INTER SECTOR LABOR MOBILITY IN PALEMBANG, INDONESIA

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Abstract

This study discusses the inter sector labor mobility in Palembang working in the primary, secondary, and tertiary sectors. In this study, the inter sector labor mobility is divided into three (3) categories: (1) a new sector of new type of job, (2) a new sector of same type of job, and (3) the same sector of same type of job. The data used are the cross section data obtained through field surveys. By using multinomial logistic regression model, the results indicate that the variable income, job experience, education, and the number of family members significantly influence the inter sector labor mobility on category 1 compared to category 3. Meanwhile on category 2 compared to category 3, the variables that significantly influence the mobility are income and job security.

Keywords: Inter Sector Labor Mobility, Multinomial Logistic Regression, New Sector of New Type of Job, New Sector of Same Type of Job, Same Sector of Same Type of Job

1. Introduction

The phenomenon of labor mobility that occurred in Indonesia consists of two types, spatial and non-spatial. Spatial mobility of labor is divided into two types, permanent and non-permanent mobilities, while non-spatial labor mobility is a transfer from one job to another, either by sector or employment status. Mobility in the economic sector (primary, secondary, and tertiary sectors) has often occurred lately. One of the factors that influences the mobility is that many companies use the contract system on employees. Mobility happens because of the desire from the labors themselves, unsatisfactory of income received, or being fired from the company because of downsizing or due to the fact that the employment contract has finished.

Elliot and Lindsley (2006b) and Permata (2008) show that labor mobility can increase salary or income. Labor mobility provides opportunities for labors to get better jobs and provides more welfare. In addition, there is a concordance between the company and labors, where the
company wants qualified labors, while labors expect higher income which becomes the main consideration for labors to undertake mobility on their jobs. Labors who undertake mobility from one sector to another obtain great benefit for the labors themselves (Mincer and Jovanovic, 1979). The same thing is also expressed by Pack and Paxson (2001), that through the mobility, the labors will earn a better income from their previous jobs. To obtain better income, labors tend to make the shift to a more promising sector, sector with high level of productivity. 

Palembang is categorized as a big city, because of the population of more than 500,000 people. Various sectors of the economy continue to be developed in Palembang in order to promote economic growth and ultimately the welfare of society can be achieved. The phenomenon of inter sector labor mobility is experienced by many labors in various sectors in Palembang. Based on this, this study analyzes the probability of labors to undertake inter sector mobility and the factors which influence labors to perform inter sector mobility in Palembang.

2. Literature Review

Borjas (2000) states that labor mobility is a mechanism in the labor market. It happened in the labor market the United States in the early twentieth century, almost 4 percent of labors switched jobs in certain months, 3 percent of the population moved to other countries in one year, and about 1 million legal and illegal immigrants came to the country each year. Borjas (2000) also argues that labor mobility happens because of the same fundamental factors; the labors want to improve their economic situation and the company wants to hire more productive labors. According to Todaro (2000), the traditional sector of the rural subsistence sector is in a state of surplus labor as a fact that most of the labors are taken from the agricultural sector which has a fairly low productivity. The industrial sector in urban areas with high levels of productivity into a labor purposes in rural areas make a change from traditional sector to modern sector or agriculture to non-agricultural sector. The model focuses on the mobility of labors, as well as the growth of employment in the modern sector.

Furthermore, McConnell et al. (1999) suggest that labor mobility includes changes in the jobs performed by the labor, while the geographical mobility is labors who change jobs to other cities, states, or nations. The decision to change geographically can be seen through investment in human capital where labors will mobile when the net present value of the mobility is positive. 

