	<b>824.9</b>	<b>939.4</b>	<b>863,1</b>	<b>1141.8</b>

Source: Ministry of Finance and LKPP RI, 2022

With an average growth value of procurement spending in 5 years (2017-2021) reaching 2% and the amount tends to increase every year. Except that in 2020 there was a decrease in the value of procurement spending by 12% which was triggered by the Covid-19 Pandemic which had an impact on the allocation of Government goods/services spending and the weakening of the Indonesian economic sector. However, it must be admitted that the value of procurement spending announced in SiRUP has experienced a very significant increase in 2021. This is in line with the issuance of the national economic recovery policy as outlined in Government Regulation Number 23 of 2020 and its amendments concerning the Implementation of the National Economic Recovery Program in the Context of Supporting State Financial Policies for Handling the Covid-19 Pandemic and/or Facing Threats that Endanger the National Economy and/or Financial System Stability and National Economic Rescue. One of the National Economic Recovery (PEN) programs is health care which is directed at procuring the Covid-19 vaccine, health facilities and infrastructure, laboratories, research and development.

The trend of increasing government spending from time to time is in line with the increasing number of government activities that require financing. And the construction or infrastructure sector is the spending sector that occupies the largest portion of the Government spending allocation. The average amount reaches 31% of the total infrastructure expenditure which in 2017 amounted to Rp. 348 trillion, in 2018 Rp. 316.0 trillion, in 2019 Rp. 485.7 trillion; in 2020 reached Rp. 317.8 trillion and in 2021 it will be Rp. 340.6 trillion. This illustrates that the total construction spending in 5 years (2017-2021) will reach Rp. 1,391.2T. Especially when viewed from the need for construction spending which requires a lot of money, that infrastructure development in 2019-2024 will reach 35% or Rp. 6.445 trillion from the previous period of Rp. 4,769.2 trillion (2014-2019). Part of this need can be met by the state budget of Rp. 2.385 trillion (37%). Then to cover the shortfall by assigning SOEs Rp. 1,353 trillion and the rest is expected to be met with a Public Private Partnership (PPP) scheme of Rp. 2.707 trillion (42%). Therefore, it cannot be denied that large spending allocations in the infrastructure sector should have an impact on increasing Indonesia's economic growth. 353 trillion and the rest is expected to be met with a Public Private Partnership (PPP) scheme of Rp. 2.707 trillion (42%). Therefore, it cannot be denied that large spending allocations in the infrastructure sector should have an impact on increasing Indonesia's economic growth. 353 trillion and the rest is expected to be met with a Public Private Partnership (PPP) scheme of Rp. 2.707 trillion (42%). Therefore, it cannot be denied that large spending allocations in the infrastructure sector should have an impact on increasing Indonesia's economic growth.

The large amount of government spending is also explained in data submitted by the World Bank (2014), that good public procurement practices are largely determined by the effectiveness of public spending. The allocated budget can reach 5-20% of the Gross Domestic Product (GDP). This amount reaches an average of 15% of the Gross Domestic Product (GDP) in OECD countries (The Organization for Economic Cooperation and Development) and 25-30% of the Gross Domestic Product (GDP) in developing countries and developing market economies (Ros, 2012). For example, in the previous period, namely in 2012-2017, it showed a significant increase in goods/services spending and capital spending. In the 2017 State Revenue and Expenditure Budget (APBN), the spending ceiling for Ministries and Institutions (K/L) is IDR 763.6 trillion. This amount is approximately 58 percent of central government spending and 37 percent of state spending, which reaches IDR 2.1 quadrillion. And the increase in central government spending was also offset by an increase in the allocation of goods/services spending by local governments, the realization of which in 2020 reached IDR 1,088.7 trillion. This value reaches 100.94% of the 2020 Revised APBD allocation of 1,078.62 trillion. In 2019, the realization of regional spending reached IDR 1,188.02 trillion. In detail, the largest regional spending in 2020 was spent on personnel spending, namely IDR 386.3 trillion. Realization of spending on goods and services of Rp. 279.1 trillion years ago. Then, capital expenditure in 2020 was recorded at Rp. 147.9 trillion. Meanwhile, other spending reached Rp 275.3 trillion. Therefore, by maintaining consistency in spending on goods/services even in the conditions of the Covid-19 Pandemic, the Government is expected to be able to encourage stability in people's purchasing power and consumption to increase economic growth and people's welfare.

