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Job Search Duration and Business Preparation Duration: An Empirical Study of Micro Data in Indonesia

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Abstract
This study aims to analyze the difference in job search duration and business preparation duration based on education level, training, job experience, marital status, age, and sex. The total unit of analysis used in this study is 51,112 individuals sourced from National Labor Force Survey (Sakernas) conducted in August 2017. This study applies the Survival Analysis with Cox Regression. The survival rate results show that unemployed people who prepare a business will get a job faster than their counterparts who are still looking for a job. Cox regression testing shows that education, training, marital status, and age have significantly affected job search duration in Indonesia. Meanwhile, education, training, and marital status have significantly influenced the period of business preparation in Indonesia.

Keywords: unemployment, job search duration, business preparation duration, cox regression, survival analysis

Lama Mencari Kerja dan Lama Mempersiapkan Usaha: Studi Empiris Data Mikro di Indonesia

Abstrak
Penelitian ini bertujuan untuk menganalisis perbedaan lama mencari kerja dan lama mempersiapkan usaha dilihat dari tingkat pendidikan, pelatihan, pengalaman kerja, status perkawinan, umur, serta jenis kelamin. Total unit analisis yang digunakan sebanyak 51.112 individu yang bersumber dari data Survei Angkatan Kerja Nasional (Sakernas) Agustus 2017. Metode analisis yang digunakan adalah *Survival Analysis* dengan *Cox Regression*. Hasil *survival rate* menunjukkan bahwa pengangguran yang mempersiapkan usaha akan lebih cepat memperoleh pekerjaan dibandingkan dengan pengangguran yang mencari pekerjaan. Pengujian dengan *cox regression* menunjukkan bahwa pendidikan, pelatihan, status perkawinan, dan umur berpengaruh signifikan terhadap lama mencari pekerjaan di Indonesia. Sedangkan pendidikan, pelatihan, dan status perkawinan berpengaruh signifikan terhadap lama mempersiapkan usaha di Indonesia.

Kata kunci: pengangguran, lama mencari kerja, lama mempersiapkan usaha, regresi cox, analisis survival

INTRODUCTION

Indonesia is one of the top five countries with the largest population in the world (United Nations, 2019). *Statistics Indonesia* (BPS, 2018c) in a publication entitled "Indonesia Population Projection for 2015-2045 Results of SUPAS 2015", states that the number of Indonesia's population continues to grow annually. Indonesia's population had reached more than 264 million in 2018. This figure is a 2.8-million-people increase from the previous year. An increasingly large number of populations is one indication that there are more people entering the labor market. This has been proven by demographic dividend achievement that has been ongoing since 2010 in several regions of Indonesia (World Bank, 2011).

A demographic dividend occurs due to demographic transition processes because of a decrease in both fertility and mortality in the long term (Bloom, Canning, & Rosenberg, 2011). The implication is a decrease in the dependency ratio due to a reduction in the proportion of the non-productive population and an increase in the working-age population (Ross, 2004). This condition results in the burden of someone who is at a productive age bearing the non-productive age is getting smaller. In the population study literature, it is mentioned that an area is considered to have a demographic dividend when the dependency ratio is below 50%. The peak, namely the opportunity to achieve the most significant demographic dividend in Indonesia, is estimated to be in between 2020-2030, or more commonly called as the window of opportunity period (World Bank, 2011).

The window of opportunity will be a real opportunity if all residents who belong to the working-age group are at full employment. Conversely, if this window of opportunity is not utilized correctly, it can become a disaster. Unemployment increases, people have no income, and the impacts will be society's burden. This indicates that the demographic dividend is closely related to the improvement of people's welfare (Sukamdi, 2014). However, the common-sense demographic dividend as development energy has not yet been maximized in Indonesia (Sulistyastuti, 2017).

The demographic dividend illustrates the high level of labor supply in Indonesia. On the other hand, economic growth as a reflection of labor demand also provides a positive signal. BPS (2018b) released that the Indonesian economy grew by 5.07 percent (2017) and 5.17 percent (2018). Consequently, many parties are optimistic that high economic growth can stimulate high employment growth. The expected ideal condition is that an abundant population of productive age will be well absorbed in the labor market. However, the facts indicate that the expectation has not yet met.

