Fertility, Urbanizition and Underemployment

by Yunisvita Yunisvita

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Abstract:

The study aims to examine the factors that affect the probability of being underemployed. The concept of underemployment used is working more than 40 hours per week, but income is below the standard living needs.

The research was conducted in South Sumatra Province in four cities. The analysis technique used is Logistic Regression. The results showed that significant variables are three items, namely education, number of children and self-empowerment.

Increased education does not cause a person to get out of the problem of underemployment. Likewise, if the number of children increases then the probability to be underemployed increases by 63%. Conversely, the probability level to be underemployment decreased by 28.6% when more independent and more prosperous the person is.

Keywords: Fertility, Urbanization, Underemployment.

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1. Introduction

Unemployment and underemployment are an ever-prevalent phenomenon in developing countries. Its impact is quite serious. An unemployed person becomes a burden that will diminish the development result and, on the micro level, will reduce a household income. It will bring societal problems, such as slums area, and an emergence of crime problems. On the other side, underemployment reflects low utilization that decreasing productivity. These consecutive problems, both unemployment and underemployment, will lead the increasing of poverty.

Previous studies have found unemployment-in-city because of urbanization, caused by high urban population growth itself or in-migration from the rural area side. While high urban population growth predominantly caused by high fertility rate, the in-migration from the rural area side to the city has driven by lack of job in the village that also rooted to high fertility rate too. In short, high fertilty rate has found assummed as factor driven of unemployment and underemployment (Nurlina *et al.,* 2015a). Indonesia has known as a country that had high fertility rate (mesured in Total Fertility Rate/TFR). In 2012 in rural area was 2.8 higher than the urban side. A similar conditions that occurred in other developing countries, for example, TFR in Latin America in 2012 was 3.7 in rural and 2.4 in urban areas (Taddase and Heady, 2012).

The relationship among fertility and unemployment, urbanization and unemployment, urbanization and fertility are well known issues and studied by many experts, including Brockerhoff (1998), Shapiro and Tambashe (2000), White *et al.* (2006), Michaillat *et al.* (2013) and Nurlina *et al.* (2014). The relationship among these variables is causal such as fertility affected unemployment, urbanization affected unemployment, urbanization affected fertility, and vice versa. Based on these ideas, Nurlina (2015b) stated that there is a link between fertility, urbanization and unemployment as illustrated in Figure 1. High fertility and lack of employment in villages caused many people to urbanize to cities. On the other hand, fertility in city is still relatively high, TFR of 2.4 indicated an alarming sign because it was still above TFR of 2.1 to achieve balanced population growth. Both these factors were thought to be the cause of unemployment rate and half of this was in urban areas that still high and difficult to be eliminated.

Based on those thought, there are two issues to be studied: (a) analyzing dominant factors affecting underemployment, (b) provide recommendations on the problems found in this study.

2. Literature Review

2.1 Fertility and Urbanization

The relationship between fertility and rural and urban urbanization through this following mechanism (Nurlina, 2015b). If the number of births in rural is high while its employment is not sufficiently available, both formal and informal, plus agricultural land of population reduced, it causes rural' s people move to city. This will lead to an increasing in urban population. The city's population growth is increasingly unstoppable if the city's TFR is also high and labor demand in city is increasing.

Figure 1. *Relationship Fertility, Urbanization, and Unemployment*
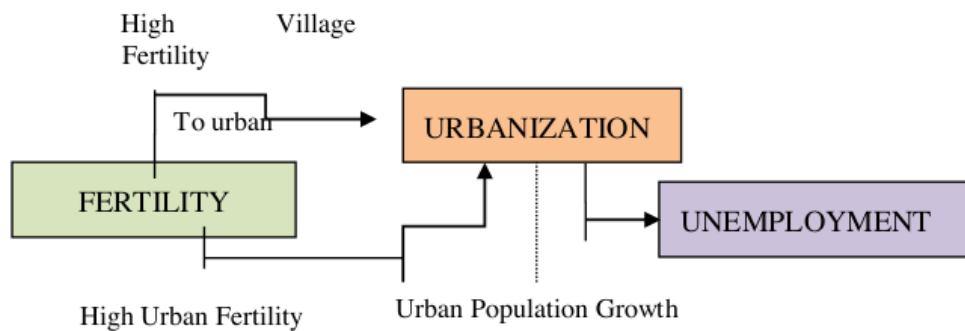
The relationship urban-rural urbanization with fertility according with Fox (2013) in Nurlina (2015b) is not direct relationship but through mortality. If mortality rate in the rural area falls while the fertility rate is high, the growth of villagers is high that causes the urbanization flow to city is still high. The recommended solution to stem the urbanization of urban villages and urbanize city is not to raise the mortality rate, but includes this following:

