PREDICTING THE SUCCESS OF UNIVERSITY GRADUATES IN THE JOB MARKERT

RAJA MASBAR
Universitas Syiah Kuala

The purpose of this study is to analyze and to estimate a model of the determinants of absorption level of university graduates at the local job market. In particular, it estimates the success of state university graduates in Sumatera as they are employed by firms (local job market). It utilizes primary data from three universities in Sumatera (Cluster Sampling) that represent north, middle, and south regions are Sumatera Utara University (Medan), Andalas University (Padang), and Sriwijaya University (Palembang). This study uses Probit dan Logit. Model to estimate the determinants of absorption level of university graduates at the local job market. Generally, the result of this study shows that graduates who have positive attributes are more likely to success than other graduates in the job market.

Keywords : Absorption level, Universitas Syiah Kuala

INTRODUCTION

Unemployment among educated youth is a serious problem for the government. Some studies, however, have been done by scholars to solve the problem, the government should indicate variables that embodied with unemployed educated youth.

Manning (1998) examines structure and change in unemployment in Indonesia from the 1970s through 1996. His analysis focused on high unemployment rates among urban youth. Unemployed educated youth rate was very high. The rate was around 15-30% in 1996, where female unemployed rate was higher than the male rate, and unemployment rates among students from academic schools was higher than those from vocational schools. According to Manning these rates of unemployed educated youth were high according to international standards.

Gitter and Scheuer (1997) show that American youth had an unemployment rate of 12.2 percent in 1991, compared to 6.6 percent of Germany. The difference in unemployment rates between the two countries suggests that the initial entry of young workers into the labor force is more difficult in the United States than in Germany. The German dual system of apprenticeship training

is a key factor for more successful school-to-work transition in Germany than in the United States and helps explain the low level of German youth unemployment. Apprenticeship training in Germany combines classroom instruction with employment, a so-called dual system. Apprentices are trained on the actual machines and equipment they will use later.

The low quality of human resources is the primary cause of unemployment according to Bean (1994) and Bar (1994) who examine unemployment problem in Europe. In addition, problem of unemployment in Indonesia has been discussed by Nazamuddin (1996).

Nazamuddin argues that the unemployment rate rises over time with changes in the composition of the real output, irresponsive to inflation rates. Because the factor requirement per unit of additional output varies across the sectors of the economy, the structural change entails a lower employment elasticity for the economy. The non-agricultural sectors generate a lower marginal employment because, as output shifts away from agriculture, an additional unit of output will require lower labor input units. As a result, the growth of the real output does not induce a proportional rate of increase in the employment level and unemployment rises. The employment elasticity has been less than one since the 1960s and was about one-half from the 1980s to the first half of the 1990s.

Furthermore, the low geographical and sectoral mobility of labor and the mismatch in the labor market due to a time lag between the structural change and human capital investments may also cause rising unemployment rates. A greater effort should be devoted to reducing the unemployment rate and any macroeconomic policy should not overlook its effect on employment. A supply side long-run solution to the unemployment problem should also be pursued Nazamuddin (1996).

In order to overcome youth unemployment problem in Africa, an Entrepreneurial Skills Development Programs (ESDP) was established to promote small business enterprises (SBE). However, this technical training is not sufficient to overcome unemployment. Other factors such as financial institutions, government administration, regulations, and education are also necessary to the success of overcoming unemployment problem (Nafukho, 1998).

Becker (1983) states that investment in human capital depends on future wage, cost of education, rate of returns, and income. Based on this motivation, individual will provide himself by on the job training and specific training that are required by job market.

Furthermore, Buchari (1994) states that based on his experience on examining engineers who have graduated from universities, they need a lot of training to make them ready for work. That is the reason why Arun NGL Company has to provide a training program, the so called Engineering Professional Development Program (EPDP).

Being motivated by previous statements, Masbar (1996) undertook a research on Link and match between graduates quality of Syiah Kuala University and the quality required by firms. Empirical findings show that only 60 percent

of courses are relevant to the job market. In the subsequent research, Masbar (2000) conducted a two-year research on the same subject but it has a different scope of sample. The sample is drawn from three state universities graduates: North Sumatera University, Andalas University, and Sriwijaya University.

