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Revista de Antropología, Ciencias de la Comunicación y de la Información, Filosofía,
Lingüística y Semiótica, Problemas del Desarrollo, la Ciencia y la Tecnología

Año 36, 2020, Especial N°

26

Revista de Ciencias Humanas y Sociales

ISSN 1012-1537/ ISSN e: 2477-9385

Depósito Legal pp 198402ZU45



Universidad del Zulia
Facultad Experimental de Ciencias
Departamento de Ciencias Humanas
Maracaibo - Venezuela

Logistics model approach in analyzing the mobility of migrant work in Banjarmasin city

*Ahmad Yunani*¹

¹Lambung Mangkurat of University, Indonesia

*Syubhan Annur*²

²Lambung Mangkurat of University, Indonesia

*Rabiatul Adawiyah*³

³ Banjarmasin of Politechnic, Indonesia

Corresponding author: yunaniunlam@gmail.com

Abstract

This research is an interpretative explanatory research by analyzing primary data. Primary data collection through survey methods that are analyzed using inferential analysis (logistic regression models). The results showed that: (a) Based on logistical analysis that was proven to significantly affect the mobility of migrant residents' work was the number of skills and wage systems. (b) The vertical pattern of job mobility that experienced an increase occurred in the trade and services sector, while the occupational mobility that experienced a decline was the agricultural sector, and the building and services sector with horizontal occupational mobility patterns.

Keywords: Job mobility; Migrant population.

El enfoque del modelo logístico en el análisis de la movilidad del trabajo migrante en ciudad de Banjarmasin

Resumen

Este trabajo es una investigación explicativa interpretativa mediante el análisis de datos primarios. Recopilación de datos primarios a través de métodos de encuesta que se analizan mediante análisis inferencial (modelos de regresión logística). Los resultados mostraron que: (a) En base al análisis logístico que se demostró que afectaba significativamente la movilidad del trabajo de los residentes migrantes, estaba la cantidad de habilidades y sistemas salariales. (b) El patrón vertical de movilidad laboral que experimentó un aumento se produjo en el sector de comercio y servicios, mientras que la movilidad ocupacional que experimentó una disminución fue el sector agrícola y el sector de servicios y construcción con patrones horizontales de movilidad ocupacional.

Palabras clave: Movilidad laboral; Población migrante

1. INTRODUCTION

Economic development in the form of an increase in income per capita that occurs in a long period of time is usually accompanied by various processes of socio-economic transformation. An important part of the process is a shift in the production structure or changes in the composition of GDP by sector and business sector. In connection with the shift in the structure of production, the structure of employment has also changed. The role of the agricultural sector in GDP and

employment has tended to decline. While the role of other sectors such as the industrial and service sectors are increasing both in production and in the absorption of labor (ANANTA, 1993). Besides that as a second result, the pattern of transformation of the production structure during economic growth is also influenced by developments in the distribution of income (ANWAR, 1985 in ANANTA, 1993).

Basically, the process of socio-economic transformation encourages job mobility, which is a human activity in the context of optimizing the fulfillment of their needs, and is motivated by a variety of certain factors. Changes in job mobility are directly influenced by the level of income a person has. Furthermore, these changes can also affect the level of welfare, and have a major impact on the labor market and employment opportunities and have a positive effect on economic growth. Job mobility can also be a way to improve living standards and well-being.

The current theory and empirical research have long argued and justified the propositions that in the early stages of economic development involved the transfer of human, physical and financial resources from regions and sectors that were rather slow (rural areas in the agricultural sector) to more dynamic and broader regions and sectors (urban areas in the secondary and tertiary sectors). Structural displacement that occurs through the transfer of such resources does have advantages and disadvantages but it is also possible that this process has a net positive effect on productivity factors and therefore on overall production in addition to distribution by region and sector (PAPANNEK, 1987).

The speed of population mobility from villages to cities is a result of the rapid development of the city and its surroundings, thereby increasing employment opportunities and attracting workers from around the city (BINTARTO, 1983). Thus the increase in the population of the city is largely due to the presence of migrant residents from both villages and surrounding suburbs who enter the cities that are urbanizing with the aim of getting more varied jobs and earning more income than in the area of origin.

