

DETERMINANTS OF LABOR DEMAND; EMPIRICAL EVIDENCE  
FROM EAST KALIMANTAN

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**Abstract**

*This study aims to examine the impact of revenue sharing of natural resource, capital expenditure realization from the government, gross fixed capital formation and length of roads on population 15 Years of age and over who worked as proxy Labor in East Kalimantan period 2001-2013. This study found that revenue-sharing funds have a positive and significant impact on the increase in the number of workers. The Effect of Capital Expenditure on the rise of manpower indicates a positive sign and significant on growth of labor. The Effects of Investment on Labor Improvement shows a positive and significant sign of direction. The influence of road infrastructure on the rise of manpower indicates the direction of the sign which is also positive and significant.*

**JEL Classification:** J20, J23, J24

**Keywords:** capital expenditure, labor, East Kalimantan, revenue sharing of natural resource

**1. INTRODUCTION**

East Kalimantan's economy has been largely contributed by the non-renewable resource-based activities (mining-based and oil and gas-oriented processing industries). Different conditions occur in the small agricultural sector whose role is only 6.1 percent of the formation of Gross Regional Domestic Product (GRDP).

The important phenomenon here is whether the "dominant" sector has major implications and magnitude in creating jobs. If we look at the performance of the Gross Regional Domestic Product and the employment performance, it shows that the mining and quarrying sectors, as well as the oil and gas processing industry sector, provide substantial economic benefits to the Gross Regional Domestic Product of East Kalimantan. However, in terms of employment is not the same result. If we compare the two sectors, namely the mining and quarrying sector which controls the share of East Kalimantan GRDP and the agricultural sector which contributes very low to East Kalimantan GRDP, the mining sector's dominance is only able to absorb one-fourth of the ability of the agricultural sector to absorb labor. This means there has been an imbalance of economic structure in East Kalimantan.

The average working population in the mining and energy sector is only 4.63 percent. While in industrial sector also only equal to 8,22 percent (data BPS Kaltim, 2010, based on result of National Labor Force Survey). In addition, the agricultural sector accommodates the highest proportion of workers with an average of 34.36 percent. It is also followed by trade and services sectors which absorb an average of 20 percent and 16 percent of the work force in East Kalimantan.

Inequality in the output of this economic sector is a problem in addition to the income inequality previously described. In one side, the mining sector and the oil and gas sector control the structure of the economy, but on the other hand the sector has the lowest ability to absorb its workforce.

There is an anomaly in the East Kalimantan economy, that the economic sector that determines the East Kalimantan GRDP is not very big in its role in increasing the number of workers, on the contrary the sector whose role is less determinant of GRDP actually increases the number of manpower in significant amount. Wijaya (2012) found that the agricultural sector does absorb high labor but has no high effect on increasing household income.

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In the case of agriculture in East Kalimantan, the large number of workers and the low level of education of the workforce resulted in lower labor productivity in the agricultural sector than the productivity of other sectors. This will affect the income level of the workforce, especially the average wage. While one of the strategic issues in Medium Term Development Plan (RPJM) of East Kalimantan 2009 - 2013 is the quality and productivity of workers is still low, because the background of job seeker education in 2009 about 44.7 percent is high school. So the paradox is that on the one hand the dominant sector in East Kalimantan is capital intensive, but on the other hand the supply of labor is filled by unskilled and low-educated characteristics of labor (low-skilled and low-educated).

The large number of workers dependent on the agricultural sector in a broad sense is one of the reasons for the need to improve the performance of the agricultural sector in East Kalimantan. Ideally how the performance of the agricultural sector is linked to industrial activities, thus impacting increased employment and income that will affect their welfare. It is also relevant to regional development priorities that place the agricultural sector as a second pillar and embodied in East Kalimantan's development mission, which is also supported by development in other sectors simultaneously..

This study aims to examine the impact of revenue sharing of natural resource, capital expenditure realization from the government, gross fixed capital formation and length of roads on population 15 Years of age and over who worked as proxy Labor in East Kalimantan period 2001-2013. This study contributes in looking at the role of fiscal decentralization for the improvement of manpower in East Kalimantan.