a) Reduce fertility rates in villages and cities by disseminating prosperous family norms. The recommended action is to delay marriage by increasing UKP (first married age), or delaying birth by reducing intercourse (sex),

b) The development of rural areas is further improved, including develops facilities and infrastructure, such as building schools to higher levels, opening transportation access, especially to marketing centers, and easily access to capital obtained.

c) The solutions (a) and (b) is mutually exclusive. Thus, it is expected that rural areas can become center of a new economy or a new growth center that could reduce unemployment.

2.2 Fertility and Unemployment

Conceptually, unemployment is those who are in labor force but still in looking for job opportunity. This type is called open unemployment. Underemployed are those

who work but under normal working hours of less than 40 hours per week (Hauser, 1974; Clogg, 1979). Both experts also argue that those work more than 40 hours per week but earned income under life deserve categorized as underemployed.
Unemployment and underemployment have very strong influence on individual and on economy of a country. In individual, unemployment will lead to loss of livelihood, skills, and increasing poverty levels. However, for country, unemployment does not promote economic growth. Economic growth declines and resulted a purchasing power decreasing. A further consequence of demand declines for goods, services, and investment becomes lower that will lead to poverty.

Tomànkovà (2015) stated that on an individual level, the relationship can be explained through the mechanism of price effects and income effects. In terms of price effects, the relationship is positive that explained as when a person becomes unemployed, the desire for things becomes lost and will switch to desire to have children that is caused opportunity cost of having children becomes cheaper. In other words, if unemployment increases, fertility also increases. In terms of income effects, the relationship of fertility and unemployment are negative. Unemployment reduces real and relative income that results in a decrease in fertility rate of a person, since value and price of child becomes expensive, thus reducing the demand for child or delaying birth. Aksoy (2014) analyzed the effects of price and income effects by sex. Price effects occur in women and income effects occur in men. Unemployment women tend to increase fertility, while unemployed men reduce fertility.

In the country context, research by Adsera (2015) in OECD countries found that when the unemployment rate is high then fertility is low. It was also found by Ana (2012) that the impact fertility rate changed in Romania for 20 years against unemployment. Ana found that unemployment had a strong negative effect on fertility rates. This means if unemployment is high, fertility level is low, vis a vis the low fertility rate. Conceptually fertility is the result of a real reproduction of women or a group of women concerning the number of babies born alive. Therefore, fertility in this study is expressed in the variable number of children.

## 2.3 Factors Affecting Underemployed

In unemployment case, fertility is not the only factor affecting unemployment. There are other factors, such as education, age, employment status and self-empowerment. Education affects underemployment, those with higher education have higher job motivation than those with low education. The underlying reasons is without high motivation they cannot be expected to achieve higher education.

In terms of age, the desire to urbanization of older person is lower than younger person. Whereas when age is older, the possibility to work $\geq$ 40 hours per week will be smaller than young age. Moreover, employment status of formal and informal, also affects underemployment. Self-empowerment will allow a person to break free

of rigidity. Empowerment lead people to spark ideas and be responsible for those idea.

Four factors affecting the underemployment are shown in Figure 2. That relationship is through urbanization variable, and it is a direct relationship. This study uses a direct relationship, by reason of: (a) urbanization can be seen as a growth of the urban population and also can be defined as the movement from rural to urban areas (Figure 1), (b) the concept of urbanization on (a) will carry the condition on unemployment or underemployed if the city cannot afford to absorb the number of working-age population growth and that will go into the field work and (c) because there are two different concepts it is difficult, to perform an operational definition.