Elliott and Lindley (2006a) find that labor mobility is more significant in the manufacturing sector compared to other sectors. Labors with low quality or lack of skills are more mobile than labors who have high skills and quality. Pack and Paxson (2001), Mincer and Jovanovic (1979), and Akkemik (2005) reveal that labors are more likely to move to other industries that provide salary increases, meaning that labors prefer a sector or industry which provides better productivity. The main objective of the labor mobility to earn a better income is also supported by Susilowati (2001) who states that labor mobility gives a positive impact on increasing household income and economic development of rural areas. Lee and Wolpin (2006) found that inter sector labor mobility has increased income, but it will cost quite high mobility when workers change sectors. This statement is also supported by the findings of Cabral and Silva (2006), Longhi and Taylor (2013),and Elliott and Lindley (2006b) which suggest that workers who move from one sector to another can also be followed by changes in the type of work, which provides greater revenue opportunities than the sector or type of work before. Suttiwichienchot and Puttanapong (2014) find that there exists the consistent range of switching cost, which incurs when labors move from agricultural sector to non-agricultural sectors.

In contrast to the statements above, the finding by Cherry and Tsournos (2001) suggests that there is no clear evidence whether mobility occurs because of the increase in salary or not. The results show that the spatial dispersion of salary is greater because of the presence of children, but the difference in salary is not influenced by marriage. The finding also indicates that the decrease in labor mobility is due to the presence of children in the family.

Wang (2013) analyzes the mobility of labors between multinational enterprises (between the United States and Canada) and its implications for welfare. The result shows that labor mobility can improve welfare, especially for labors who have the skills for all types of jobs.
The labor mobility can narrow down the space for native labors who live in the country of origin. The result of the study supports the view that greater openness to mobility can bring prosperity for all.

In some cases, labors change jobs with the hope that their income amongst their peer will improve. Number of mobile labors in the rural areas has a positive effect in increasing the flow of labor. Other things taken equal, age and sex are the main determinants of mobility. The older the labors, the less they mobile. When viewed from the sex, the mobility of female labors is less than male labors (Mahesh, 2002).

Rationality of labors to mobile from low-productivity sectors to higher productivity is to gain a better salary rate than their previous jobs. The salary rate is usually influenced by labor productivity. Productivity can be seen from education and employment experience. The salary rate which far below the given labor productivity has the potential to encourage labors to move or quit jobs. McConnel et al. (1999) reveal that the mobility of labors emerges as a response to the difference in salary as the market moves towards balance.

There are several other factors that may become the boosters for labors to mobile. Ehrenberg and Smith (2012) mention that there are three schemes undertaken by the company to withhold labor not to move or quit jobs. First, giving salary rate that is higher than the level of salary in the labor market. Second, increasing salary rates with higher acceleration, especially for more experienced labors. Third, providing opportunities for labors to participate in training or education and requiring them to serve and apply the knowledge gained in the company within a certain time.

3. Research Methodology

This study discusses the inter sector labor mobility in Palembang. In this study, the inter sector labor mobility is divided into three (3) categories: (1) a new sector of new type of job, (2) a new sector of the same type of job, and (3) the same sector of the same type of job.

The data used are the cross section data obtained through field surveys using a questionnaire. Other necessary supporting data are taken from various surveys done by the Central Bureau of Statistics (BPS). Based on data from BPS Sumatera Selatan (2013), the percentage of total labors in Palembang is 17 percent of total labors in the Province of South Sumatra. Data is taken from data on the number of labors by the main business fields where the number of labors in Palembang is 600,408 people (BPS Kota Palembang, 2013). The sample is determined by 30 percent to represent the population as a whole, the number of samples obtained is 180 respondents as the sampling used is stratified-proportional-random-sampling.

Probability analysis of labors to undertake the inter sector mobility is based on three categories: (1) a new sector of new type of job; (2) a new sector of the same type of job; and (3) the same sector of the same type of job, which is analyzed by using multinomial logistic regression model (Hosmer et al. 2013). Factors that affect labors to undertake inter sector mobility include income, working experience, education, number of family members, and job security. Then the function of inter sector labor mobility is as follows:

\[
MP_i = f(PDP, PK, DIK, JT, SEC)
\]

where:

- \(MP_i\) = Labor Mobility
- \(PDP\) = Income
- \(PK\) = Working Experience
- \(DIK\) = Education (length of study)
- \(JT\) = Number of family members
- \(SEC\) = Job Security