## **2. LITERATURE STUDY**

Clark & Fisher's theory also explains the relationship between production structure and labor structure by sector. According to this theory, the higher the income of a region the lower the role of the agricultural sector in absorbing labor. In contrast, the ability of the industrial sector is increasingly vital as a container for labor. This situation occurs because the population is able to buy (purchasing power) or make a final demand (consumption), so that in the end will lead to changes in production structure in accordance with the shift in demand. That is the shift of employment opportunities and the allocation of funds from the primary sector to the secondary and finally to the tertiary.

The demand-side transmission pattern that affects economic transformation refers to Engel's law regarding the elasticity of demand for food on income changes. The law of Engel says the elasticity of demand for food is less than the elasticity of demand for non-food. This behavior has had a major impact on the acceleration of economic transformation.

Chenery and Syrquin (1975) agree with Clark-Fisher, that per capita income plays an important role in the process of structural transformation in a country. Chenery-Syrquin shows quantitative analysis results between per capita income relationships and percentage contribution of economic and industrial sectors.

Initial structural transformation occurs from demand-side changes due to per capita income and the prevalence of income distribution. Transformation of demand leads to changes in the structure of GDP (production) and trade. It will ultimately lead to changes in the structure of the returning workforce resulting in increased incomes and changes in income distribution. In addition to per capita income, things that also reflect the economic transformation are changes in the structure of domestic demand, production structure, trade structure (export-import), demographic process and income distribution.

Because generally speaking the ideal conditions, the theory of Clark-Fisher and Chenery-Syrquin is tested by several studies in Southeast Asia, especially Indonesia. Research Sitanggang and Nachrowi (2004) found that the agricultural sector in

Indonesia works best in absorbing labor even though wages in these sectors tend to be low. Their research also found a trend of sector transformation, from agriculture to industry and trade services in several major provinces in Indonesia.

The characteristic of the economic sector in Indonesia does appear to be shifting from traditional agriculture-based sectors to modern manufacturing industries in urban areas. Sudihartono and Muhyiddin (2008) studied during the years 1984-2004, Indonesia has been toward the era of semi-industrialization. This is suspected to be stronger, since the period 1990-2004, where there is a massive movement of labor from the agricultural sector to the manufacturing industry. Their research proves that demand-side effects on the output of the economic sector (agriculture and industry) increase employment in both sectors. The wage variable has no significant effect on the absorption of labor in both sectors.

Tran and Doan (2010) prove the circumstances in which there is a relationship between the composition of the economic sector and its changes to employment. His research in Vietnam presents the effects of industrialization on the sectors of the economy and employment during the economic transition in Vietnam. Although Vietnam has made significant progress in changing the output performance of the economic sector in which the share of agricultural contribution in GDP has declined drastically over the last two decades, the labor structure has not rapidly changed as its economic structure. As a result, most of the labor force is still in the agricultural sector. Economic reform is less effective to shift workers from the agricultural sector because most state investment has been allocated to capital-intensive industries. These results are relevant to those studied by Sitanggang and Nachrowi (2004) and Sudihartono and Muhyiddin (2008) in Indonesia.

### **2.1. Revenue sharing of Natural Resource on Labor Growth**

The revenue share fund consists of tax-sharing and non-tax sharing. Tax Sharing Funds are part of regions derived from taxes on land and buildings, land and building tax charges, income tax articles 25 and 29 indebted personal taxpayers and income tax article 21.

According to Prasetya (2011), many countries use a tax-sharing system by distributing a fixed percentage of certain national taxes, such as income tax or value-added tax to local government. To increase the regional income in the framework of financing the implementation of the functions under its authority is done with the revenue sharing pattern of tax and non-tax (Natural Resource) between the central and regional.

The allocation of Profit Sharing Funds is carried out in line with the implementation of regional autonomy since the existence of Law no. 25 of 1999 on Central and Regional Financial Balance as amended by Law Number 33 Year 2004 regarding Financial Balance Between the Central Government and Local Government.

Research from Sinaga, et al (2005) in Indonesia found a positive effect of profit-sharing funds on employment performance. This result is in line with findings from Faridi, et al. (2012) which reveals the positive effect of fiscal decentralization by employment in its study in Pakistan. Then Pujiati (2010) proves the positive influence of profit-sharing funds on economic growth and employment.