Figure 2. *Factors of Underemployment*

| 1. Fertility |
| 2. Education |
| 3. Age |
| 4. Job Status |
| 5. Self-Empowerment |

Urbanization

Underemployment
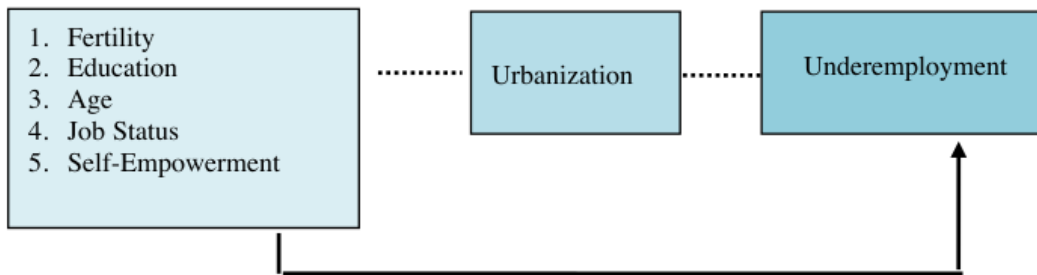
3. Research Methods

This research was conducted in Palembang, Prabumulih, Lubuk Linggau, and Pagaralam which are cities in South Sumatera, Indonesia. The population is working people in cities of Palembang, Prabumulih, Lubuk Linggau, and Pagaralam totaling of 799,112 people, consisting of Palembang: 579,473 people, Prabumulih: 69,746 people, Pagaralam: 63,139 people and Lubuk Linggau: 86,754 people. Research sample is using proportional random sampling with sample number 400 people, distributed in Palembang: 290 people, Prabumulih: 35 people, Pagaralam: 32 people and Lubuk Linggau: 43 people. The study uses primary and secondary data. Primary data is obtained by direct research into the field to collect information from respondents using a questionnaire.

Analytical technique used is Binomial Logistic, where underemployment as dependent variable and fertility, education, age, job status and self-empowerment as independent variables. The concept of underemployment in this article is the case when people work ≥ 40 hours per week but their income is under the standard living needs.

4. Result and Discussion

The influence of independent variables on underemployment by using Logisitic Regression Model (Christensen, 1997; Retherford and Choe, 1993; Nurlina, 2003), is as follows:

$$\rho = P(Y = 1) = \frac{[\exp(\beta_0 + \beta_{jk} X_{ik})]}{[1 + \exp(\beta_0 + \beta_{jk} + X_{ik})]} \tag{1}$$

$$\frac{\rho}{1-\rho} = \exp(\beta_0 + \beta_{jk} X_{ik}) \tag{2}$$

$$\ln\left[\left(\frac{\rho}{1-\rho}\right)\right] = \beta_0 + \beta_{jk} X_{ik} + \varepsilon_k \tag{3}$$

$$\ln\left[\left(\frac{\rho}{1-\rho}\right)\right] = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_k X_k \tag{4}$$

Where $\rho = P(Y = 1)$ denotes probability of an event (underemployed = 1 and not underemployed = 0).

$$\frac{Speng}{(1 - Speng)} = (Educ, Janak, Umur, Spek, Self, Lok_1)$$

Speng= underemployment; Janak = Number of children as a fertility variable; Age = age of respondent; Educ = educated (basic = 1, 0 others), Spek = job status (formal = 1 & informal = 0); Self = self empowerment is proxied from status change variable: more independent and more prosperous; location consists of Lok_1 = Palembang.

Results of logistic regression are in Table 1. With a significance level of 10% it is found that there are 3 significant variables namely: education, number of children and self-empowerment. The improvement of education from primary education (primary and junior high) to upper secondary education does not decrease the probability of respondents to not being underemployed. Even the probability of being underemployed reached 66.9%. The number of children affects the occurrence of underemployed. If the number of children increases, the probability of being underemployed also increases by 63%. Moreover, self-empowerment shows a negative relationship with underemployment. Those who can empower themselves and get out of underemployment case is high enough reaching 28.6%.

There is a difference in findings when using the concept of working less than 40 hours per week as an underemployment indicator (Table 2). Using the same data with this study, Nurlina *et al*. (2015a) found two significant variables, the number of children and the age of respondents. The number of children reduced the chances of

being underemployed because the growing number of children is a source of labor that can help respondents in their business, and probability of decline in underemployment reaches 44,8%. Conversely, increasing age adds the chances of being underemployment by 50,6%, this can be understood because with increasing age, the ability work becomes reduced. From both models (Table 1 and Table 2), the same factors affecting the occurrence of underemployment event is the number of children. This variable significantly affects the chances of being underemployed but with different directions, when the definition underemployment is different.