Logistics model equations in this study are:
MP_{sbjp} = \ln \left[ \frac{P(Y = sbjp|x)}{P(Y = ssjp|x)} \right] = \beta_0 + \beta_1 PDP + \beta_2 PK + \beta_3 DIK + \beta_4 JT + \beta_5 SEC \hspace{1cm} (2)

MP_{sbps} = \ln \left[ \frac{P(Y = sbps|x)}{P(Y = ssps|x)} \right] = a_0 + a_1 PDP + a_2 PK + a_3 DIK + a_4 JT + a_5 SEC \hspace{1cm} (3)

The probability in the categories of (1) a new sector of new type of job; (2) a new sector of same type of job; and (3) the same sector of same type of job is as follows:

\[ \pi_{ssps} = \frac{1}{1 + e^{a_0 + a_1 PDP + a_2 PK + a_3 DIK + a_4 JT + a_5 SEC}} \hspace{1cm} (4) \]

\[ \pi_{sbjp} = \frac{e^{\beta_0 + \beta_1 PDP + \beta_2 PK + \beta_3 DIK + \beta_4 JT + \beta_5 SEC}}{1 + e^{\beta_0 + \beta_1 PDP + \beta_2 PK + \beta_3 DIK + \beta_4 JT + \beta_5 SEC}} \hspace{1cm} (5) \]

\[ \pi_{sbps} = \frac{e^{\beta_0 + \beta_1 PDP + \beta_2 PK + \beta_3 DIK + \beta_4 JT + \beta_5 SEC}}{1 + e^{\beta_0 + \beta_1 PDP + \beta_2 PK + \beta_3 DIK + \beta_4 JT + \beta_5 SEC}} \hspace{1cm} (6) \]

4. Results and Discussion

4.1 Analysis of Descriptive Statistics

A total of 180 respondents collected in this study is the labors who are in the primary sector, secondary, and tertiary of various types of jobs in Palembang. This analysis of descriptive statistics describes the characteristics of the respondent of the variables studied. Income received by labors is between Rp 200,000 to Rp 30,000,000 (shown in Figure 1). If it is based on the labor mobility, the income of Rp 3,000,000 to Rp 5,9999 million represents income earned by most labors from each category.

![Figure 1. Distribution of Labors based on Income and Inter Sector Labor Mobility](image)

**Source:** Authors’ calculations based on primary data and BPS Kota Palembang (2013)

**Explanation:**
SBJPB = A New Sector of New Type of Job
SBJPS = A New Sector of Same Type of Job
SSJPS = The Same Sector of Same Type of Job
If the distribution of labors is seen from working experience, the length period is between 1 year and 41 years. For the category of a new sector of new type of job, shown in Figure 2 that working experience of most of labors in Palembang is between 11-20 years, while working experience for the categories of a new sector of same type of job and the same sector of same type of job is between 1 year to 10 years.

Figure 2. Distribution of Labors Based on Working Experience and Labor Mobility
Source: Authors’ calculations based on primary data and BPS Kota Palembang (2013)

If labor mobility is seen from the education, the length of time taken by labors from three (3) categories is more concentrated in a span of 7 years to 12 years. When viewed from that span, the levels of education are junior high school (SMP) and senior high school (SMA). Based on labor mobility, there are 32 people in a new sector of new type of job and 21 people in a new sector of same type of job, and 41 people are in the same sector of same type of job. The detail is shown in Figure 3 below.

Figure 3. Distribution of Labors Based on Education and Labor Mobility
Source: Authors’ calculation based on primary data and BPS Kota Palembang (2013)

The next variable in this study is the number of family members. Number of family members can be defined as the number of all family members in one family. Each family has different number of dependents. Based on Figure 4, the result shows that the number of family members is between 1 up to 7 people. Number of family members of labors who are in the a new sector of new type of job and the a new sector of same type of job is between 1 to 3 people, while for the same sector of same type of job, number of family members is between 4 to 6 people.
Job security will create a peaceful working atmosphere so that labors can concentrate or focus on his job as much as possible. From 180 respondents, labors who have job security are only 80 people, while 100 other labors have no job security. Figure 5 shows the distribution of labors based on job security and labor mobility.

