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Labor Demand and the Elasticity of Job Opportunity: Evidence from Indonesia

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ABSTRACT

Objective – Labor is one of the most important factors in production activities. Increased human effort in the production process will increase output, productivity and promote economic growth. This research aims to analyze the condition and potential of labor demand in Pontianak City, analyze job opportunities in Pontianak City and formulate a strategy of labor policy in Pontianak City.
Methodology/Technique – The method used is descriptive with quantitative analysis which a qualitative interpretation. The data used is secondary data and related documents for data enrichment.
Findings – The results show that: labor demand is showing an increasing trend year by year, increasing employment absorption from 233,788 in 2010 to 244,236 in 2014. The rate of absorption growth occurs primarily in the agriculture, building and transportation industries. Employment elasticity in Pontianak City is relatively low at only 0.02% which means the growth of labor absorption is smaller than the increase of economic growth.
Novelty – This research shows that employment policy strategies in Pontianak City need to increase the role of Training Center (BLK), the enrichment of nutrition improvement and sustainability, encourage investment, increase competitiveness through increasing labor productivity and increase labor flexibility to the rules among other things.
Type of Paper: Empirical.

Keywords: Employment Demand; Employment Elasticity; Employment Policy Strategy.

JEL Classification: J20, J21, J29.

1. Introduction

1.1 Research Background

Economic development is a series of government policies aimed to reach a positive goal which affects the welfare of society. It aims to improve the standard of living, broaden job opportunities (by balancing it with the increase of employment), and guide income distribution among various local regions (Siburian, 2013).

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The increase of PDRB tends to cause an increase in the price of goods and services. This means that the demand for goods and services will increase. Changes in the rate of production requires more production factors, such as capital and labor. The higher the PDRB of a region, the more labors it needs to increase production. This demonstrates the influence of Regional Gross Domestic Bruto (PDRB) on labor absorption. That influence means that a higher PDRB (or economic growth) will also increase the labor absorption of a region. Therefore, the definition of labor can also be understood as the demand for labor (Kuncoro, 2003: Sukirno, 2010). Theoretically, high economic growth will also lead to high employment. However, in Pontianak City, there is high growth and high unemployment.

Absorbed labor is commonly spread in various economic sectors that produce goods and services. Each sector has its respective growth pace and different capacity with respect to labor absorption. Firstly, each sector has its own productivity pace. Second, sectoral change occurs gradually, either through labor absorption or its contribution to national income (Simanjuntak, 2001).

Furthermore, West Kalimantan has recorded the highest labor absorption rate for the Pontianak Regency (304,761 people) and the lowest is recorded in Singkawang City (63,363 people). However, the highest poverty rate is recorded in Landak Regency (18.65%) and the lowest is in Sanggau Regency (6.25%). This shows that a high level of labor absorption rate does not guarantee a low poverty rate.

In Pontianak, the number around 13,818 people were unemployed in 2012 (or 5.35%), 16,166 (or 6.12) in 2013 and 18,514 (or 7.05%) in 2014. The rising rate of employment is not in line with the fluctuation and decreasing labor absorption rate. Meanwhile, the economic growth in Pontianak is fairly high, around 6.07% in 2012, 6.92% in 2013, and 6.52% in 2014. This demonstrates that whilst economic growth is high and increasing, the unemployment rate is also rising. This means the economic growth has no impact on labor absorption.

Based on the above information, strategies for the labor field are needed to improve labor absorption through various approaches, namely: creating new opportunities, intensifying the labor-intensive field, improving workers' skills, and others. To reduce the unemployment rate through labor absorption, an analysis of labor demand and job opportunity elasticity in Pontianak City is required.

This research is expected to contribute to the development of the theory of labor demand and the elasticity of employment opportunities, to be considered by the government in developing employment policies in Pontianak City.

1.2 Research Objectives

This research aims to analyze the conditions and potential of labor demands in Pontianak City, to analyze job opportunity elasticity in Pontianak City and to formulate a strategy for employment policy in Pontianak City.

2. Research Methodology

This study employs a descriptive method to describe a certain condition or phenomenon as it is. Additionally, the data is analyzed both quantitatively and qualitatively. The data collection process for the secondary data is conducted directly at the National Statistics Bureau (BPS) in Pontianak City. Moreover, other documents and literature are also used to enrich the data.

