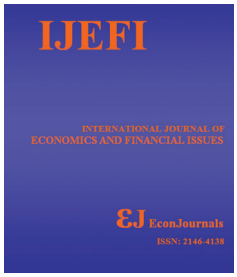

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Full-time Work Determinants in Rural Urban Fringe

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ABSTRACT

The purpose of this study is to analyze the determinants of employment opportunities in the Rural Urban Fringe area in devoting more than 35 h per week (full time). The survey is conducted on 326 labor samples determined by proportional random sampling method. Using the binomial logistic regression model of socio-economic variables, it is found that gender differences and the number of assets possessed have a significant effect on the magnitude of full-time employment opportunities. Whereas other socio-economic variables such as age, education and income showed a statistically insignificant effect.

Keywords: Rural Urban Fringe, Logistic Regression, Socio-economics, Full-time Works
JEL Classifications: J20, J22

1. INTRODUCTION

Transitional areas of land use marked by the transition from agriculture to non-agricultural are areas called Rural Urban Fringe (RUF). The pattern of agriculture began to establish on demand for the village (rural) by calculating the number of functions oriented with the city (Urban). Demand is associated with the process of urbanization, industrialization, land-speculation and increased of population mobility. Each region (village and city) can both be complementary and opposite as a city and as an integral part of the country and the same economic and social system. Thus, the RUF territory has a particular labor supply behavior in relation to the change of land use.

The behavior of individual labor supply is a central issue in the labor economy. This is important for economic theory and policy evaluation. In the micro context, labor supply is seen as the number of hours worked spent by the worker in the labor market. Instead this will be observed from the labor force participation rate if based on a macro approach.

There are two things that individuals decide in the labor supply theory. Firstly, whether to participate in labor market activities (work) or not participate in labor market activities (not working). Second, the decision to determine how much time is provided for labor market activities (number of hours worked) when deciding to participate in the labor market. In general, a person will work when the wage rate in the labor market is equal to or higher than his reservation wage, which is the minimum wage that encourages the employee to enter the labor market by offering a number of working hours (Madris, 2011; Farber, 2005; Faridi and Basit, 2011).

In addition to wage rates, there are several factors that determine a person to decide how much time is provided for the labor market activity (the number of hours worked), i.e., demographic variables such as age, education level, marital status and the number of dependents (Faridi and Basit, 2011). Meanwhile, the labor supply model proposed by Chang et al. (2011) assumes that each individual is facing the same option between full-time and part-time work. They found that the parameter estimation of labor supply elasticity are positive for both men and women, but the parameter values for women were greater than for men. Similarly, Senesky (2003) using the instrument variable technique, found out that the elasticity of male and female labor supply are positive and greater than if using conventional techniques (ordinary least squares) that resulting in negative elasticity. The instrument variables in the empirical analysis are the time of commuting from home to work place that is assumed as a fixed cost.

This paper presents a quantitative estimate of the determinants of individual labor supply behavior to work full-time or not in RUF areas in the province of South Sumatra. The supply of labor in the RUF area is special because the area is a transit on the transportation route and is an area of expansion.

2. LITERATURE REVIEW

The neoclassical labor supply model describes the factors that determine whether people work and, if so, on the hours they choose to work. This model explains that one receives good utility from consumption (wages from work are used for consumption; C) and time to rest; L. Someone will consume various types of goods during a certain period, in the simpler case the amount of money (dollars) a person incurred to consume the goods (C as the total dollar value incurred to buy all goods for a certain period). For example, if someone spends $ 1000 per week on food, rentals, cars, movie tickets, and other items, then variable C is the value of the $ 1000 they spend on consumption. The L variable describes the number of hourly breaks they spend in consuming the goods during the same period (Borjas, 2016; Tarmizi, 2012).

Based on the unitary model (Cahuc and Andre, 2004), the maximization of utility function is to choose the combination of goods and hourly rest. Suppose a family consists of two people, then it is stated that preference can be shown through utility function U (C, L_1, L_2), where U represents utility, C represents total consumption of goods and L_i (i = 1,2) describes the break taken by an individual. For individuals i wage and non-wage income is shown as W_i and R_i; The optimal choice is then determined by the utility maximization based on the budget constraint. The equation is written as:

$$\text{Max } U(C, L_1, L_2)\ C+w_1L_1+w_2L_2 \leq R_1+R_2+(w_1+w_2)L_0 \quad (1)$$

The maximized utility function can be expanded by selecting a combination of goods and hourly rest, price and income constraint U (Q, R, P) where U represents utility, Q = consumption of goods and R = hourly rest, P indicates individual and household characteristics such as age, education, marital status, number of dependents, family circumstances, and family participation on economic activity. So it is assumed that utility is maximized with time and income constraints. Written in the following equation: PqQ+YR = V+YT, where Y is the average of income, Pq = Price per unit of goods; V = non-labor income and T is the total working hours. Individuals maximize utility functions as subject to certain time constraints "T". The individual then decides how to allocate his time in house activities or market activities and breaks. Thus, the market activity is determined by the individual and the household characteristics of the individual.