4.2 Analysis of Statistical Inference

By using the multinomial logistic regression, the result shows that all independent variables; income, working experience, education, number of family members, and job security significantly influence inter sector labor mobility as shown in Table 1 below.

<table>
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<tr>
<th>Table 1. Likelihood Ratio Tests</th>
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<td>Variable</td>
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<td>Intercept</td>
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**Note:** ***1% significance level, **5% significance level

**Source:** Authors’ calculation based on primary data
The result in Table 1 shows that income (PDP), working experience (PK), education (DIK), number of family members (JT), and job security (SEC) have a significant value less than \( \alpha = 0.05 \) which means that all variables significantly influence the inter sector labor mobility.

Goodness of Fit model is used to see how well the independent variables can be used to explain the dependent variable. Goodness of Fit tests that the data are in accordance with the model, meaning that there are no differences between the model and the data so the model can fit. This test uses the null hypothesis \( (H_0) \), and the value of Pearson and Deviance. If the value of Pearson and Deviance is less than or equal to 0.05 (\( \leq 0.05 \)), \( H_0 \) is rejected, which means there is a significant difference between the models with observed values, which means the Goodness of Fit model cannot be used because the model cannot predict the value of observation.

Inter sector labor mobility is caused by many factors, both internal and external factors. Factors that affect labor mobility are divided into three (3) categories: the same sector of same type of job, a new sector of new type of job, and a new sector of the same type of job. In this study, the dependent variable \( (Y) \) is labor mobility, and the independent variables are income\( (X_1) \), working experience \( (X_2) \), education \( (X_3) \), the number of family members \( (X_4) \) and job security \( (X_5) \).

Individual test is performed to determine the significance of the independent variable parameters by using the Wald test. Wald statistic test compares the calculated chi-square value and the degree of freedom 1 or \( x^2_{1} = 3.841 \). If \( W_J > 3.841 \), \( H_0 \) should be rejected, meaning that the \( \beta \) parameter is significant. By using reference category, the same sector of same type of job, the obtained test result is shown in Table 2 below.

<table>
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<th>Table 2. Individual Test Result of Independent Variables</th>
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**Note:** ***1% significance level, **5% significance level

**Source:** Authors’ calculation based on primary data

Based on Table 2, it can be seen that the logistics model 1 shows that the variables that significantly influence labor mobility of a new sector of new type of job compared to labor mobility of the same sector of same type of job are income \( (X_1) \), working experience \( (X_2) \), education \( (X_3) \), the number of family members \( (X_4) \), while for job security \( (X_5) \) does not. In logistics model 2, for a new sector of same type of job compared to the same sector of same type of job, the variables that significantly influence are income \( (X_1) \), and job security \( (X_5) \). The other variables, namely working experience, education, and number of family members do not significantly influence.
4.2.1 Estimated Probability of Inter Sector Labor Mobility

To find out the probability of inter sector labor mobility, the probability estimation is done for categories of (1) a new sector of new type of job; (2) a new sector of same type of job; and (3) the same sector of same type of job. Based on the equation (4), (5) and (6), the obtained value of probability for the category of a new sector of new type of job is 0.669 (67 percent), the category of a new sector of same type of job is 0.139 (14 percent), and the category of the same sector of same type of job is equal to 0.222 (22 percent). These results indicate that labors in category 1, a new sector of new type of job, have a higher probability than 2 (two) other categories.