Based on data on the amount of expenditure on government goods/services, it is hoped that it will have a positive impact on the Indonesian economy as explained by Adolf Wagner (1893), that in a country's economy, if economic development increases, government spending will also increase in line with the many government affairs that must be financed. And according to John Meynard Keynes (1936), government spending is also an element of aggregate demand. According to him, public spending increases aggregate demand which in turn triggers economic growth and employment. On the other hand, an increase in government spending can also lead to a fiscal deficit resulting in an inefficient allocation of resources and reduced private investment. Therefore, the relationship between government spending and economic growth is often one of the most interesting discourses. Furthermore, it was stated that economic growth increases government spending (Hasnul, 2015). Proponents of the Keynesian hypothesis argue that the utilization of society's resources can increase the productive capacity of the economy and promote a country's economic growth. Therefore, the main objective of public procurement is to achieve value for money which is embodied in increasing human welfare and increasing economic growth. According to Nkinga (2003), strong procurement management in the public sector is a tool to achieve political, economic, and social goals. Thus, productive or sustainable public procurement will encourage growth and improve people's welfare. This is in line with what Suescún (2007) stated that infrastructure spending dominates other forms of public spending (education, health, government consumption, and transfers to rich households) in terms of sizable positive effects on growth, welfare, human development, and the performance of social progress in Latin American countries.

Finally, it can be interpreted that spending on goods/services for infrastructure must be able to encourage economic growth and reduce poverty. Not only by maintaining the value system and procurement system, but also by realizing the Government's procurement of goods/services which has an impact on increasing people's welfare, not only measured by the level of compliance and the amount of the budget that can be realized. Government spending

should be carried out efficiently, effectively and transparently by avoiding collusive tendering so that a higher level of social welfare can be achieved.

State as an entity(entities)The economy seeks to continuously improve the welfare of its people by meeting their needs and desires in a fair manner. Therefore the Government will spend its money to provide these goods and services. Using money to finance the needs of its people as the implementation of the Law on State Finances and Government functions which it refers to as Government spending or Government spending (government spending). Government spending can also be interpreted as the use of money and resources of a country to finance state or government activities in order to realize the welfare of its people. That the state has an obligation to protect its homeland and continuously prosper its people (Noor, 2015). In this case, there is a view which interprets that government spending is influenced by the economy, so that it is endogenous. But on the contrary, there is an opinion that states that government spending affects the economy of a country, so it is exogenous.

In the theory of development economics, between economic development and government spending or spending has a positive reciprocal relationship with a causal pattern. Wagner's law (1893), known as The Law of Expanding State, explained that in a country's economy, if economic development increases, state spending will also increase. According to Adolf Wagner's view, a country's economy is influenced by the large amount of government spending in line with the many affairs that must be financed. Adolf Wagner stated that government spending and government activities are increasing over time as a country's economic development progresses. That if people's income increases, relatively government spending will also increase. Meanwhile Keynes (1936) argued that to improve a country's economy can be done with a fiscal approach in managing government spending. According to Keynes, the greater the government's spending, the more economic development will also increase. Or in other words that government spending increases a country's economy as an instrument of a fiscal approach in managing government spending. Therefore, in the theory of government spending known as the concept of calculating national income with the expenditure approach, it is stated that:

$$Y = C + I + G + (XM)$$

That the identity of the balance of national income is a source of legitimacy for the views of the Keynesians regarding the relevance of government intervention in the economy. From the equation above, it can be seen that an increase or decrease in government spending will increase or decrease national income. This is due to the fact that the concept of the state or government spending on goods/services is better known after the big economic depression (great depression) in 1929.

Previously known in classical theory that economic actors include producers (I) and community households (C). By Keynes it was added to the Government expenditure variable (government spending/G) in economic activity, so that the economy is the identity of  $Y = C + I + G$ . Meanwhile, in the context of macroeconomics, Y is national income; government spending or government spending (government spending/G) is one of the variables forming the Gross Domestic Product (GDP) apart from household sector demand for consumer goods and services (C), business sector demand for investment goods (I), government spending on goods and services (G) and foreign sector spending on exports and imports (XM). Mathematically it can be formulated:  $Y = C + I + G + (XM)$ . (Dumairy, 2006).