LEE (1966), TODARO (1979) and TITUS (1982) argue that a person's motivation to move is an economic motive. Economic motives develop due to economic disparities between regions. Todaro considers as the main motive rational economic considerations, namely to obtain work and higher income expectations. In contrast to migrant workers from Indonesia abroad, they try to find work as Indonesian Migrant Workers, both skilled and unskilled. Their goal is to change their destiny to earn a decent income in other countries; this is in accordance with HUGO 2005; RODRIGUEZ 2010; RUIZ 2008: The two countries that embrace this agenda, the Philippines and Indonesia, are major suppliers of global migrant workers worldwide.

Through this survey research researchers are interested in conducting detailed research on the factors that influence it through the logistic regression analysis approach that occurs in migrant populations in the city of Banjarmasin. With this paper further intends to anticipate the impact of dynamic and complex regional and city development symptoms so that it can be used as one of the considerations in its future development.

The definition of mobility depends on the concepts and theories that follow it. Mobility to be discussed in this paper is social mobility in which occupational mobility occurs. Social mobility shows the movement of individuals from one social status to social status. This movement can go up or down, or at the same level but in different jobs (COHEN, 1992). Sociologists study how diverse social factors can drive the mobility of social groups or individuals. Many factors contribute to the size of the opportunity for mobility in certain circles or communities. Among the dominant factors in influencing or determining mobility opportunities are education, sex, race and occupation of a father or head of family.

According to Cohen, 1992 there are several types of mobility that are well known, namely:

1. Vertical Mobility Vertical mobility is a change in individual status because it moves from one social class to another, both up and down. This vertical mobility can occur to someone who has a certain position and then promoted to a higher level. Along with the promotion there was also an increase in income and greater responsibility. Mobility above is an increase in vertical mobility, but vice versa it can also occur decreased vertical mobility.

2. Horizontal Mobility Horizontal mobility is social movement at the same level. Job mobility in individuals that shows horizontal mobility if the change of work does not affect social status. Horizontal job mobility like this does not affect the level of income. Someone who gets the same income as his previous job is called horizontal

mobility. Because the person is moving from one job that does not really need skills to another job that requires the same level of skills.

3. Mobility between Generations Intergenerational: is mobility that occurs between generations, for example the son of a farmer who attends college and becomes a renowned doctor, in this case intergenerational mobility occurs.

4. Intra-Generation Mobility

Intra generational mobility is a change or changes in the social status of individuals or groups of individuals in the same group, for example from five people who have the same education then work in a field of work but only one who gets great success while others are mediocre . These individuals experience intra-generation mobility.

Mobility that occurs depends on the structural system adopted by certain local communities. Preindustrial or rural communities generally have a closed class system structure with the same social status throughout their lives. Conversely, individuals who live in urban industrial areas are based more on achievement status, tend to be an open society. As NAUDÉ, SIEGEL, and MARCHAND 2015 stated: "Migrants are often expected to be super entrepreneurs" (4); However, their most recent analysis of the literature to date shows that many returning migrant entrepreneurial activities fail to have a broad or long-term impact on employment or wealth creation.

Changes in the labor market and differential mobility occur because society continues to move from an agrarian society to an industrial society so that the proportion of people in the lower socioeconomic needed to do manual labor decreases. Employment in

industrial societies is largely based on the acquisition of certain specific skills acquired through education or training. Hard jobs are not highly valued in industrial society because the level of skills required to carry out these jobs is relatively low. Furthermore, as industrialization continues to develop, these low-status jobs are in many cases gradually replaced by machines. Therefore, this will encourage people to change jobs both vertically and horizontally both in professional and managerial positions. Author links open overlay panel. MARIT AURE, et al.2018 We agree that creating problems in rural communities by encouraging migrant success requires development assistance - a more flexible and vulnerable process related to an unknown place and world. It also needs to be understood about solutions that need to be considered and opened up to various forms of ownership.