4.2.2 Independent Variables Influence on Inter Sector Labor Mobility

4.2.2.1 Influence of Income (PDP) on Inter Sector Labor Mobility

Income significantly influences on the level of $\alpha = 5$ percent to the labor mobility either partially or simultaneously. Income received is highly varied. In this study, the lowest income is Rp 200,000 whereas the highest is Rp 30,000,000. In the logistics model 1, coefficient of labor income obtained is 0.161, while the odds value of labors’ income is exponential (0.161) of 1.175. This explains that income of labors who undertake mobility in a new sector of new kind of job increases by 1.175 times than the income of labors who remain in the same sector of the same type of job. When compared to logistics model 2, wherein the coefficient of labors’ income is 0.146 with 1.157 exponential value, it can be stated that income of labors who undertake mobility in a new sector of same type of job, increased by 1.157 times compared to labors who remain in the same sector of same type of job.

Differences in salary in most sectors become the cause of inter sector labor mobility, to shift to a more promising sector with relatively high productivity. To obtain a better income or greater than the previous job is one reason why labors undertake mobility. It is also stated by Akkemik (2005), Pack and Paxson (2001), and Eisenring (2011) that the factor of the amount of income/salary levels in the previous sector is the reason for inter sector labor mobility.

4.2.2.2 Influence of Working Experience (PK) on Inter Sector Labor Mobility

In this study, working experience is calculated based on the length of time or employment either at the previous job or at the new job that has been taken by labors in terms of years. The duration of working experience of the labors is between 1 year to more than 41 years. In model 1, a new sector of new type of job with the reference category of the same sector of same type of job, working experience is significant at $\alpha = 0.05$ with a value of 0.010. From the result of the statistical calculation, the positive coefficient of working experience is 0.059, meaning that each additional year of working, the inter sector labor mobility increases by 5.9 percent. The odds value of working experience is exponential (0.059) of 1.061. This value clarifies that respondents who have a longer working experience, will have a tendency to undertake inter sector mobility in a new sector of new type of jobs by 1.061 times.

This study suggests that individuals who have longer working experience will have more opportunity to undertake inter sector mobility. In Palembang, the number of labors who undertake inter sector mobility in a new sector of new type of new job increases when the length of working time increases. Working experience possessed by a person is not only about the number of years of service, but also the type of job that ever or frequently encountered. Working experience possessed by a labor can lead to more skills and abilities in the jobs.

Working experience in model 2 of a new sector of same type of job with the reference category of the same sector of same type of job is not statistically significant because the significance in this variable is only 0.651. Inter sector labor mobility can also be followed by changes in the types of job. If the same type of job with the previous job, the knowledge, skill, and work experience possessed the labor can be used, but if it moved to the new types of job, the labor has to start from scratch. Knowledge and skills needed in the job are something new for a labor.
4.2.2.3 Influence of Education (DIK) on Inter Sector Labor Mobility

Based on Table 2, for model 1 of a new sector of new type of job, labors' education significantly influences with 0.002 where p-value is less than α of 0.05. If it is seen from the coefficient of education variable is negatively influenced by the value of -0.183, meaning that the higher the education level, the lower the chances for labors to undertake inter sector mobility in the category of a new sector of a new type of job. The odds value of education is exponential (-0.183) of 0.833. This value explains that if labors have a higher level of education, the trend for inter sector mobility in the category of a new sector of new type of new jobs decreases by 0.833 times than labors with low education levels in the same sector of same type of job.

Education is one of the human capital investment. According to Ehrenberg and Smith (2012) and Borjas (2000), investment in education is an important factor in the development of human resources. The higher the level of education, the higher the level of income will be. Therefore, when a person has a higher level of education, the desire to undertake inter sector mobility decreases. This is because the income earned is directly proportional to the level of education. Unlike the model 2, a new sector of same type of job, education variable is not statistically significant because of the significance value is 0.387.

4.2.2.4 Influence of Number of Family Members (JT) on Inter Sector Labor Mobility

In this study, the number of family members is defined as the sum of all family members in one family. Each labor has different number of family members, which is at least one person, and the most is 7 people. In the logistics model 1, the number of family members has a significant negative influence on the chances of inter sector labor mobility on the new sector of new type of job. The coefficient of the variable of number of family members obtained is-0.344, meaning that the more number of family members, the less the labor mobility in the new sector of new type of job by 34.4 percent. The odds value of the number of family members of labors is exponential (-0.344) of 0.709. This value explains that labors who have more number of family members, the tendency to undertake inter sector mobility in a new sector of new type of job decreases by 0.709 times compared to those who have less number of family members in the same sector of same type of job.