### **2.2. Impact Capital on Labor Growth**

Bagdigen and Centitas (2003) in his research in Turkey to test the effect of public expenditure using the Data Panel Regression found no evidence of causality that occurs either public spending to the economy (proxied by GDP growth). In the case of Indonesia, Aritenang (2009) found the effect of government spending on the case of Indonesia negatively affect the absorption of labor. This is because spending is spent on regular financing such as salaries. Meanwhile, Setiyawati and Hamzah (2007), also in Indonesia, using the Path Analysis approach, found that development spending had

a positive effect on the indirect employment through economic growth. Furthermore, economic growth negatively affects unemployment and poverty.

### **2.3. Impact investment on Labor Growth**

Jayaraman and Singh (2007) by taking cases in the Fijidan Islands countries using foreign direct investment variables also strengthened Dasgupta and Shimamora's findings which he found that through FDI not only covers the effects arising from job creation in the sectors of the economy, sectors attracting overseas investors, but also additional employment opportunities in support sectors, especially all production-oriented activities in the economy. This is also reinforced by research from Carmen, et al. (2007) with data of 70 thousand companies in 107 countries whose research shows the strong composition effect of foreign investment on employment. Banerjee (2006) in a case in China concluded there was a positive and tangible influence of foreign investment on the economy in China.

Further studies from Deepak (2012) in the Special Economic Zone (KEK) in Indiamengungkap that investment from domestic and abroad have a positive impact on job creation opportunities. Especially if followed by an increase in infrastructure facilities with an emphasis on generating additional economic activity.

Meng Wen, et al. (2013) China FDI Investment Panel regression does not find any evidence that FDI in China contributes to employment and skill enhancement to the parent company. Waldkirch, et al. (2009) Mexico FDI Investment Regression is a real positive impact in employment, especially in the manufacturing sector. Rizvi and Nishat (2009) in the Asian Region, sampled FDI investments from three countries namely Pakistan, India and China to find that FDI has no impact on job creation in Pakistan, India and China.

### **2.4. Impact Length of Roads on Labor Growth**

Dalenberg, et al. (1998) in his research on the impact of public capital on good economic circumstances often focuses on estimates of production functions, but such approaches face some important economic relations. Their research presents estimates designed to measure the impact of public capital on labor. The results found a positive spillover impact. Where the simulation results showed an effect to the increase in employment.

Maisonave, et al. (2013) conducted research in South Africa and found that an increase in investment spending financed by tax increases has contrasted implications on unemployment. In the long run, unemployment declined for all types of workers under one of the scenarios. In the short term, only basic occupation workers benefit from the decrease in unemployment, as the rest, unemployment increases. Findings have direct policy implications in various areas of policy modeling.

Jiwattanakulpaisarn, et al. (2012) found a positive but not tangible toll road infrastructure link to employment in North Carolina, USA. Unlike the case with Pollin's findings, et al. (2009) who also conducted research in the United States found that the development of infrastructure is beneficial for the absorption of manpower in the country. These findings are consistent with the Gibbons study, et al. (2012) stating that road infrastructure improvements positively impact employment through private / corporate sector transmissions. Their findings were conducted in the countries of Britain during 1998-2007.

## **3. RESEARCH METHODS**

### **3.1. Research Design**

This research uses explanatory approach. According to Sekaran and Bougie (2009), explanatory research is a study that aims to test the revelation (hypothesis) of a theory or empirical model ever used in research to strengthen or reject the hypothesis. Testing of this hypothesis refers to the relationship of Revenue sharing of Natural Resource, capital expenditure realization from the government, Gross Fixed Capital

Formation and Length of Roads which are all independent variables (determined outside the model) in this study. While the dependent variable is population 15 Years of age and over who worked as proxy Labor in East Kalimantan period 2001-2013..

### **3.2. Location and Time of Study**

The location of this research is in East Kalimantan Province, Indonesia. Researchers analyzed the districts and municipalities consisting of 13 districts and cities (excluding Tana Tidung Regency and also Mahakam Ulu Regency area since it was only split in 2014).