Table 1. *Independent Variables effect on Underemployment*

variable	B	SE	Wald	Sig	Exp (B)	95% C for Exp (B)	
						Lower	Upper
Constant	1,588	.942	2,842	0092	4894		
Education	.706	0,392	3,252	0,071	2,027	0941	4,368
Number of Children	0,535	0163	10 818	0,001	1,707	1,241	2,348
Age	0,005	0,016	0,105	0,746	1,005	0,974	1,038
job Status	0068	0398	0,029	.864	1,070	0491	2,333
Self-Empowerment	-0913	0464	3,875	0,049	0401	0162	0996
Palembang	-0081	0464	0,030	0,862	0922	0372	2,289
Chi-square Model: 20 924 (df = 6, sig = 0.002), Cox and Snell R2 = 0.051							

Source: data field.

Table 2. *Independent Variables effect on Underemployment*

variables	B	SE	Wald	Sig	Exp (B)	95% C for Exp (B)	
						Lower	Upper
Constant	-1894	.652	8428	0,004	.150		
Education	-0053	0,270	0038	.845	0949	0,559	1,609
Number of Children	-0208	0096	4,664	0,031	0,812	.673	0,981
Age	0,025	0,012	4,595	0,032	1,025	1,002	1,049
job Status	-0503	0,270	3465	0063	0604	.356	1,027
self Empowerment	0009	0275	0,001	0,974	1,009	0588	1,730
Palembang	.110	0,316	0121	0728	1,116	.601	2,072
Chi-square Model: 14 002 (df = 6, sig = 0.030), Cox and Snell R2 = 0.034							

Source: Nurlina, et al. 2015.

Besides the number of children, education and self-empowerment are also significant variables affecting underemployment. These two variables do not appear as significant variables in Nurlina *et al.,* research in 2015.

This result difference is interesting. The review is that when only using the concept of working hours (the concept used in Table 2) the variables of education and self-empowerment affect the dependent variable but not significantly. However, this difference is interesting because there are gaps of phenomena, gaps of research and theoretical gaps. To solve this gap problem, further research is needed. If it is associated with the research of Adsera (2015) in OECD and Ana's research in Romania (2012) the results of this study (Table 1) contradict with the findings of both Adsera and Ana, while the results of Nurlina *et al*. (2015) support both. However, this study and the other study by Nurlina *et al*. in 2015 is different, compared to those by Adsera and Ana. The focus of both analyses is not open to unemployment and underemployment as it is done in this study.

5. Conclusion and Recommendations

Increased education does not cause a person to get out of the problem of underemployment. Thus, the improvement of education does not necessarily imply an increase in income. This, shows that to get out of underemployment status is not determined by education factor, let alone respondents in this research are those who have been working. Therefore, the policy regulation that needs to be done in this group is to provide training in accordance with the field work, ant it is expected that this training can improve performance and further increase revenue. To support the policy, the role of Training Center is necessary. Especially in determining the areas needed in the training. The number of children affects the occurrence of underemployment, probability of underemployment increases more if the number of children increases. The results of this study do not support the findings of Tomànkovà (2015) which states that the relationship between unemployment and fertility is positive in view of the price affect or negative when viewed from the income effect. The dependent variable in Tomànkovà's study is open unemployment. There are two policies that need to be done related to the finding in this study. First, for young people is to limit the number of children they have, which means limiting the fertility rate. Second, for the older respondent, the policy that needs to be directed is to provide motivation and strengthening so that children have entered the productive age group to find a job or even open employment so that the burden of parent dependence can be reduced.

Self-empowerment which is a proxy with more independent and more prosperous indicator has negative relation with underemployment. If the more independent and more prosperous then the probability of being underemployed decreases. Recommended policies may conclude as follows: First, if the respondent is an entrepreneur (small) then access to the source of capital should be more watered down; second, if the respondent is a worker then it is recommended to open the

opportunity to increase the quality of human capital by attending training that can be more open insight and performance.

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