Infrastructure in the Big Indonesian Dictionary (KBBI, 2019) can be interpreted as public facilities and infrastructure which are known as public facilities such as hospitals, roads, bridges, sanitation, telephones, and so on. While Infrastructure (infrastructure) by definition Oxford Dictionaries are the basic physical and organizational structures (such as buildings, roads, energy supply) necessary for the operation of society and institutions (Sulistyo S, Santoso, 2018). Furthermore, the definition of Infrastructure according to

American Public Works Association (Stone, 1974 in Kodoatie, RJ, 2005), are physical facilities developed or required by public agencies for government functions in the supply of water, electricity, waste disposal, transportation and similar services to facilitate the purposes of social and economic goals. So infrastructure is a physical system needed to meet basic human needs in the social and economic sphere. Or rather the system Infrastructure can be defined as basic facilities or structures, equipment, installations built and needed for the functioning of social systems and community economic systems (Grigg in Kodoatie, 2003). The Casablanca definition (which is agreed upon by economists) reveals that in general that public infrastructure includes the following sectors: transportation, communications, water and sanitation, electricity and buildings (school buildings, hospitals, courts, prisons and so on).

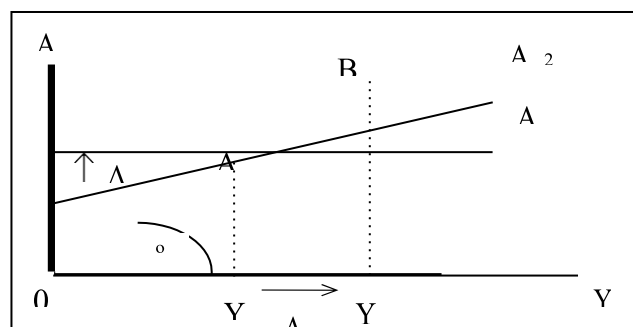
Canning and David stated that infrastructure has the nature of externalities. Infrastructure development such as roads, education and health facilities, bridges, ports, power plants, buildings, sanitation has positive externalities that can increase the level of input productivity in the production process. The positive externality of infrastructure is in the form of spillover effects (spillover effect) which has an impact on increasing the production capacity of companies and the agricultural sector without having to increase capital, technology development workforce. Therefore by building infrastructure, the level of company productivity and results from the agricultural sector will increase. And one of the most visible is road construction (Hapsari, 2011). The development of economic infrastructure is expected to encourage a higher increase in national productivity, namely an increase in the amount of goods and services produced by the population of a country. And in aggregate this is influenced by factors in the form of physical capital, human resources, natural resources and science and technology (Mankiw, 2003). And according to Case and Fair (2004) one of the categories of physical capital is infrastructure or infrastructure development. Therefore, the more facilities and infrastructure that are built, the productivity will also increase. The greater the Government is willing to allocate a budget for infrastructure spending, the greater the amount of goods/services produced. Therefore, there is a correlation between the increase in infrastructure development and community mobility facilities and the increase in production output. This shows that there is a relationship as a relationship between the quantity of input used in production and the quantity of output as a function of production (Mankiw, 2003). And mathematically the model assumes that:

$$Y = AF(L,K,H,N)$$

Information:

- Y = amount of output    H = quantity of human capital
- L = amount of labor    N = quantity of natural resources
- K = quantity of physical capital

Specifically, the relationship between government spending and economic growth is theoretically explained in Keynesian Crosses can be seen in the following figure:



**Figure 1. Effects of Increased Government Spending**  
 Source: Sukirno (2015)

Based on Figure 1, an increase in government spending ( $\Delta G$ ) will increase planned spending by that amount for all income levels. This increase succeeded in changing the balance from point A to point B, which means that there was an increase in income from  $Y_1$  to  $Y_2$ . The increase in income ( $\Delta Y$ ) exceeds the increase in government spending ( $\Delta G$ ). So, government spending has a multiplier effect on economic growth as measured by income or level output.

Economic growth is usually measured by an increase in a country's national income regardless of whether the increase is greater or less than the rate of population growth and changes in economic structure (Arsyad, 1999). Therefore, economically, growth can be described as the growth of Gross Domestic Product (GDP), which Mankiw (2007) views as the amount of income enjoyed by individuals, which also economically constitutes the total expenditure on the production of goods/services. Economic growth is an increase in the monetary value of goods and services of a country during a certain period which is shown for the welfare of the people of the nation. The infrastructure facilities and facilities is also interpreted as an increase in the production of goods and services that apply in a country, such as the increase and amount of production of industrial goods, infrastructure development, increase in the number of schools, increase in production of the service sector and increase in production of capital goods (Sukirno, 2015).