The unemployment rate in Indonesia is still relatively high compared to the rate in other Southeast Asian countries. BPS (2018a) released Indonesia's Unemployment Rate (TPT) in August at 5.50 percent (2017) and 5.34 percent (2018). When associated with economic growth, Indonesia's relatively high economic growth does not match with the low TPT value. This indicates that the value of employment opportunities from the created economic growth has not optimally absorbed the supply of existing labor. This means that there is still an imbalance between the labor supply and the demand in Indonesia, which results in unemployment.

Unemployment in Indonesia is still dominated by young unemployed people (BPS, 2018a). The August Sakernas results show that unemployed young people (15-24 years) account for more than half of the total unemployment, at 58.90 percent (2017) and 58.57 percent (2018). More broadly, the number of unemployed people in the age group of 15-29 years reaches 72.29 percent (2017) and 74.39 percent (2018). This amount is almost three-quarters of the total unemployment. In addition to the event of unemployment at a young age, the phenomenon of educated unemployment also occurs in Indonesia. TPT in Indonesia is dominated by the high school graduate workforce with a percentage that tends to increase, namely by 27.1 percent (2017) and 27.57 percent (2018). Whereas the TPT for people with a status of never/has not yet attended school is small and shows a declining

trend, which is only 0.9 percent (2017) and 0.5 percent (2018). In a publication entitled "Indonesian Labor Market Indicators in August 2018", it was mentioned that the highest TPT value was secondary education (SMU and SMK). This illustrates that the supply of secondary education workforce is the most unabsorbed (BPS, 2018b).

The issue of employment in Indonesia is one of the complex development problems. In simple logic, it can be said that the higher the education, the less chance for unemployment. However, if the opportunity to enter the labor market is merely viewed from this perspective, it will be effortless to overcome unemployment (Sukamdi, 1993). Discussion of the labor quality is the same as the discussion of the variety of human resources. The study includes humans both as solitary and social creatures.

A person's behavior in the labor market is described according to the theory of time allocation (Becker, 1975). In the model, it is described that working is not something fun. Conversely, choosing not to work is considered by someone as a commodity (standard goods). Thus, changes in the amount of consumed leisure time will be influenced by the price level. Then an opinion arises that a person may choose to wait until he/she gets a job appropriate to his/her educational background, region, or income that will be obtained. The concept of link and match or the idea of equivalence between labor needs and the skills required is also a cause of unemployment in Indonesia (Soleh, 2017).

(Jati, 2015) states that the optimization of demographic dividend in Indonesia must be done through new investment in human resources. One of them is the existence of quality human capital. Human capital is a term used by economists to refer to health, education, and human capacity associated with increasing productivity (Todaro and Smith, 2011). One of the basic assumptions in human capital is when someone can increase his/her income through education improvement (Dwi Atmanti, 2005). In another reference, it is mentioned that social capital investment is one of the determinants of wage rates (Becker, 1975). So, the difficulty of getting a job for an educated workforce is not caused by the absence of companies that are willing to accept them. However, an educated workforce tends to be selective in finding work (Putri, 2015). This is because when obtaining the education, the individual has sacrificed his/her time and money and hoped to get the right job to cover the spent educational costs. This has become one of the causes allowing someone to have an option in choosing a career or willing to wait for it.

Research on employment and education in Indonesia is not something new. In the 1980s, this study started with a fairly fundamental problem, which was the higher the education level of the workforce, the more significant the proportion of the educated unemployed workforce. This interpretation seems empirically correct, but it becomes dangerous if used as a basis for decision making. Therefore, it needs to be re-examined that unemployment is not merely a symptom of supply but is also related to the phenomenon of demand. One of the causes is a structural inequality, namely: the occurrence of imbalance between the structure of work opportunities and the workforce (Hasibuan et al., 1992).

Purnomo & Sukamdi (2012) conducted research using August 2010 Sakernas data in East Java Province. The result of the study concludes that TPT is very high in young age and educated population groups. Meanwhile, in a survey conducted by Dhanani (2004) in

Indonesia, it is stated that open unemployment for young people was higher than for adults, which was not because young people were less able to be employed. However, it is more caused by a continuous flow of school and college graduates. In other words, the age within the range becomes a transition age shifting from education to work.