Generally, there are many changes to the workers, in the form of employer changes, changes in work or work location. The movement of workers with the term "labor mobility" is one of the conditions that occur in the labor market. Changes generally take the form of product demand, labor productivity, and the level of human capital, family conditions, and the attitude of the person being taught. This change encourages workers to change employers, jobs, job locations or a combination of the three. And employers also respond to these changes through hearings, the removal or termination of workers, closing or providing facilities, or also moving business operations to new locations (MC CONNELL, BRUE, MACPHERSON, 1999). A survey conducted by the Balikpapan Foundation revealed that only 30

percent of enterprises started by migrant workers remained solvent (WEEKLEY 2006).

2. METHODOLOGY

This research is an interpretative explanatory research by analyzing primary data. Explanatory research is research that involves testing hypotheses from research variables.

The data collection method used is a survey method designed based on proportional random sampling. The population of the research object is migrant population who has lived in Banjarmasin City between 1 to 10 years. The first stage of sampling was conducted in all districts in Banjarmasin by considering the concentration of the population based on the status of the migrant population between 1 - 10 years. To determine the size of the sample size used in this study the COCHRAN (1963) method is used as follows.

$$n = \frac{N \cdot Z^2 \cdot p(1 - p)}{N \cdot d^2 + Z^2 \cdot p(1 - p)}$$

N = Population Size

p = Proportion of migrants

d = the desired level of accuracy

Z = Estimated level of confidence

Based on the formula above, the level of alleged error (d) is not more than 5 percent with a confidence level of 95 percent and the size

of the random variable $Z \alpha = 0,05$. The population size (N) is 65,123 migrant residents in Banjarmasin City.

$$p = 65.123/531.135 = 0,123$$

$$Z = 0.95 \% = 1.96 \text{ (t table)}$$

Therefore:

$$n = \frac{65.123(1,96^2)(0,123)(1-0,123)}{65.123(0,05^2) + (1,96^2)0,123(1-0,123)}$$

$$n = 165.18 \text{ (165)}$$

Many migrant samples (n) needed in this study were 165 samples (0.25%) out of 65.123 migrant populations.

The type of data collected in this study is primary data obtained from the results of direct interviews with respondents of migrant residents in Banjarmasin using a questionnaire or questionnaire. Data collection techniques used were direct interviews with each migrant respondent, using a list of questions (questionnaires) that had been prepared previously.

Analysis of the data used to analyze the research variables is to use inferential statistical analysis. 1. To find out the factors that influence migrants' income, migrants are made using the multiple regression analysis model of the semi-log model (NACHROWI, 2002) using a dummy variable (ARIEF, 1993). Multiple regression models of semi-log models that contain qualitative independent variables use dummy variables. The semi-log model used is the log-lin model using the Y variable in logarithmic form while the X variable is linear. The general model formed is as follows:

$$\text{Ln}Y = \beta + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \dots + \beta_nX_n + \varepsilon$$

To analyze the pattern of mobility, descriptive statistical analysis is used and to analyze the factors that influence the mobility behavior of migrant population work, a logistic regression model is used to contain interaction factors (AGUNG: 1993), as follows:

$$Y = \ln\left(\frac{p}{1-p}\right) = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_1 * X_2 + \dots + \varepsilon_i$$

$$\frac{p}{1-p} = \exp(\beta_0 + \beta_1X_1 + \dots\varepsilon_i)$$

$$p(y = 1) = p = \frac{\exp(\beta_0 + \beta_1X_1 + \dots\varepsilon_i)}{1 + \exp(\beta_0 + \beta_1X_1 + \dots\varepsilon_i)}$$

Each univariate main factor (FU_i) linear model is a numeric variable or one zero indicator. Furthermore, the interaction factor (FI_j) is defined as the multiplication or product of two or more main factors. Regarding the dependent variable, a univariate linear model needs to be divided into two linear models, namely the multiple regression model which generally uses numerical dependent variables (model 4) and logistic regression models (model 5) with one zero dependent variable. The two models can be seen as below:

$$Y = \beta_0 + \sum_i \beta_i FU_i + \sum_j \tau_j FI_j + \varepsilon \dots \dots \dots (7)$$

$$\ln(p/1-p) = \beta_0 + \sum_i \beta_i FU_i + \sum_j \tau_j FI_j + \varepsilon \dots \dots (8)$$

The F test is used to test the significance of the influence (significance) of all the Independent Variables together on the Bound Variable, previously the R model test was done to know the correlation

coefficient and the R2 model test to determine the coefficient of determination.