### **3.3. Types and Data Sources**

The type of data used in this study is secondary time-shaped data (time series) yearly from 2001-2013 in each district / city (as many as 13 districts / cities). The data to be analyzed comes from the majority of the World Bank / World Bank through Indonesia Database for Policy and Economic Research (INDO DAPOER). INDODAPOER data is actually a World Bank compilation of Central Bureau of Statistics of Indonesia data at district and city levels. Some of the data required in this study will refer to the variables formed in the model:

1. Data on realization of Revenue sharing of Natural Resources (in billions of rupiah);
2. Data on capital expenditure realization from the government (in billions of rupiah);
2. Investment data (proxied using Gross Fixed Capital Formation)
3. /PMTB) in billions of rupiah p;
4. Length of Roads by Regence/Municipality (Km);
5. Data of population 15 Years of Age and Over who Worked as proxy Labor (person)

### **3.4. Analysis tool**

Multiple regression analysis is a tool used to analyze the closeness of the relationship between variables quantitatively. Multiple regression analysis using Ordinary Last Squar method which will produce a model that will be used to know the relation between independent variable to depedent variable. Before making the model / equation as a guide in estimating the variables, the model must be validated first based on the accuracy, accuracy, and validity of the model according to Yudaruddin (2014: 121). The research equation as follows:

$$\text{LABOR} = \beta_0 + \beta_1 \text{RSNR} + \beta_2 \text{INV} + \beta_3 \text{CAPITAL} + \beta_4 \text{LOR} + e$$

Where:

LABOR = Population 15 Years of Age and Over who Worked

RSNR = Data on realization of Revenue sharing of Natural Resources

CAPITAL = Capital expenditure realization from the government

INV = Gross Fixed Capital Formation

LOR = Length of Roads

$\beta$  = Intercept

$\beta_0 \dots \beta_4$  = Regression coefficient

$e$  = Error

The coefficient of determination indicates the percentage of the predicted truth level of the regression model. The value of the coefficient of determination ( $R^2$ ) states how large the independent variable can explain the dependent variable in the regression model. While the rest ( $100\% - R^2$ ) can be explained by other causes other than independent variables outside of the study. F test is used to test the influence of independent variable to the dependent variable. Hypothesis testing used in this research is T-Test. T test is called partial regression test is done to know the significance of each independent variable to dependent variable. This classical assumption test aims to determine whether in the regression model really shows a significant and representative

relationship, then the model must meet the following classical assumptions: normal distribution, no multicollinearity, heteroskedasticity, and autocorrelation.

#### **4. RESEARCH RESULTS**

Descriptions of all the variables are listed in Table 1. Overall the mean values of all the variables are smaller than the standard deviation such as revenue sharing of natural resource, capital expenditure realization from the government, gross fixed capital formation, length of road and labor. This finding provides information that the mean value of each variable still represents of each variable analyzed. Overall, the variable is a normal distribution variable.

Table 1 Descriptive statistics

Variable	Mean	Std. Dev	Minimum	Maximum	Obs.
LABOR	737.9566	680.89333	28.4	4549.34	169
RSNR	444.4047	354.03787	63.53	1944.77	169
INV	0.0026702	0.00272568	0.00011	0.01282	169
CAPITAL	134.568	102.22732	2	620	169
LOR	98046.3669	75880.55991	17760	325613	169

Table 2 Correlation Matrix for the Explanatory Variables

	DBA	INV	CAPITAL	INF
RSNR	1.0000			
INV	0.733**	1.0000		
CAPITAL	0.226**	0.173*	1.0000	
LOR	0.166*	0.253**	0-.097	1.0000

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

The relationship between the independent variables showed multicollinearity on the model. Table 2 provides information on the correlation between the independent variables. The matrix shows that in general the correlation between the explanatory variables is not strong, suggesting that multicollinearity problem is not severe.

The model of multiple linear regression equation in this research to see the effect of dependent variable with independent variable by using F test and t test to know the significance of the influence of independent variable to dependent variable. Based on the results of multiple regression analysis obtained results as listed in table 3 below:

The value of R is 0.538 this indicates that the relationship of independent variables collectively to the dependent variable indicates the degree of the relationship being. In addition R Square is 0.289, it shows that 28.9% variation of dependent variable can be explained by independent variable, while the rest 71.1% is explained by other variable not included in this research model.