Theoretical foundation of this study is inspired by Hansen (1991) who examines the link between graduate education in economics and labor market. This study was sponsored by American Economic Association in 1988. In order to find out what graduate students are learning, all the three groups of respondents were asked to rank the relative importance of subjects that should be thought to each of six different types of knowledge. In addition, based on a list of skills developed for the study, respondents were asked to rank the importance that should be given to seven different skills.

Jajri et al. (1997) conducted a research on the link between graduates doing work related to economics and the labor market. The study tries to identify the general agreement and perceptions of employers on the importance of thought subjects that should acquired by graduates employed in public sectors. Finally, Oosterbeek (1998) explores the probit model to estimate probability of getting a job by using data from Adult Literacy Survey with 1970 respondents.

Based on the above findings, this paper examines the relationship between the probability of a university graduate to get a job and his attributes that are embodied in an individual as human asset. It then elaborates those attributes specifically in order to find one of the solution of unemployment problem.

DATA AND SAMPLING

Data were collected during the year of 2000 based on a research funded by Competitive Grand Research Program (Masbar, 2000). Two stages cluster sampling is used to draw the sample from population. At the first stage 3 universities were chosen from 8 State Universities in Sumatera. The three State Universities were chosen as primary sampling unit to represent North Region, Middle Region, and South Region of Sumatera. They were the Sumatera Utara University in Medan, Andalas University in Padang, and Sriwijaya University in Palembang. At the second stage, 6 departments were chosen among 7 to 10 departments of each university. University graduates from respective departments were chosen as sample respondents. At the second stage, graduates were stratified into graduates who had a job and graduates who had not (heterogeneity). Samples are drawn by proportionate random sampling because the number of graduates per sub-cluster varies with departments. Sample fraction is estimated between 2 and 5 percent. This method of sampling is called "two stage stratified cluster sampling" (Nazir, 1988).

The graduates are limited to only those who were graduated between the years of 1990 to 1997. It is estimated that the total number of graduates from 1990 to 1997 were 5000 graduates/university. If a two percent sample is drawn from the population (= a university), then the total number of respondents to be interviewed was 100 x 3 = 300 graduates (264 of them are valid).

The Model of Probit and Logit

A model has been constructed based upon the concept of a university graduates index of getting a job in the local market. This index Zi, is assumed to be a linear function of university graduate's attributes such as age, sex, marital status, GPA, years of schooling, internship, unprepared job test, limited employment, low quality of course content in state universities, hard selection, hard content of a test, number of skills, and waiting time before getting the first job. Actually, the attributes can be split into two categories: variables that have positive impact on getting a job and variables that have negative impact on getting a job. Hence, a probit model was used to explain the probability of a university graduates to success in getting a job. The success is indicated by getting a job in the local job market based on graduate's attributes, either "positive" (strength factors) or "negative" (weakness factors) variables.

It is defined that Z is the index value for university's graduates getting a job, X_+ is a vector of variables that have positive impact on getting a job, and X_- is a vector of variables that have negative impact on getting a job, then,

$$Z = f(X_+, X_-)$$

The underlying index Z is not observable from available data, so supposed that DS be represented by a dummy dependent variable which is equal to 1 if the university graduate is success in getting a job and 0 otherwise. It is also assumed that for each university graduate, Z_i^* denotes unobserved threshold variables. There are the usual thresholds underlying discrete choice models which although they are not observed directly, carry observable consequences.

Graduate get a job (observed)   :   DS   = 1 if $Z_i^* > Z$ and
Graduate unemployed (observed) :   DS   = 0 if $Z_i^* < Z$

In this setting, employed occurs if the index Z value, conditioned on graduate's attributes, falls below an unobserved threshold value, and unemployed occurs if the index Z value, conditioned on graduate's attributes, exceeds a minimum (unobserved) threshold.