The hypothesis is formulated: H0: b1, b2, b3, b4, b5, bi = 0 means that there is no significant effect simultaneously (simultaneous) Independent Variables (X1, X2, X3, X4, X5, Xi) on Bound Variables (Y).

Conversely if: H1: b1, b2, b3, b4, b5, bi ≠ 0 means that there is a significant influence together (simultaneous) Independent Variables (X1, X2, X3, X4, X5, Xi) on Bound Variables (Y).

$$F_{hit} = \frac{R^2 / (k - 1)}{(1 - R^2) / (n - k)}$$

The reliability of OLS as an estimation tool is largely determined by the significance of the regression coefficient (bi). Test the significance of the regression coefficients is done by statistics t. T test is used to test the regression coefficient partially from the variable. To determine the t-table value, a significance level of 5% was determined with the degree of freedom df = (n - k - 1) where n is the number of observations, and k is the number of variables including intercepts, with the test criteria being used are:

If t arithmetic > t table (a, n-k-1) then H0 is rejected

If t arithmetic ≤ t table (a, n-k-1) then H0 is accepted

Whereas the w (Wald) test was used to partially test the logistic model regression coefficient (XI) of the dependent variable (Y).

3. RESULTS and DISCUSSION

Welfare level of migrant population who do job mobility seen from the determined welfare indicators namely household income, income, savings ownership, status of residence, type of residence, ownership of household furniture, land ownership, energy and water facilities have increased to a more better than before job mobility. Likewise, if compared with the level of welfare of migrant residents doing job mobility with migrants who do not do job mobility, the level of well-being of migrants who do mobility also increases.

Of all the variables that allegedly influenced the income of migrant populations, it turned out that there was a significant proven only level of education, age and marital status, while other variables such as gender, length of stay, employment, length of occupation, and wage system were not significant but had a positive effect income, is education, age, marital status, and length of employment.

The vertical pattern of occupational mobility which increased most of the migrant population working in the trade and services sector, while the declining employment mobility was in the agriculture sector, and the unchanged sector occurred in the building and services sectors patterned with horizontal occupational mobility. The mobility pattern in terms of position / type of work that shows an increase in position is in the professional position / technician, leadership / manager, sales force, while the position which decreases vertically job mobility is in the position of industrial / production business, agricultural business, and other positions. Horizontal job mobility patterns are positions / types of work of administrative workforce. Job

mobility is seen with an indicator of the level of income there is an increasing pattern of vertical mobility, namely the occurrence of job mobility which has implications for increasing income. Working together can thus result in tension, strengthening of stereotypes, and mutual multicultural understandings and misunderstandings. Contact also risks “reinforcing differences, inflaming tensions and escalating conflicts both within and between groups, especially where there are perceived inequalities between participants” (PHILLIPS et al., 2014, 45) Language skills are often considered as a key element in integration processes. Studies of Polish migrants in Wales (KNIGHT et al., 2017), shows how migrants with greater levels of competency in English are more able to bridge networks with non-Polish friends and contacts in the communities to which they have moved.

The mobility pattern can be seen from the length of getting a job, the frequency of work mobility and the reasons for doing job mobility. It can be concluded that the migrant population generally gets a job less than one year with the frequency of doing job mobility at least once per person. The reasons for occupational mobility mostly state that income is unsatisfactory and there is a mismatch with the work environment. While the reasons for not doing the current job mobility state that the current job is appropriate. Information and access to job mobility are mostly obtained through relationships from family and friends, while information and access through mass media is still small.