Kavkler et al. (2009), in their research, used the Cox Regression model to find out the duration of unemployment in 5 countries, namely Romania, Austria, Slovenia, Croatia, and Macedonia. The result is that age, education, sex, and regional factors vary between states. The most prominent sex gap in the unemployment duration is in Croatia. For the age variable, the problem of the long term of unemployment at a young age occurs both in Romania and Macedonia. Whereas in Slovenia, Austria, and Croatia, the disadvantageous position lies in the aging workforce. In Slovenia, specifically, a master's degree graduate has a lower chance of finding work compared to the bachelor's degree counterparts.

Muhson, Wahyuni, & Mulyani (2012) analyzed to find out the relevance between the world of work and college graduates. In a snowballing mechanism, data were collected from alumni of Universitas Negeri Yogyakarta (UNY) majoring in Economic Education. The result of the study indicates that as many as 95.2 percent of alumni have been absorbed in the job market. When related to the type of work, more than half of the alumni work as educators at 51 percent. For alumni who have not been absorbed in the job market, as many as 25.4 percent of alumni experience constraints in getting jobs because of many competitors. While another 20.4 percent of them experience obstacles because there was no job vacancy for the graduates of the economic education study program. Handayani (2015) mentions the cause of the high number of highly educated unemployed young people in Indonesia is not only influenced by the relevance of college graduates, but also by reservation wage.

Pasay & Indrayanti (2012) used a regression model and a model built by Mincer to conduct research related to the unemployment of educated workers in Indonesia. From the study, it was obtained that the profile of open unemployment was someone who was married, male, aged less than 22.5 years, a city dweller, highly educated, and had attended the training. Besides, it was also concluded that the long duration of unemployment for educated workers is higher than for workers with only primary education or not attending any school. A study on job search duration in Indonesia was also conducted by Sudana, Suciptawati, & Ida Harini (2013) using Sakernas 2012 data. The results of the Cox proportional hazard regression show that city dweller individuals have lower employment opportunities compared to village dwellers, women have lower opportunity than men, unmarried individuals have lower opportunity than the divorced ones, and individuals who are not yet married have smaller opportunity than those who are already married.

Faruk (2015) analyzed interval-censored survival data to find out how much time it took for the alumni to get their first job after graduating from Universitas Sriwijaya. The data used were in the form of primary data using a questionnaire distributed through the official website of the university (a tracer study), with a total sample of 637 alumni. The survival function was estimated using the non-parametric maximum likelihood estimate method. The results show that the highest chance for the alumni to get a job is two years

after graduation. Fikri, Nurseto, Muhson, & Supriyanto (2017), in a descriptive exploratory study through a quantitative approach to the Economics Education alumni of FE UNY, concluded that the average waiting period for graduates to get a job is three months.

Research by Wardhana, Kharisma, & Ibrahim (2019) focuses on youth unemployment in West Java Province. The data used were Sakernas data of August 2017. By using logistic regression, it is concluded that education, marital status, age, household size, and status in the household have a substantial impact, while participation in training, location of residence, and sex do not have any significant effect on youth unemployment opportunities in West Java.

Employment planning is essential in economic development. Many studies have been carried out on job search duration as the micro side of the unemployment issue. However, most research focuses on job search duration. Whereas another matter, namely: business preparation duration, is simply ignored. This fact piques an interest to conduct an inquiry related to unemployment, job search duration, and business preparation duration in Indonesia. This study aims to determine: (1) the characteristics of unemployment in Indonesia (2) the opportunities for someone to search for a job/to prepare a business in Indonesia, (3) the influence of the education level, marital status, age, and sex on the duration of job search/business preparation in Indonesia.

METHOD

This study uses secondary data from *Statistics Indonesia* (BPS). In 2017 the National Labor Force Survey (Sakernas) was conducted semi-annually, namely in February and August. The total sample in the semester I Sakernas (February) was 50,000 households and produced provincial level estimates. Meanwhile, the full respondents in semester II Sakernas (August) was 200,000 households and produced estimates up to district/city level. The data used in this study were the raw data of Sakernas results in August 2017 in Indonesia.