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Table 3 Regression Results

Variable	Coefficients	Std. Error	t	Sig.	Note
<i>Constan</i>	41503.535	10635.378	3.902	.000	
RSNR	41.134	10.905	3.772	.000	Sig
INV	9.399	21.166	.444	.658	Not Sig
CAPITAL	7645660.454	1901752.961	4.020	.000	Sig.
LOR	11.850	51.079	.232	.817	Not Sig
R					0.538
R Square					0.289
Adjust R Square					0.272
F-Hitung					16.664
F Signifikan					0.000

Table 3 shows that the F value is 16.664 and this result is greater than F table with probability 0.000. Because the probability is smaller than 0.05, the regression model can be used to predict the Labor variable or in other words that of the four independent variables RSNR, INV, CAPITAL and LOR simultaneously or simultaneously have an effect on LABOR and have shown goodness of fit model.

Natural Resource Outcomes to income inequality through the performance of the primary economic sector and the increase in workforce are positive. This means that through the primary sector effect and the increase of manpower has a positive impact on income inequality in East Kalimantan. This result comes from the direct positive effects of Revenue Sharing Funds to the primary sector, which in turn the primary sector negatively affects labor absorption, although in the end the increase in labor has a negative impact on income inequality in accordance with the hypothesis. These findings indicate that the indirect effects of fiscal decentralization through the primary sector and the increase in manpower do not potentially reduce income inequality, it is likely to increase the income inequality that occurs.

The Effect of Capital Expenditure on the increase of manpower indicates a positive sign and significant on growth of labor. These results support with the hypothesis that accelerated fiscal decentralization of capital expenditure actually improves the performance of the economy in the aspect of increasing the workforce created. This negative direction does not support previous studies by Sodik et al (2007), Setiyawati and Hamzah (2007), Aladejare (2013) find a positive relationship between the two variables.

The Effect of Investment on Labor Improvement shows a positive and significant sign of direction. This shows that the size of investment will greatly affect the absorption of labor. In this case the results support the hypothesis that the accelerated fiscal decentralization of investment will improve the performance of the increased labor force created. These results support eg empirical studies from Banerjee (2006) in cases in China, Jayaraman and Singh (2007), Waldkirch, et al. (2009), Deepak (2012) in the Special Economic Zone (KEK) in India. On the other hand it does not support those found by Rizvi and Nishat (2009) in the Asian Region

The influence of road infrastructure on the increase of manpower indicates the direction of the sign which is also positive and significant. This shows that improved road infrastructure in East Kalimantan will improve employment performance. Infrastructure development is usually a multi-stakeholder development and dependent on human labor (labor-intensive). Of course this has a positive implication on employment. The conclusion of the results of this analysis means supporting the hypothesis that infrastructure improves employment. Roads as a Public Capital

existence is determined by how much government spending to increase the length and improvement of road conditions Government spending in the field of road infrastructure development will affect the economy, government spending on road infrastructure is an investment that can create and increase economic activity where the existence of investment will creating new production factors, which will create new jobs.

## **5. CONCLUSIONS AND RECOMMENDATIONS**

### **Conclusion**

This study aims to examine the impact of revenue sharing of natural resource, capital expenditure realization from the government, gross fixed capital formation and length of roads on population 15 Years of age and over who worked as proxy Labor in East Kalimantan period 2001-2013.

The location of this research is in East Kalimantan Province, Indonesia. Researchers analyzed the districts and municipalities consisting of 13 districts and cities. Multiple regression analysis is a tool used to analyze the closeness of the relationship between variables quantitatively.

This study found that revenue-sharing funds have a positive and significant impact on the increase in the number of workers. The Effect of Capital Expenditure on the rise of manpower indicates a positive sign and significant on growth of labor. The Effects of Investment on Labor Improvement shows a positive and significant sign of direction. The influence of road infrastructure on the rise of manpower indicates the direction of the sign which is also positive and significant.

### **Recommendation**

Local governments should make more transparent schemes in spending public funds, encourage inclusive use of public funds through the empowerment of the people's business sector (Micro, Small and Medium Enterprises), and build an inclusive industrial base that can be accessed by all communities in East Kalimantan in order to grow labor.

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