The analyzed data is a combination of time series and cross-sectional data. The time series data consist of 5 years of data (2010-2014), while the cross-sectional data includes 8 economic sectors, namely: agriculture, processing industry, electricity and water, building, trade, hotel and restaurant, transportation and communication, finance, rent and company service, and other services.

The data is then analyzed using a percentage analysis and is interpreted quantitatively. The analysis of the condition and potential of job demands encompasses economic growth rates, labor absorption, and job absorption for each sector. The analysis of job opportunity elasticity encompasses economic growth rate ratio

and job opportunity change. The analysis of policy strategy for employment encompasses education and training, sectoral intensification method, and many others.

The analysis method uses the following formula:

$$Ed = \frac{\text{Growth of labor rate}}{\text{Economic growth rate}} \times 100\% \quad (1)$$

3. Theoretical Framework

The Theory of Demand explains the relationship between demand and price. Labor demand explains the relationship between wage rates and the quantity of labor expected by the employers (businessmen) to be employed (bought). In other words, the increase of company demand on labor depend on consumer demands for the goods and services. Such labor demand is called derived demand (Simanjuntak, 1985, Fariastuti 2004, Ruby, 2003, Borjas, 2010, Mankiw, 2006, Mcconnell, 1995).

Sudarsono (1988:35), as cited in Subekti (2007), states that labor demand is related to the amount of labor needed by a certain company or institution. This demand is influenced by changing wage rates and other factors influencing production such as the increase/decrease of market demand. The increase or decrease of demand is reflected through the production value and the price of goods (machines or tools used during production).

Nizar et al. (2013) shows that the results are significant between FDI, government investment and labor towards economic growth. Meanwhile, the results of a study by Sumardin, et al. (2004) shows that high wages will affect productivity and in turn increase economic growth. Potential sectors are expected to fulfill high demand on labor which is important for development, as it reduces unemployment, alleviates poverty, and improves the economy.

In addition to the GDP indicator, several other developmental economists use indicators of production and absorption of labor (employment) and further develop into a trickle down effect theory (Jamaliah and Said; 2017). According to Sumarsono (2003:105), as cited in Subekti (2007), labor demand is related to the number of laborers needed by a company and the influencing factor of labor absorption is wage rate. In the framework of the macro-economy, aggregate output demand is frequently measured by the sources of economic growth (PDB/PDRB) (Todaro, 2009; Mankiw, 2003). Therefore, the aggregate labor demands are not only influenced by wage rates, but also by other sources of economic growth, namely consumption, investment, government spending, exports, and imports. Moreover, Mankiw (2003) argues that an increase in labor productivity is an essential factor to create economic growth, as it reflects efficiency and technological advancement.

Technological advancement and the increase of labor productivity are frequently mistaken as causes of a reduction in job opportunities. However, Nordhaus (2005) and Siregar (2006) found that technological advancement in labor-intensive fields (such as agriculture and agribusiness) actually elevates labor absorption. The increase of productivity and competitiveness in a certain sector will result in a more competitive price, thus, it will increase the demand for the product. This demand will later result in increased labor absorption. Donziger Leif (2006) modeled the relationship between people willing to work with minimum wages in the labor market. He states that the minimum wage rate would make the worker choose whether to work several hours a day and whether to take a break. If the minimum wage increases, workers will be willing to work more hours in the day, and vice versa.

According to Sumarsono (2009:39), the elasticity of employment at any point on the downward demand curve from the top left to the lower right will be different and negative. The magnitude of the coefficient of employment elasticity is divided into 3 types, to determine the extent of the effect of the wage changes on the changes in the labor demanded, if: ETK > 1, ETK <1 and ETK = 1.

In the method of employment elasticity analysis as stated by Sumarsono (2009), the size of elasticity depends on 3 factors: (1) the possibility of labor substitution with other production factors; (2) the elasticity of demand for the goods produced; (3) the proportion of employee costs to all other complementary production costs

4. Analysis of the Elasticity of Job Opportunity

Analysis of the elasticity of labor is generally used to determine the influence or impact of economic growth on the rate of labor absorption. This may assist the government in formulating suitable policies.