## METHODS

This study uses secondary data analysis methods which cover the provinces in Indonesia which consist of 32 (thirty two) provinces. The time period used is 2008 – 2020 (13 years). Sources of data obtained came from the Government Goods/Services Procurement Policy Institute (LKPP RI), the Ministry of Finance and the Central Bureau of Statistics (BPS).

To answer the first research objective, namely to find out the factors that influence spending on regional infrastructure goods/services in Indonesia, a Panel Data Multiple Regression Equation is used with the following formula:

$$Y_{it} = \alpha + \beta_1PTSK_{it} + \beta_2UMRP_{it} + \beta_3PTPK_{it} + \beta_4PDRB_{it} + \beta_5PAD_{it} + \beta_6TBPP_{it} + e$$

Information:

Y	= DAK Physical Infrastructure Spending (MillionRupiah)
PTSK	= Construction Sector Workforce Growth (%Year)
UMRP	= Provincial Minimum Wage (Thousands of Rupiah)
PTPK	= Construction Support Workforce Growth (%Year)
PDRB	= Gross Regional Domestic Product (thousands of rupiah)
PAD	= Local Own Revenue (Thousands of Rupiah)
TBPP	= Total Provincial Government Spending (Thousands of Rupiah)
e	= Confounding Variables

## RESULT AND DISCUSSION

The panel data regression model consists of three approaches, namely the pooled least squares model, the fixed effect model, and the random effect model. Selection of the right model through the Chow test and Hausman test. Based on the results of the Chow and Hausman tests, the correct model for this research is the fixed effect model. The results of the estimation of the fixed effect model are explained as follows:

1. The panel data regression equation is:

$$Y_{it} = - 167.988,9 - 719,7749PTSK_{it} + 0,666705UMRP_{it} + 0,000750PDRB_{it} - 0,088294PAD_{it} + 4,405E - 05TBPP_{it} + 27.582,49PTPK_{it} + \mu_{it}$$

2. The processed results of the fixed effect model are:

Variable	Coefficient	t-Statistics	Prob.
<b>C</b>	- 167988.9	- 1.736126	<b>0.0834</b>
<b>PTSK?</b>	- 719.7749	- 1.020706	<b>0.3081</b>
<b>UMRP?</b>	0.666705	10.50308	<b>0.0000</b>
<b>GRDP?</b>	0.000750	1.501087	<b>0.1343</b>
<b>PAD?</b>	- 0.088294	- 2.295147	<b>0.0223</b>
<b>TBPP?</b>	4.40E-05	2.147267	<b>0.0325</b>
<b>PTPK?</b>	<b>27582.49</b>	<b>3.937043</b>	<b>0.0001</b>

t-tabel = 1,973  
 Uji-F = 26,59815  
 F-prob = 0,000000  
 F-tabel = 3,97  
 R2 = 0,736815  
 Adj-R 2 = 0,708507  
 Uji-DW = 1,993996

From the results of this study it can be seen that in the number of individual variables in the t-stat test there are several variables that are not significant, namely variables (PTSK and PDRB) with a significance level of more than = 5%. But the Adjusted R-squared value of 0.708507 gives a high value with an R-squared value of 0.736815. The F-stat probability value is 0.000000, meaning that the model is significantly low with a Durbin-Watson stat value of 1.993996 which is included in the range below number 2. The results of the Fixed Effect Model also show that there are 4 significant variables, namely the UMRP, PAD variables, TBPP and PTPK. To calculate the intercept coefficient ( $\beta_0$ ) in each province in the territory of Indonesia can be formulated:

Indonesian province individual intercept = overall intercept ( $\beta_0$ ) + provincial intercept ( $\beta_{0i}$ )

The results of intercepting provincial infrastructure expenditure calculations can be obtained as follows:

$\beta_0$ Provinsi i	( $\beta_0$ ) + ( $\beta_{0i}$ )	( $\beta_0$ ) Provinsi	Rank
<b><math>\beta_0</math> untuk ACEH</b>	= -167.988,9- 140.693,4	= -308.682,3	<b>7</b>
<b><math>\beta_0</math> untuk BABEL</b>	= -167.988,9- 788.694,1	= -956.683,0	<b>28</b>
<b><math>\beta_0</math> untuk BALI</b>	= -167.988,9- 523.181,8	= -691.170,7	<b>25</b>
<b><math>\beta_0</math> untuk BANTEN</b>	= -167.988,9- 715.204,1	= -883.193,0	<b>26</b>
<b><math>\beta_0</math> untuk BENGKULU</b>	= -167.988,9- 182.961,2	= -350.950,1	<b>18</b>
<b><math>\beta_0</math> untuk DIY</b>	= -167.988,9- 437.554,9	= -605.543,8	<b>21</b>
<b><math>\beta_0</math> untuk GORONTALO</b>	= -167.988,9- 478.331,9	= -646.320,8	<b>23</b>
<b><math>\beta_0</math> untuk JABAR</b>	= -167.988,9+ 668.730,6	= 500.741,7	<b>7</b>
<b><math>\beta_0</math> untuk JAMBI</b>	= -167.988,9- 500.055,4	= -668.044,3	<b>24</b>
<b><math>\beta_0</math> untuk JATENG</b>	= -167.988,9+ 1.368.443	= 1.200.454,1	<b>1</b>
<b><math>\beta_0</math> untuk JATIM</b>	= -167.988,9+ 1.007.227	= 839.238,1	<b>4</b>
<b><math>\beta_0</math> untuk KALBAR</b>	= -167.988,9+ 490.952,8	= 322.963,9	<b>8</b>
<b><math>\beta_0</math> untuk KALSEL</b>	= -167.988,9- 329.697,9	= -497.686,8	<b>20</b>
<b><math>\beta_0</math> untuk KALTENG</b>	= -167.988,9- 200.651,1	= -368.640,0	<b>19</b>
<b><math>\beta_0</math> untuk KALTIM</b>	= -167.988,9- 1.154.657	= -1.322.645,9	<b>31</b>
<b><math>\beta_0</math> untuk KEPRI</b>	= -167.988,9- 950.965,3	= -1.118.954,2	<b>29</b>
<b><math>\beta_0</math> untuk LAMPUNG</b>	= -167.988,9+ 236.243,4	= 68.254,5	<b>10</b>
<b><math>\beta_0</math> untuk MALUKU</b>	= -167.988,9+ 13.830,72	= -154.158,2	<b>14</b>

$\beta_0$ untuk MALUT	= -167.988,9- 130.585,0	= -298.573,9	<b>15</b>
$\beta_0$ untuk NTB	= -167.988,9+ 213.663,7	= 45.674,8	<b>11</b>
$\beta_0$ untuk NTT	= -167.988,9+ 1.136.417	= 966.817,1	<b>3</b>
$\beta_0$ untuk PAPUA	= -167.988,9+ 1.362.417	= 1.194.428,1	<b>2</b>
$\beta_0$ untuk PAPUABARAT	= -167.988,9- 671.840,5	= -839.829,4	<b>27</b>
$\beta_0$ untuk RIAU	= -167.988,9- 998.262,9	= -1.166.251,8	<b>30</b>
$\beta_0$ untuk SULBAR	= -167.988,9- 456.669,6	= -624.658,5	<b>22</b>
$\beta_0$ untuk SULSEL	= -167.988,9+ 922.283,5	= 754.294,6	<b>5</b>
$\beta_0$ untuk SULTENG	= -167.988,9+ 285.636,1	= 117.647,2	<b>9</b>
$\beta_0$ untuk SULTENGGARA	= -167.988,9+ 179.607,8	= 11.618,9	<b>12</b>
$\beta_0$ untuk SULUT	= -167.988,9- 9.716,382	= -9.884.370,9	<b>32</b>
$\beta_0$ untuk SUMBAR	= -167.988,9+ 145.872,6	= -22.116,3	<b>13</b>
$\beta_0$ untuk SUMSEL	= -167.988,9- 138.245,1	= -306.234,0	<b>16</b>
$\beta_0$ untuk SUMUT	= <b>-167.988,9+ 880.770,4</b>	= <b>712.781,5</b>	<b>6</b>

From the results of the regression equation above as a whole, these variables can be interpreted as follows:

