

# labor Market Efficiency in Rural Urban Fringe Ogan Ilir Regency: Wage Frontier Approach

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## **LABOR MARKET EFFICIENCY IN RURAL URBAN FRINGE OGAN ILIR REGENCY: WAGE FRONTIER APPROACH**

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### **Abstract**

This study aims to analyze the extent to which the degree of wage efficiency that occurs in the labor market. Using the wage frontier approach, with the analytical unit being labor market workers in the Rural Urban Fringe area of OganIlir Regency, 314 people obtained the result that the potential wage of workers in the RUF area is closely related to its demographic and socioeconomic characteristics. The coefficients of gender variables, potential experience, type of work and education are statistically significant and positive. This indicates that the potential wage is higher for men and for workers who are more educated or have potential experience. the potential experience of frontier wages in the form of a concave pattern, this means every additional year of potential experience increases the potential wage but with a declining rate. Wage inefficiency plays a very limited role in this estimate.

**Keywords:** Rural-Urban Fringe, Labor Market Efficiency, Wage Frontier Approach

### **INTRODUCTION**

Ogan Ilir as one of the regencies in South Sumatra has a majority of people who have low education level. In 2015 the population of Ogan Ilir Regency reaches 409,171 people, with population growth of 1.32%. It can be seen from labor force data in Ogan Ilir Regency as much as 73,90% or as many as 158.121 people have

the last education level of junior high school (SMP) down. This caused the residents of Ogan Ilir District to be mostly in the informal sector because in general the formal sector accommodates the workforce with minimum education graduated from Senior High School (SMA).

<sup>3</sup> In simple terms formal and informal activities of the population can be identified based on employment status. Of the six main occupational status categories, formal workers include the trying category with the assistance of the workers / workers and work as laborers / employees / employees, the rest are informal sector workers. Based on this identification, in 2015 there were 30.14% of the workforce in the formal sector and 69.86% of the workforce in informal activities. Based on this situation it can be concluded that the informal sector workforce is more than the labor in the formal sector in Ogan Ilir Regency. The informal sector, although it tends to be low incomes but is still in demand by the workers in Ogan Ilir Regency, which consists of 60% of farmers and farm workers, 17% of merchant and transportation services.

The dominance of peasants and farm workers indicates the area of residence is in rural areas. This study examines the labor market in the context of a village or zone defined as a more transparent zone of human movement, money and goods (MUB), RUF (Rural Urban Fringe), (Muhyiddin and Miskiyah, 2017). This zone has the livelihood characteristics of agricultural and non-agricultural populations and is located between the city and the village (rural) and its presence is close to the village. The purpose of this research is to analyze labor market efficiency in RUF area from wage efficiency level by applying wage frontier approach.

## **LITERATURE REVIEW**

The study of labor market efficiency has been done in macro and micro. Even one of the pillars in the Global Competitive Index (GCI) is the Workplace Market Efficiency. So the efficiency of the job market is one of the factors required in determining the competitiveness of an economy.

The labor market efficiency indicators can be seen from the efficiency of wages. Wage efficiency is defined as the ratio between the actual wage and the potential wage of the worker, determined by the demographic and socioeconomic characteristics. Consequently, wage inefficiency is defined as a gap between actual and potential wages. Wage inefficiency occurs mainly from the imperfections of job market information and the inefficiency of job match as a result of reduced output. A well-known interpretation of the low efficiency of the labor market is "poor matching" (Cahuc and Postel-Vinay, 2002). The job match context is used to show how close the actual wage is to the potential wage. While looking for work, workers do not know which companies pay the highest wages for some of their skills. Because looking for work costs, workers may stop

looking for work and receive lower wages before finding a higher paying job. On the other hand, the employer also has imperfect information about potential recruitment. Different employers have different data access about the same worker, leading to different conclusions about the person and offering different wages.

In the labor market, a worker with a certain set of demographic and socioeconomic characteristics faces a wage offer that varies from the lowest wage ( $w_{min}$ ) to the highest potential wage ( $w_{maxi}$ ). Workers who have an actual wage less than the maximum potential wage are said to be in "wage inefficiency".

Increased job market efficiency can be divided into two effects. Firstly, the more flexible the job market the more easy workers to change jobs and potentially increase its ability to demonstrate its human capital potential. Secondly, increased labor market flexibility also makes it possible to reduce the search effort for employers and employee who can produce less desirable jobs.

Zarco, et al (2009) using stochastic estimates frontier found that there was a reduction in the ability of workers in Spain in the rate of return from human capital between 1995-2002. More specifically, women with lesser educated, more experienced, temporary workers, unskilled or employed in the service sector. For men, low-paid workers earn a greater share of their human capital than the more educated men. In contrast, highly educated women gain a greater share of their human capital potential than women who are poorly educated. This indicates low discrimination. Found in the young workers, well educated men do not fit their work so as to support the phenomenon of over education effect.