The results of the logistic regression model are factors that influence the work mobility behavior of migrant residents in the city of

Banjarmasin. The results of the estimation of the logistical model of the factors influencing the mobility of migrant residents found in Appendix 1 are as shown in the following table:

Variabel	B	Exp(B)	Wald	Sig
Education	-0,1153	0,8911	2,6124	0,1060
Pendapatan	-1,1E-06	1,0000	3,0771	0,0794
Age	0,0172	1,0173	0,3694	0,5433
Gender	0,3816	1,4646	0,9245	0,3363
Marital status	0,3685	1,4455	0,7176	0,3969
Types of Previous Work	-0,4798	0,6189	1,4291	0,2319
Wage System	-0,0281	0,9723	3,2812	0,0701
Duration of Work	-0,0384	0,9623	0,9378	0,3328
Total Skills	0,5969	1,8164	5,9763	0,0145
Population Interaction * Income	6,89E-08	1,0000	3,0105	0,0827
Constant	1,2407	-	1,1074	

Goddness of fit test	= 7,6609	Signifikansi	=
	0,4673		
Model	= 20,009	Signifikansi	=
	0,0292		
-2 Log Likelihood	= 226,98394		

Table 1: The Results of Equation in the Mobility Logistics Work Model in Banjarmasin City

Some of the decisions and conclusions that can be drawn from the estimated results of the logistical evaluation model for job mobility above are:

1. Discuss the Overall Feasibility of the Model.

Number - 2 Log Likelihood is 226.98394 number at the beginning (Block Number = 0), then on Block Number = 1 number - 2 Log Likelihood drops to 206,975. This reduction, in the binary Likelihood regression is similar to the notion of ‘number of squared errors’ in the regression model, determine a better model. With large agreed figures, it can be decided that the model consisting of independent variables is statistically significant at the real level $\alpha = 0.05$.

The Goddness of fit test value is 7.6609 with a significance level of 0.4673 indicating this model is worthy to explain differences in the mobility of migrant populations. This decision was taken because the level of significance (0.4673) is greater than the real level α (0.05). The feasibility of this model, appealing to the goodness of fit test results can mean that the model is feasible to use for further analysis,

because there is no real difference between the predicted classification and the classification seen.

Furthermore, the feasibility model must also be seen from the value of the feasibility model which is equal to 20,009 with a significance level of 0.0292. This result can mean that the model is very feasible because the significance value of the model is smaller than the value of the real level 0.0 ($0.0292 < 0.05$).

2. Wald Test

The Wald test is used to partially test the feasibility of the logistics model, or test the significance of the influence of the independent variables (education, income, age, sex, marital status, previous employment type, wage system, length of work, number of skills and interactions between education and income) on dependent variable (category of occupational mobility of migrants).

The independent variable is the number of skills partially significant effect on the dependent variable occupational mobility category of migrant population, because their significance value is smaller than the real level α ($0.0145 < 0.05$). Usually the real level α in social sciences research is 0.20 or 20% (AGUNG: 1996). Whereas the independent variables of education, income, age, gender, marital status, type of previous work, wage system, length of work, and interaction (between education and income) did not significantly influence the dependent mobility of the migrant population.

4. CONCLUSION

Based on the results of research and discussion that has been described at the front of the results of this study, and then some conclusions can be drawn as follows:

The pattern of work mobility that occurs vertically increases the majority of the migrant population who work in the trade and service sectors, while the declining employment mobility is the agricultural sector, and the unchanged sector occurs in the building and services sectors patterned with horizontal mobility. The mobility pattern in terms of position / type of work that shows an increase in position is in the professional position / technician, leadership / manager, sales force, while the position which decreases vertically job mobility is in the position of industrial / production business, agricultural business, and other positions. Horizontal job mobility patterns are positions / types of work of administrative workforce. Job mobility is seen with an indicator of the level of income there is an increasing pattern of vertical mobility, namely the occurrence of job mobility which has implications for increasing income.

From the results of logistic analysis on all independent variables that affect the dependent variable of the mobility of the migrant population, only the number of skills variable significantly influences the proportion and probability of doing job mobility. While other variables that are not partially significant but are variables that have a positive effect on the proportion and probability of doing job mobility are age, sex, marital status, number of skills and the interaction factors

between education and income. And variables that negatively affect the proportion and probability of doing job mobility are education, income, type of previous work, wage system, and length of work.

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**UNIVERSIDAD
DEL ZULIA**

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Revista de Ciencias Humanas y Sociales

Año 36, N° 26, (2020)

Esta revista fue editada en formato digital por el personal de la Oficina de Publicaciones Científicas de la Facultad Experimental de Ciencias, Universidad del Zulia.

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