1. The value of the coefficient  $\beta_0$  for the Province is -167,988.9 meaning that if in the 2008-2020 period there is no change in variables (PTSK, UMRP, PDRB, PAD, TBPP, and PTPK) or assuming constant, then the value of infrastructure expenditure allocation (INFR) for all provinces in Indonesia reduced by Rp.167,988.9 in millions.
2. The PTSK variable regression coefficient ( $\beta_1$ ) obtained a value of -719.7749 meaning that if there is an increase or increase in PTSK by 1 million rupiah, it will decrease Provincial INFR within the territory of Indonesia is Rp.719.7749 in millions assuming other variables remain (*ceteris paribus*) or unchanging or constant.
3. The regression coefficient value of the UMRP variable ( $\beta_2$ ) obtained a value of 0.666705, meaning that if there is an increase or increase in the UMRP of 1 million rupiah, it will increase INFR provinces within Indonesian territory by Rp.666,705 assuming other variables remain (*ceteris paribus*) or no change or constant. This proves that an increase in the provincial regional minimum wage (UMRP) in provinces in Indonesia can improve people's welfare and of course can have greater elasticity in awareness to increase regional income, so that the allocation of regional spending also increases, especially infrastructure spending. However, the increase in infrastructure spending was not too large but very significant for the provincial regional minimum wage.
4. The regression coefficient value of the PDRB variable ( $\beta_3$ ) obtained a value of 0.000750, meaning that if there is an increase or increase in PDRB by 1 million rupiah, it will increase INFR by Rp.750,- assuming other variables remain (*ceteris paribus*) or no change or fixed.
5. The regression coefficient value for the PAD variable ( $\beta_4$ ) is -0.088294, meaning that if there is an increase or increase in PAD by 1 million rupiah, it will decrease INFR by Rp.88,294 assuming other variables remain (*ceteris paribus*) or no change or constant.
6. The regression coefficient value of the TBPP variable ( $\beta_5$ ) obtained a value of 4.40E-05, meaning that if there is an increase or increase in TBPP by 1 million rupiah, it will increase INFR by Rp.44,- assuming other variables remain (*ceteris paribus*) or unchanged or fixed.
7. The regression coefficient value of PTPK variable ( $\beta_6$ ) obtained a value of 27,582.49, meaning that if there is an increase or increase in PTPK by 1 rupiah, it will increase INFR by Rp.27,582.49 in millions assuming other variables remain (*ceteris paribus*) or unchanged or fixed.

From these results it can be seen that provincial governments in Indonesian territory still depend on independent variables, namely variables (PTSK, UMRP, PDRB, PAD, TBPP, and PTPK) in meeting the increase or decrease in the dependent variable, namely the



INFR variable. PTPK was less effective and not significant in increasing or decreasing the INFR variable during the 2008-2020 period. The F-statistic, which is 26.02879, has a greater value than the F-prob, which is 0.000000 which is smaller than the alpha of 5% with an R-square of 73.68%.

By looking at the graphical results we can surmise that there is no heteroscedasticity in the estimation results, where the residuals do not form a pattern. In other words, the residual tends to be constant.

### **Significance Test or Hypothesis Test Partial Test (t-test)**

Based on the partial statistical test with a confidence level of  $\alpha = 5\%$ , the statistical value for the PTSK variable ( $\beta_1$ ) whose value is smaller than t-table ( $1.0207 < 1.973$ ), meaning that  $H_0$  accepted  $H_1$  rejected. This shows that the growth in the construction sector workforce (PTSK) during the 2008-2020 period did not have a significant effect on provincial INFR in Indonesian territory. The construction sector workforce is trained both in theory and practice in order to produce a workforce that is competent in their field. A trained and skilled construction sector workforce will increase their work productivity and this is achieved through education and training based on work competency certification in the construction sector. Therefore construction work is carried out by people or personnel who are competent or have the expertise and credibility to maintain the quality of the results of construction work. But the fact is, that the existence of a construction sector workforce whose number and distribution is uneven in the provinces of Indonesia has had an impact on the productivity and equity of construction work in the regions. And to meet the needs of the workforce, one option is to employ foreign construction workers (TKA). This certainly has an impact on reducing or decreasing the allocation of infrastructure spending and the work productivity of construction workers in Indonesia. Although it must be admitted that the decline is not significant, the construction workforce has an important role in driving the real sector and increasing economic growth by creating jobs, increasing the productivity and competitiveness of construction workers in Indonesia. This is as explained by Muhammad Arvip (2018) that if the allocation of infrastructure capital expenditure has a negative and insignificant effect on the absorbed workforce.