In the logistic model 2, the number of family members may also adversely influence but not significant to inter sector labor mobility in the category of a new sector of same type of job compared to the reference category, the same sector of same type of job. The significance of this variable is 0.106 where the value is higher than the level α = 0.05, and the coefficient of the variable of number of family members has negative value of -0.267, and the odds value of the number of family members is exponential (-0.267) of 0.709.

The variable of the number of family members shows negative value, which means the addition of one family member reduces the chances of labors to undertake inter sector mobility. The participation of wife or other family members to help the head of the family/husband by deciding to work in order to earn additional income that can be used to meet the needs of the family. By the increase of family income, it causes less opportunities for labors to undertake inter sector mobility when the number of family members increases.

4.2.2.5 Influence of Job Security (SEC) to Inter Sector Labor Mobility

Based on Table 2, the variable of job security shows significant and negative influences on the level of α = 0.05 in logistics model 2. The significant value of job security is 0.021 with a coefficient of -1.163. This coefficient value means that the more job security provided by the employer, the less tendency for labors to undertake inter sector mobility by 116.3 percent. Exponential of -1.163 is 0.313 which is the odds value of job security. This value means that labors who are provided with job security, the tendency to undertake inter sector mobility decreases 0.313 times compared to those who do not in the same sector of same type of job. Variable of job security also shows negative but not significant influence on the logistics model 1
of 0.203 and the coefficient of the variable is -0.534, while the odds value is equal to 0.586. The odds value on a logistics model 1 is higher than the odds value on a logistics model 2.

According to Laws of the Republic Indonesia No. 13 of 2003 on Workforce, Chapter X of Protection, the Wage and Welfare, Article 86, paragraph 1 (a) it clearly states that every labor has the right for the protection of health and safety, further it is explained in paragraph 2 that in order to protect the safety of labors and to actualize optimal productivity, there should be safety and health securities. On the basis of Laws of the Republic Indonesia No. 13 of 2003 companies, industries or employers must fulfill their responsibility to provide job security. The form of job security which is most widely given is protection from the dangers that are caused by the tools or materials. Another form is health insurance. By being given job security, labors will feel more secure and comfortable in doing their jobs. If the security and comfort of labors have already been obtained, it will be difficult for them to undertake mobility.

5. Conclusion

Probability of labors to undertake inter sector mobility varies widely. Of the three categories, namely (1) a new sector of new type of job; (2) a new sector of same type of job; and category (3) the same sector of same type of job, the highest probability of labors to undertake inter sector mobility is in the category 1, which is equal to 67 percent.

The purpose of labors who undertake inter sector mobility because they want to earn better income than in previous jobs. From the estimation, it can be explained that in the logistics model 1 and 2 income significantly influences mobility. The income of labors who undertake mobility in a new sector of new type of job increases by 1.175 times than the income of labors who are in the same sector of same type of job. While in logistics model 2, the income of labors who undertake mobility in a new sector of same type of job increases by 1.157 times compared to labors who remain in the same sector of same type of job.

Someone who has more working experience will have higher chances to undertake inter sector mobility. In Palembang, the probability of labors in anew sector of new type of job increases by 1.061 times than those who remain in the same sector of same type of job. In this study, the higher the level of education, the lower the chances of labors in a new sector of new type of job to undertake inter sector mobility, 0.833 time compared to labors with low education levels in the same sector of same type of job.

Number of family members has a significant and negative influences for labor mobility in the category of a new sector of new type of job. The probability of labors who have more number of dependents decreases by 0.709 time than labors who have less number of family members in the category of the same sector of same type of job. Variable of job security has significant and negative influences on the logistics model 2. The odds value of job security is 0.313 which means the tendency of labors who have job security decreases by 0.313 time compared to those who do not have job security in the category of the same sector of same type of job.

References