To maximize the utilization function U (Q, R, P) subject from budget constraint is $P_qQ = Y (T-R) + V$. Optimization from this problem is:

$$F_Q(Q, R, P) = \lambda F_R(Q, R, P) \geq \lambda Y \quad (2)$$

Where λ shows the marginal utility of income. On the one hand, this equation shows the function of commodity demand that produces utility and on the other involves the optimal time allocation function between hourly breaks and work. If there are inequalities in the model, then the individual does not participate in the labor market. It is meant that hourly break equation is the total time R = T.

Empirical studies of labor supply have also doubled in the past 20 years. The development of this study, explicitly reviewed by Blundell and MaCurdy (1999), has the advantage of making an application of econometric methods to individual data and from the desire to evaluate public policies affecting direct labor supply. Therefore, there is an idea that each of us has an opportunity to make a tradeoff between consumption of goods and consumption breaks, the latter is defined as the amount of time spent not for work. The analysis of these options makes it possible to focus the factors that determine labor supply, initially at the individual level then to the aggregate level.

To analyze the relationship between personal income and weekday usage in the United States, Medhikarimi et al. (2015) uses secondary data taken from the United States Census Bureau's American Surveys in the form of cross section data of individual and household data, find that the increased in income reduces working hours. This study is also in line with Borjas (1980), Medhikarimi et al. (2015) and Warunsiri and McNown (2010) findings.

When demographic variables such as age, ethnic origin, marital status, and socioeconomic variables such as spouse's income and education are associated with working hours, it is found that each variables affect positively (Iwayemi and Olusoji, 2013) and negatively on working hours (Iwayemi and Olusoji, 2013; Warunsiri and McNown, 2010). Different results are presented by Pradan and Soest (1997), where it is found that in both formal and informal sectors that the number of children under 8 years has a positive and significant influence on men's working hours whereas in women otherwise, the variable of wage is positive and significant in men and the opposite occurs to the women. Furthermore, education has positive and significant effect on working hours in formal sector but to be insignificant in informal sector. Ethnic origin has negative effect on working hours in formal sector but insignificant impact on informal sector. Similarly, Tijani et al. (2010) showed that working hours with education level and marital status have negative coefficients while experience in agriculture and gender have positive coefficients.

3. MODEL AND ANALYSIS METHOD

This research is a survey analysis with cross section study design. The location of the research is in RUF area in South Sumatera province namely Prabumulih and Lubuk Linggau with sample of 326 workers determined by proportional random sampling method. To estimate the labor supply model in the RUF region a multivariate regression model is used Greene (2012). The general function of labor supply is given as follows:

$$Y_i = f(X_1, X_2, \ldots X_n) \quad (3)$$

Where Y_i denotes the number of hours worked; Y = 1, if working ≥35 h per week and Y = 0, if working <35 h per week. X_1, X_2,… X_n shows various socioeconomic variables. Because the dependent variable is binary, the model used is the cumulative function of density or an asymptotic function (between 0 and 1) in its objective function, in this case is the logit model with the following equation:

$$Pr(Y = 1|x) = Ln[p/(1-p)] = b_0+b_1X_1+b_2X_2+b_3X_3+b_4X_4+b_5X_5+e \quad (4)$$

On the right side of the equation are age variable (X_1), education (X_2), gender (X_3), revenue (X_4) and total assets owned (X_5). In detail the definition of each variable is shown in the following Table 1.

4. RESULTS AND ANALYSIS

Table 2 presents the mean and standard deviations of the key variables used in this study. Workers in the RUF area work almost 36 h per week and earn about 1 million rupiah per month.

The standard deviation of average labor income in Prabumulih is 0.89 million rupiah while 1.17 million rupiah in Lubuk Linggau. This means that the average income of labor in Lubuk Linggau shows a greater variation than the average income of labor in Prabumulih. Similarly, variations occur in working hours, number of children, and age of workforce.

Overall, the average worker's lifespan is 41.02 years, has 2-3 children, devotes 35.74 h per week, and takes only elementary education (up to junior high). When taken into account from its working hours, the average indicates that the workforce in the RUF area includes full-time work (>35 h per week) and is a productive workforce.