For the t-statistic value for the UMRP variable ( $\beta_2$ ) obtained a value greater than t-table ( $10.501 > 1.973$ ), meaning that  $H_0$  rejected  $H_1$  accepted. This shows that the UMRP has a significant effect on the development or increase in provincial INFR in Indonesian territory. This is because, Indonesia is one of the developing countries that continues to strive for development to improve the welfare of its people, through the development of various sectors, changes or transformation of infrastructure. One of the efforts is to build infrastructure in the regions according to the national priority scale (through DAK funds) to encourage regional development, in an effort to strengthen national development, to build inter-regional connectivity. Therefore, national development and regional development are collaborative in nature, must complement each other and have a very close relationship; both mutually support each other, namely between the center and the regions. This certainly has an impact on the demand for labor and the flow of migration to cities, as centers of growth and industry in line with the increase in labor supply and workers' wages in the province (UMRP). The improvement in wage rates and the flow of workers to cities illustrates that if the provincial minimum wage (UMRP) increases, it is expected that the welfare level of the workforce will also increase and work productivity will also increase. The condition of the workforce that is prosperous or that their needs are met does not make them carry out actions or demonstrations and work strikes which result in decreased productivity levels and investors are reluctant to invest in Indonesia. Therefore the government's efforts to increase the allocation of infrastructure spending are to increase the range of economic activity,

facilitate the mobility of goods/services, connecting inter- regional access by land, sea and flight (air) highways. This will presumably encourage the business sector and production processes to become efficient and competitive because they are supported by good infrastructure that connects and is provided by the regions and the impact is that in the long term it will reduce income inequality and reduce migration flows, especially for low and middle-income people due to improvements the level of wages and purchasing power of workers as found by Muara Nangarumba (2017).

While the t-statistic value for the PDRB variable ( $\beta_3$ ) obtained a t-statistic value that is smaller than t-table ( $1.501 < 1.973$ ), meaning that  $H_0$  accepted  $H_1$  rejected. This shows that GRDP has no significant effect on the development or increase in provincial INFR in Indonesian territory. One indicator to see economic development is to measure economic growth or fiscal development of the production of goods and services that apply in a country, such as the increase and the amount of production of industrial goods, infrastructure development, increase in the number of schools, increase in production of the service sector, and increase in the capital goods industry. which can be measured using the Gross Regional Domestic Product. Infrastructure spending is budget expenditure for the acquisition of fixed assets and other assets that benefit more than one accounting period. The regional government allocates funds in the form of infrastructure spending in the APBD and through DAK Fisik to add fixed assets that have a direct impact on physical or building development that can generate added value to the Gross Regional Domestic Product. However, that PDRB not effective in increasing infrastructure spending in general, but on the contrary that infrastructure spending is an indicator of increasing PDRB. So that it can be said that PDRB has no significant effect on increasing infrastructure spending in Indonesia because infrastructure spending is part of efforts to increase PDRB in the regions. This is in accordance with research conducted by Sibarani (2002) which explains that road infrastructure has no significant effect on the income per capita of the Indonesian people. It is also supported by the research results of Tino Handayani, Didik Susetyo, and M. Syirod Saleh (2017) which states that the long road infrastructure has a significant effect with a negative relationship to the Gross Regional Domestic Product (GDP). The results of Dyah Amalia's research (2019) also explain that road infrastructure variables have no effect on PDRB per capita. This is because there is no significant increase or decrease in road length every year.

For the t-statistical value for the PAD variable ( $\beta_4$ ) obtained a value greater than t-table ( $2.295 > 1.973$ ), meaning that  $H_0$  rejected  $H_1$  accepted. This shows that PAD has a significant effect on the development or increase in provincial INFR in Indonesian regions. The ability of a region to explore or obtain sources of PAD revenue will affect regional development and development in the territory of Indonesia. Although there is no guarantee that increasing PAD will have an impact on increasing budget allocations for infrastructure. What often happens is that an increase in the amount of PAD actually reduces the allocation of infrastructure spending. This is due to the fact that many provincial regional governments have focused more on financing personnel spending in improving people's welfare. Even though it can be seen that infrastructure development has a real impact on increasing regional taxes and fees because the fulfillment of the quantity and quality of services and public facilities that are built will make the community feel comfortable and fulfill their business needs efficiently and effectively. This will have an impact on increasing participation and contribution in development. For this reason, local revenue (PAD) must be managed and utilized effectively, on target and optimally. We know that transparent and accountable Regional Original Revenue (PAD) governance will have implications for trust and increased infrastructure development in Provincial Governments in Indonesia in an effort to improve services to the community. That PAD has a positive influence on capital

spending and infrastructure development, including indirect spending. Namely, expenditures made in the context of capital formation which are added to fixed assets/inventory that provide benefits for more than one accounting period. This finding supports Abdul Samid Hidayatulloh's study (2019) which explains that PAD has a significant effect on capital expenditure which indicates that the greater the regional original income in a region, the higher the level of capital expenditure. Also the findings of Hartati Dewi and I Gede Wardana, (2021) which state that local revenue and balancing funds have a positive and significant effect on direct spending.