Miller and Meinners (2000) argue that labor demand is influenced by the value of a marginal product (VMP). The value of a marginal product (VMP) is the multiplication of the Marginal Physical Product and its price. The Marginal Physical Product (MPP) is the increase of total physical products derived from the additional unit of the input variable (laborers).

Elasticity of labor demand is defined as the percentage of change in labor demand relative to the 1% change in wage rate. It is formulated as follows:

$$e = \frac{\Delta N/N}{\Delta W/W} \quad (2)$$

e = elasticity of labor demand
ΔN = changing number of labor
N = the initial number of labors
ΔW = the existing wage rate

Employed citizens are absorbed and spread in various sectors, such as agriculture, finance, trade, and many others. Each sector has a different growth rate. This causes 2 things: (1) a different increase of productivity in each sector; (2) sectoral changes that occur gradually, both in labor absorption and its contributions to national income. The difference in the growth rate of regional income and job opportunities demonstrates the difference in elasticity in each sector in terms of labor absorption.

Elasticity of job opportunity is calculated using the following formula:

$$E = \frac{\text{Job opportunity growth rate}}{\text{Economic growth rate}} \quad (3)$$

The elasticity of demand depends on these four following factors:

1. Substitution of labor with other factors of production (such as capital);
2. Demand elasticity of the produced goods;
3. Proportion of wage rate and overall production cost;
4. Supply elasticity of the other supplementary production factors.

Demand elasticity is employed to measure the changes of demand due to different wage rates. Kaufman B.E (2000) states that the lower curve of the labor demand illustrates that wage rates and employment rates are inversely proportional. In particular, economists and policy makers should understand how sensitive the labor wage rate is as it relates to the elasticity of labor demand (ED) which is defined as followed:

$$E_D = \frac{\% \Delta L}{\% \Delta W} \quad (4)$$

%ΔL is the percentage of labor changes and %ΔW is the percentage of wage changes. The equation represents that wage rate and labor changes are inversely related, however, economists usually ignore the minus sign when discussing the elasticity of demand.

The economic growth rate in Pontianak City has experienced an increase from 2010 to 2013 (respectively 5.38%; 5.89%; 6.06%; and 6.92%) However, in 2014, it decreased to 6.52% (0.4 points). This may be the result of the downturn in the national economy. The decreasing sectors in 2014 are agriculture, industry, electricity and water, trading, hotel and restaurants, financial, rent and company services, and other services.

The number of job opportunities in Pontianak City has shown an increasing trend in recent years, albeit relatively small. In 2011, the number of workers was 236,913 which was an increase of 3,125 workers from the 233,788 workers in 2010 (1.34% growth). That number grew 0.82% in 2012 with 238,851 workers (additional 1938 workers); 1.31% in 2013 with 241,982 workers (additional 3131 workers); and 0.93% in 2014 with 244,236 workers (additional 2254 workers).

Based on the main job sectors, the highest labor absorption rate is recorded by the trading, restaurant, and accommodation sectors in 2010-2014; followed respectively by community service sectors (31.61%), social and individual sectors (25.53%), and construction sectors (12.17%). This is consistent with the output contribution in Pontianak's PDRB. This finding shows a positive relationship between output contribution and labor absorption.

The calculation of job opportunity elasticity is based on the average economic sector per year from 2010 to 2014. This is depicted as followed:

Table 1. Job Opportunity Elasticity Per Economic Sector in Pontianak 2010-2014

Main Job Opportunity	**2010**		**2014**		**LPP**	**LPE**	**Elastisitas**
	Labor	**PDRB (Juta/Rp)**	**Labor**	**PDRB (Juta/Rp)**			
Agriculture	12.137	183.533	14,215	299.248	17.12	63.05	0.27
Processing industry	11.063	1.000.903	20,815	1.488.700	88.15	48.74	1.81
Electricity and Drinking Water	2.050	35.000	2,949	49.231	43.85	40.66	1.08
Building	31.887	2.455.471	29,724	4.248.521	(6.78)	73.02	(0.09)
Trade, Hotel, Restaurant	81.394	3.080.805	77,203	5.707.196	(5.15)	85.25	(0.06)
Transport and Communication	20.335	2.276.931	16,755	3.874.413	(17.61)	70.16	(0.25)
Finance, Rental and Persh Services	6.025	1.183.849	20,223	1.852.436	235.65	56.48	4.17
Services	75.685	2.351.375	62,353	3.650.576	(17.62)	55.25	(0.32)
Total	**240.576**	**12.567.867**	**244,236**	**21.170.320**	**1.52**	**68.45**	**0.02**