Analysis of wage efficiency in the Polish labor market conducted by Adamchick and King (2007) found indications that full-time workers realized 86 percent of their earning potential. In international comparison it is shown that the degree of efficiency of wages in Poland is high and almost similar to other developed countries. Thus, the transformation of the labor market structure in Poland raises the sensitivity of the relationship between the skills of workers and paid wages.

## **METHODS**

This research was conducted in the territory of the RUF region which bordered directly with Palembang capital of South Sumatera province, that is the direction to OganIlir Regency. The location of the research is SubdistrictPemulutanOganIlir which is located on the transportation route of Palembang - Inderalaya, Pemulutan Ulu village and Pelabuhan Dalam village. The unit of analysis is the Head of Family (KK). In Kecamatan Pemulutan, there are 1480 families, consisting of 691 families in Pemulutan Ulu village and 789 households in Pelabuhan Dalam village. The number of samples for Kecamatan Pemulutan were 314 respondents

consisting of 148 respondents in Pemulutan Ulu village, and 166 respondents in Pelabuhan Dalam village. Determination of sample respondents was done purposively by type of work.

The wage frontier approach describes the maximum potential wage for a worker with a set of specific characteristics. All workers are assumed to be in the best available wage, fully efficient position when  $w_i = w_{maxi}$  or inefficient position when  $w_i < w_{maxi}$ . The deterministic model (Greene, 1980) assumes that any deviation from the frontier (eg.  $w_{maxi}$  wage) results in inefficiency.

$$\ln w_i = \ln w_{maxi} - \epsilon_i \quad (1)$$

wherein  $\ln w_i$  and  $\ln w_{maxi}$  are the logarithms of observational wage and individual potentials  $i$ ; and  $\epsilon_i$  is a non negative error term, because it is not possible  $w_i > w_{maxi}$ .

Wage frontier uses Mincerian model so equation (1) can be written to:

$$\ln w_i = \ln w_{maxi} - \mu_i = \alpha + \beta'x_i + v_i - \mu_i \quad (2)$$

where  $x_i$  is a vector of socioeconomic characteristics and  $\alpha$  and  $\beta$  are parameters estimated.  $\ln w_{maxi}$  represents deterministic wage frontier. The degree of wage inefficiency for each worker is measured by the difference between the actual wage and the wage frontier ( $i\epsilon\mu_i$ ). In this study the inefficiency of wages results from imperfect information from workers. The individual efficiency (EFF) and inefficiency (INEFF) ratios which measure the gap between the actual wage and the frontier wage are represented by (3) below.

$$INEFF_i = 1 - EFF_i = 1 - \exp(-\mu_i) \quad (3)$$

The asymmetric degree of the term term disturbance is measured by  $\lambda$  defined in equation (4).

$$\lambda = \sigma_{\mu} / \sigma_v \quad (4)$$

while the calculation of the contribution of the variance  $\mu_i$  to the total variance is given in equation (5) (Greene, 1993).

$$\frac{Var(\mu_i)}{Var(\epsilon_i)} = \frac{[(\pi-2)/2]\sigma_{\mu}^2}{\sigma_v^2 + [(\pi-2)/2]\sigma_{\mu}^2}$$

(5)

## FINDINGS

Based on empirical research results obtained information on demographic and socio-economic characteristics such as wages, experience, education, age, occupation, gender, and marital status.

Table 1 shows the descriptive statistics of these variables. Male wages are on average larger than women's wages at a ratio of 0.745. The level of education in total and distinguished by gender shows things that are not different. This indicates that both men and women have an average level of education is still low. This low level of education is in line with the type of work employed by male workers ie laborers. While women, although most work as traders but not on a large scale, but dominant only food traders whose market scope is only around the village itself. If observed from years of work or experience, the fact that the average female worker has a longer period than male workers. But as a whole the worker in this RUF area has long been occupied his work, which is more than 30 years.

Wage frontier estimates incorporate conventional human capital characteristics such as education, experience and gender. Added also to other personal characteristics of marital status as dummy variables as well as labor market conditions by region and two occupational indicators.

Just as research in this scope is used potential experience (age minus the number of years of completed education minus 6) as a proxy of actual experience. For the regression model in Table 2 the worker used as a reference is female; low education or primary education; not married; living in Pelabuhan Dalam village.