For the t-statistic value for the TBPP variable ( $\beta_5$ ) obtained a value greater than t-table ( $2.147 > 1.973$ ), meaning  $H_0$  rejected  $H_1$  accepted. This shows that TBPP has a significant effect on the development or improvement of provincial INFR in Indonesian territory. It can be seen that regional spending allocations are actually able to increase provincial infrastructure spending in Indonesian territory. However, it often happens that regional expenditure allocations tend to be spent by the provincial government by prioritizing indirect expenditures or for personnel expenditures. As a result, allocation spending on infrastructure did not increase or was relatively small. Therefore the allocation of DAK Fisk is very important in the effort to build regional infrastructure according to national priorities. This is as stated by Wibisono (2012) that the greater the productive local government expenditure, the greater the economic level of a region as measured by the total routine expenditure and development expenditure allocated in the regional government budget (APBD).

For the t-statistic value for the PTPK variable ( $\beta_6$ ) obtained a value greater than t-table ( $3.937 > 1.973$ ), meaning that  $H_0$  rejected  $H_1$  accepted. This shows that PTPK has a significant effect on the development or improvement of provincial INFR in Indonesian territory. It can be seen that an increase in construction sector jobs can boost the production capacity of its supporting industries, for example the manufacturing, food, transportation services, security and so on industries will also increase. The availability of an abundant supporting workforce in the construction sector has an impact on the need for investment and labor productivity. Including foreign investors or foreign investors will be more interested in investing in Indonesia, if the local government also provides adequate infrastructure needed by investors. Therefore, if the production process is smooth and efficient because it is driven by the availability of good infrastructure in the area, it will certainly make investors comfortable in investing their capital. Increasing infrastructure development will have implications for the need for a productive support workforce in line with increased development in the construction sector and increased investment in Indonesia. This presumably supports the findings by Eko Prasetyo (2011) and Phany Ineke Putri (2014) which state that labor variables have a positive and significant effect on economic growth.

### **Simultaneous Test (F-Test)**

Based on the equation described earlier, the calculated F-value is greater than the F-prob ( $26.02879 > 0.000000$ ) at a confidence level of  $\alpha = 5\%$ . That is,  $H_0$  rejected and  $H_1$  accepted. This shows that together the variables PTKS, UMRP, PDRB, PAD, TBPP and PTPK have a significant effect on the rise or fall of provincial INFR in Indonesian territory during the 2008-2020 period.

### **Determination Coefficient Test (R<sup>2</sup>)**

From the results of the calculation of R-squared shown in the equation above, the value of  $R^2$  is obtained of 0.736815. This shows that around 73.68 percent of the rise and fall of provincial INFR in Indonesian territory during the 2008-2020 period was influenced by changes in the PTKS, UMRP, PDRB, PAD, TBPP and PTPK variables. While the

remaining 26.32 percent is explained by other variables not included in the regression equation.

## CONCLUSION

Provincial Regional Minimum Wages, Construction Support Workforce Growth, Local Own Revenue, and Total Provincial Government Expenditure are factors that have a significant influence on goods/services spending on infrastructure, especially those financed by special allocation funds (DAK). Meanwhile, the construction workforce growth factor and provincial PDRB have no effect on spending on goods/services for infrastructure.

Based on the results of the research, suggestions to the Central and Provincial Governments need to do:

1. Increasing the Provincial Minimum Wage on a regular basis and adjusted to the inflation rate and regional economic growth so that this wage becomes an attraction for working in the construction sector to build regional infrastructure.
2. Development of an education and training center for construction support workers, especially a center for construction design services and a construction business which is a support for construction implementation in the field to build infrastructure in the region.
3. The provincial government needs to increase PAD sourced from taxes, regional levies, BUMD profits and regional asset management.
4. The government must prioritize the policy of spending on goods/services for infrastructure development aimed at programs related to poverty and unemployment reduction activities. Productive and labor-intensive infrastructure development.

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