Table 3 shows that the feasibility of the logit regression model seen from the significance which is 0.280>0.05. This means that binomial logistic regression model is suitable for further analysis because there is no real difference between the predicted classification and the observed classification.

To evaluate the fit model is by reducing the initial likelihood −2 Log value to −2 Log likelihood value in the next step. It is also shown that in this study there is a decrease in the initial −2 Log likelihood value (in block 0) of 449.856 with −2 Log likelihood in the next step (in block 1) that is equal to 409.044. Thus, the hypothesized model is fit with the data.

Based on the regression result, there are statistically significant independent variables, namely gender differences and total assets owned. The B values of gender variables and the number of assets are 0.666 and 0.259, respectively. This means that each addition of the number of assets owned makes odds of employment opportunities over 35 h per week to increase with exp (0.259) = 1.295 or an increase of 56.42%. The argument is that the growing number of assets possessed encourages the spirit to devote more than 35 h of working hours. Especially if the assets owned increases life comfort, for example, the ownership of a gas stove to make cooking activities become easier and relatively faster, thus saving time and means the workforce can work longer. In addition, if the asset increases in the form of a motor vehicle, then it will also make it more efficient toward the workplace and the odds of working hours plus it can be bigger.

Similar to the results of Senesky (2003) and Chang et al. (2011) studies, gender variables show that the employment opportunities of men working over 35 h per week are greater at 94.6% than female labor. Different with education, where odds of employment opportunities high school and higher, work 35 h per week less than those with elementary level of education (up to junior high school). The workers with background education of high school and higher, the opportunities to work over 35 h per week is reduced by 20.6%. This is because the main work of the labor in this area of RUF is dominated by farmers.

Although not statistically significant but increasing age makes odds of employment more than 35 h per week unchanged with exp (0.000) = 1.000. Different with income, where the coefficient is positive causing a direct effect. Any increase in income will make

Table 1: Description of operational variables

Variable	Description	
Y	Working hours	= 1 if working ≥35 h per week =0 if working <35 h per week
X_1	Age	Umur pekerja saat survey dilakukan
X_2	Education	= 1 If graduated from elementary education (elementary school and junior high school) = 0 if others
X_3	Gender	= 1 if male =0 if female
X_4	Income	Logarithm function of the amount of income earned in Rupiah per month
X_5	Assets owned	The total assets owned by a worker

Table 2: Sample characteristics

Variable	Total		Prabumulih		Lubuk Linggau	
	n	Mean±SD	n	Mean±SD	n	Mean±SD
Age	326	41.02±11.190	200	38.54±10.519	126	44.96±11.135
Education	326	1.76±1.022	200	1.64±1.061	126	1.95±0.928
Income	326	1.01±1.03 million	200	0.84±0.89 million	126	1.26±1.17 million
Assets owned	326	5.37±2.610	200	4.47±2.431	126	6.79±2.225
Number of children	326	2.17±1.572	200	1.69±1.246	126	2.92±1.737
Working hours	326	35.74±19.175	200	31.14±15.328	126	43.05±22.232

Source: Processed Data, SD: Standard deviation

Table 3: Result of logistic model estimation

Variable	B	S.E	Wald	Significant	Exp (B)	95% CI for exp (B)	
						Lower	Upper
Age	0.000	0.011	0.000	0.986	1.000	0.978	1.022
Education	−0.230	0.293	0.617	0.432	0.794	0.447	1.411
Gender	0.666	0.249	7.127	0.008	1.946	1.194	3.174
Income	0.004	0.078	0.003	0.954	1.004	0.862	1.170
Assets owned	0.259	0.051	25.695	0.000	1.295	1.172	1.431
Constanta	−1.576	0.689	5.231	0.022	0.207		

Initial −2 Log likelihood: 449.856, 2 Log likelihood: 409.044, model Chi-square: 9.795 (df=8; significant=0.280). Source: Processed Data

odds of employment more than 35 h per week to increase even though it is very small which is 0.4%. This finding is inconsistent to the studies conducted by Borjas (1980), Medhikarimi et al. 2015), Warunsiri and McNown (2010) and Iwayemi and Olusoji (2013).

5. CONCLUSION

The labor force in the RUF area with the agricultural sector still dominates, which raises the fact that workers with high school education will not increase the opportunity to devote more than 35 h per week. A possible explanation is that as a transition area from agriculture to non-agriculture raises hopes for the workforce with that level of education to work in the non-agricultural sector. In line with the increasing age of the workforce also does not increase the chances of working full time. While from the gender aspect, male labor is more likely to devote more than 35 h per week (working full time) hours over women. Increased asset ownership makes full-time employment opportunities even greater. This is because the assets provide a lot of convenience and save time, such as motor vehicles, communication equipment and home furnishings.

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