Source: Processed Data, 2015

Notes: LPP = Workers' Growth Rate; LPE = Economic Growth Rate

Table 1 portrays the growing number of workers and PDRB to further calculate its elasticity. The elasticity of work opportunities in Pontianak City (2010-2014) is 0.02% which implies that each percent of economic growth will increase labor absorption by 0.02%. This condition illustrates inelastic (or insignificant) change, as the growth of workers is less than the economic growth. The results of this study are consistent with the findings of Mahyuddin and Zain (2010) and Ketut et al. (2008). Meanwhile, employment elasticity in the secondary sector in Maluku Province is 0.55 and significant (Sangadji, 2014). Moreover, it can also be said that PDRB is capital intensive. As previously mentioned, development concentrated in the tertiary sector will

highly depend on capital and absorption of less workers. On the other hand, development concentrated at the primary sector is elastic (>1), and so it absorbs more workers.

As seen from each sector, the highest elasticity is recorded in the other services sector (1.81%), followed by water (1.81%) and electricity (1.08%). Hence, growth in these 3 sectors needs to be enhanced in order to absorb more workers. Meanwhile, the lowest rate of elasticity is recorded by the services sector (0.32%) which means that the labor absorption in this sector declines rapidly.

5. Discussion

Pontianak City is a developing city and contributes a relatively high number of school graduates and potential laborers. Therefore, as economic growth and regional expansion continue, the employment problems in Pontianak City become the responsibility of the local government. The followings are strategies needed to improve the labor quality.

5.1 Worker Training Hall (BLK)

Worker training refers to the process of training workers on the skills needed to fulfil the requirements of their work. In other words, worker training is related to professional development. In terms of the improvement of work quality, training can function as either a supplement or complement to formal education.

5.2 Internship

An internship is direct training in the work place. This path aims to strengthen one's professionalism which is shaped through worker training. Through continuous mentorship and experience in the work place, one's professionalism can grow and develop accordingly.

5.3 Nutrition and Health Improvement

Nutrition and health improvement are essential to maintain work endurance and learning capability in receiving new knowledge and increasing working spirit. Besides improving technical knowledge through human resources development programs, the company also needs to create human resources who are pious, tolerant, knowledgeable, productive, disciplined, innovative, and responsible. In general, we can solve various employment problems through the following practical efforts:

5.3.1 Encourage Investment

Foreign investment has not provided a meaningful result thus far. Foreign investors may be waiting for an improvement in the investment climate and new regulations in relation to laborers. If there is no breakthrough, the unemployment issue may persist in the future.

5.3.2 Improve Competitiveness

Export competitiveness depends on an open trading policy, as well as the creation of facilities to establish an export structure suitable for world competition. In short, the government can encourage export by reducing various export tariffs and increasing access to international markets. The possible tariff policies are as followed:

1. Maintain stability and capability of exchange rate;
2. Ensure the moderate increase of wage rates which is in line with productivity improvement;

3. Accelerate the restitution of value added tax and import tariffs for exporters;
4. Improve port facilities and infrastructure to reduce transportation costs.

5.6 Enhance Worker Flexibility

The government enforces the most inflexible and costly labor regulations in East Asia. The policy on labor markets should be balanced with the creation of flexible markets to provide protection and security to laborers.

6. Conclusion

Economic growth in Pontianak City recorded the highest rate among other West Kalimantan regions with an increase from 5.38% in 2010 to 6.52% in 2014. Generally, the economy of Pontianak City is dominated by 3 sectors, namely: trading, hotel and restaurant; transportation and communication; and building (service). Collectively, those sectors contribute 65.33% of the PDRB, hence, most workers are also absorbed from those sectors. The elasticity of job opportunity is recorded at 0.02%. This means that the need to absorb workers is smaller than the economic growth. Therefore, most PDRB in Pontianak City is capital intensive. There is a need for stronger strategies to improve labor quality through worker training, productivity improvement, and enhancement of competition.

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