Predicting Success in the Job Market

Table 1 presents descriptive statistics. Many variables are familiar, but some bear further explanation. The first variable DS which is a dependent variable represents predicted probability of success an university graduate to be employed in the job market or failed to get a job. The probability of success depends on attributes that belong to or embodied in an university graduate. Of course, there are weakness factors and strength factors that are carried by every graduate. Some strength factors (positive variables) are presented in Table

TABLE 1

Description of Variables Used in the Analysis

Variable	Definition	Max	Min	Mean	Std. Dev
DS	Probability an university graduate to get a job in the local market, DS=1 if grad had a job and DS=0 otherwise.				
Age	Age of university graduate	40 yrs	22 yrs	27 yrs	3.10
Sex	Dummy for sex: Male=1, Female=0				
Marital Status	Dummy for marital status: Married=1, Not yet married=0				
GPA	Grade Point Average (1-5): factor score based on the following range: 1=(2.0-2.5), 2=(2.51-2.75), 3=(2.76-3.00), 4=(3.01-3.5)=(>3.51)	5.00	2.00	3.11	0.88
Yr Schooling	Year graduated – Year enrollment	13 yrs	3 yrs	5.6 yrs	1.28 yrs
Internship	Dummy for on the job training (OJT): 1 if s/he had a job training, 0 otherwise				
UJT	Unprepared Job Test: factor score based on graduate's view on why s/he failed to get a job (1-10)				
LE	Limited Employment: factor score based on graduate's view (1-10)				
LQU	Low Quality University: factor score based on graduate's view (1-10)				
HS	Hard Selection: factor score based on graduate's view (1-10)				
HT	Hard Test: factor score based on graduate's view (1-10)				
1 Skill	Dummy for skill: 1=if graduate learn 1 type of skill, 0=otherwise. Graduate learn 1 skill among the following skills: typing, computer, English speaking and reading, communication, report writing, etc.				
2 Skills	Graduate learn 2 skills				
3-4 skills	Graduate learn 3 or 4 skills				
WTBGFJ	Waiting Time Before Getting First Job: in years	22 yrs	0 yrs	1.08 yrs	1.71 yrs

1 such as GPA, Internship, number of skills that s/he has, years of schooling, marital status, sex, and age.

It is expected that probability of success of an university graduate has a positive relationship with GPA, in such that as an university graduate has a high GPA, it then can be predicted that s/he will have a high probability of success in getting a job. Internship and marital status have positive relationship with the probability of success in getting a job. For Instance, if an university graduate has been married, then s/he has a very strong intention to get job so that s/he will put more effort to find one and consequently, it raises his/her probability of success.

Certainly, there are also internal weakness factors of an university graduate such as unprepared for job test (UJT), low quality of knowledge and skill they got in university (LQU), hard content of test, and highly competitive selection. In addition, external factors of an university graduate such as limited employment, will also influence the probability of success.

If a university graduate is less prepared for a job test then s/he will has a low probability of getting a job. This variable is measured in score 1 to 10. Hence, the UJT variable has a negative relationship with the probability of success. The LQU variable is a crucial variable to the academic decision maker because it has an implication to improvement of quality of education. Highly competitive selection is a big obstacle to university graduates, particularly to the new graduate, due to one of its requirement to have working experiences for job seekers.

Table 2 presents various model estimates where the dependent variable is a probability of success of a university's graduate. The results of estimation of Linear Probability Model shows that the following variables age, sex, UJT, Highly competitive selection, skill, and WTBGFJ are statistically significant.

However, based on the results of estimation by using Probit Model 1 shows that four more additional variables are statistically significant: internship, years of schooling, hard test, and limited employment (t-table, $t_{\pm = 0,10} = 1.282$).

Findings based on the results of Logit Model shows that one more variable is statistically significant: GPA. Unfortunately, there is one key variable is not statistically significant by using three models: LQU. In addition marital status is also not statistically significant. However, if we use Probit Model 3 then LQU variable becomes statistically significant, even though some other variables are no longer significant. It is interesting to show that marital status is not statistically significant by using all models.

If we use Logit Model as the final model then we still have some theoretical problems. The sign of skill variables are negative that indicate the more skill the university graduate has, the less probability of success in getting a job which is not quite right. The sign of UJT variable is positive that has theoretical problem since the sign must be negative rather than positive. LE (limited employment) variable has the same theoretical problem as UJT variable.

CONCLUSION

Even though some variables can not be used in analysis due to statistical and theoretical problems, some other key variables are still relevant in analysis of predicting success of university's graduates in the job market such as GPA, internship, age, sex, highly competitive selection, hard test, and waiting time before getting the first job. If we could improve the quality of those variables toward positive direction then it would increase the probability of university's graduates to get a job in local job market. The next question is are we ready to compete in the job market in the year 2010.

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