From the estimation result of equation (2) shown in Table 2 it can be explained that the potential wage of workers in the RUF area is very closely related to its demographic and socioeconomic characteristics. Most of the variables in Table 2 are significant at 5 percent or less and have theoretical marks. The coefficients of gender variables, potential experience, type of work and education are statistically significant and positive. This indicates that the potential wage is higher for men and for workers who are more educated or have potential experience.

**Table 1. Descriptive Statistics**

	Group	Mean	Standardevasi
Wage	Male	2.024.580,0	1.608.354,932
	Female	1.509.250,8	1.629.621,162
	Total	1.883.684,0	1.639.062,744
	Ratio (f/m)	0,745	
Education	Male	SD	
	Female	SD	
	Total	SD	
Experience	Male	30,66	11,967
	Female	33,28	14,969
	Total	31,40	12,918
Occupation	Male	Worker	
	Female	Merchant	
	Total	Worker	
Age	Male	44,29	10,267
	Female	45,15	12,744
	Total	44,53	11,255
Marrige Status	Male	Married	
	Female	Married	
	Total	Married	
Sample size (N)	Male	225	
	Female	89	
	Total	314	

Based on these results, male workers have a potential wage 30.3 percent higher than female workers, *ceteris paribus*. High school-educated workers were 37.1 percent higher in their potential wages than those who had only elementary school education. A positive sign on the experiential variable and the negative sign on the experiment's quadratic variable shows the impact of potential experience on the frontier wage in the form of a concave pattern, meaning that each additional year of potential experience increases the potential wage but with a declining rate.

Married status lowers the potential for wages by 9.6 percent. According to the marriage literature it positively affects men's wages but vice versa with women.

This research actually found the fact is not so. Female workers have a higher potential wage than men in the RUF area because female workers can perform various alternative jobs eg during the growing season or harvest they can participate whereas if not in those seasons can work as food traders. Overall if the type of work is compared to the job as a farmer then work as a laborer as well as the trader gives a higher potential wage.

**Table 2. Wage Frontier Estimation**

Variable	Coefficients	Std. Error
Constant	12,556*	0,322
Male	0,303*	0,108
Married	-0,096	0,134
Pelabuhan Dalam Village	0,071	0,097
Potential Experience	0,081*	0,017
Square of Experience	-0,001*	0,000
Worker	0,520*	0,121
Merchant	0,583*	0,133
Junior High School	-0,171	0,128
Senior High School	0,371*	0,149
$\lambda$	0,7384	
$\sigma$	0,55304	
$\sigma_v^2$	0,55544	
$\sigma_\mu^2$	0,30287	

\*Significant at level 5 percent or lower

To estimate  $\lambda$  used equation (4), the result as shown in Table 2 is 0.7384. This value is a low quantity indicating that the inefficiency of the components in the data is small. This fact is in line with Adamchik and King (2007). Some studies suggest larger  $\lambda$  values, eg in Germany 1.06 (Lang, 2004); 1.83 for the United States and 2.65 for Canada (McClure et al, 1998).

Substituting the estimates of each statistical value from Table 2 into equation (5), it is found that only about 23.77 percent of the  $\epsilon_i$  variations result from wage inefficiency, while the remaining 77.23 percent is due to unexplained variation factors. These findings reinforce the previous conclusion that wage inefficiency plays a very limited role in this estimate. Also, consistent with the magnitude for the United States estimate of 27 percent (Hunt-Mc Cool and Warren, 1993). In contrast, Lang (2004) estimates 39 percent for Germany and Landeau and Contreras (2003) 51 percent for Chile. Although the value is greater, the last two estimates are the same as Adamchik and King (2007) and this study. So it implies somewhat different from the job market operations in those countries.



Furthermore, the interpretation of the efficiency ratio based on equation (3), then for the whole sample the efficiency ratio is 84.70 percent. This means that on average the workers earn 84.70 percent of their potential wages and 15.30 percent get below their potential. Further this means that workers on average can raise their wages by about 18.06 percent ( $(1 / 0.8740) - 1$ ) without any additional investment in human capital endowment. The efficiency ratio of 84.70 percent for the RUF area is consistent with results in several other countries. For example, 86 percent for the United States (Hunt-McCool and Warren, 1993); 84 percent for the United States and 83 percent of Canada (McClure et al, 1998); 83 percent for Chile (Landeau and Contreras, 2003); 80 percent for Germany (Lang, 2004); and 80 percent for the UK (Polacheck and Xiang, 2005).

## **CONCLUSION**

The findings of this study indicate that workers in the RUF area of Oganllir Regency earn 84.70 percent of their potential income. The degree of efficiency of workers' wages is also high and attracts almost equal emerging countries. If examined from this context, then Pemulutan District has the potential to become the center of growth. Supported also by the rapid development of infrastructure development in the area of Oganllir Regency.

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