The concept and definition of employment in this study refer to the Standard Labor Force Concepts, where the population is classified into two categories, namely: population age working and not-working age. The working-age population can be divided into two, namely: the labor force and not economically active. The concept of unemployment used is unemployment, referring to the 13th ICLS (International Conference of Labor Statisticians) concept. This refers to the recommendations of the ILO (International Labor Organization) through the ICLS used by BPS in its publication. The unit of analysis in this study was the population who had worked one year ago (0-12 months), unemployed people who were looking for a job, and unemployed people who were preparing for business at his/her own risk with or without unpaid workers. Whereas unemployed people doing two activities at the same time, namely looking for a job and preparing a business, were not included in the unit of analysis. Thus, the total group of analysis in this study was 51,112 individuals.

The used analytical methods were descriptive analysis and inference analysis. Descriptive analysis was applied to describe the features of unemployment as well as the characteristics of the population who had worked for less than one year. While the used

inferencing analysis was Survival Analysis with the Cox regression model. Survival analysis or known as time-to-event is a method for analyzing lifetime, waiting time, or time until a specific event occurs (Harlan, 2017).

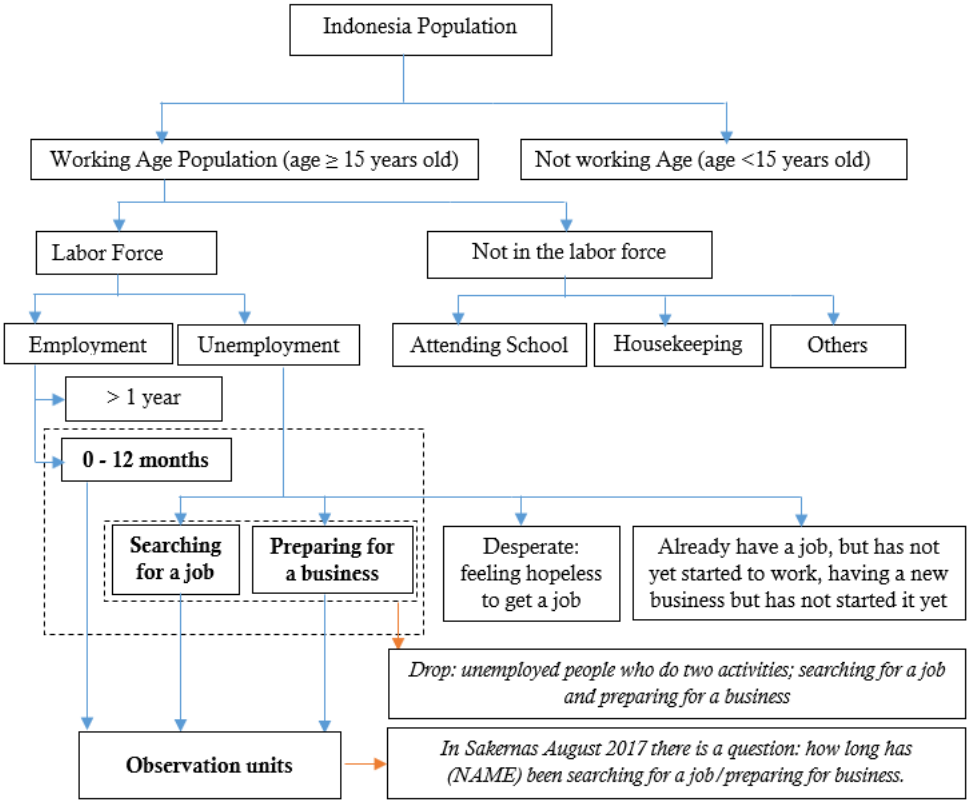


Figure 1. Employment diagram (modification)

Cox Regression is included in the semiparametric process (Cox, 1972). In this study, the significance test was carried out with all variables and then excluded insignificant variables. According to Cox & Oakes (1984), survival analysis is aimed at several objects in which each experiences an 'event', or often referred to as a time of failure. Failure is defined as the time interval until the occurrence of the intended event. To identify failure accurately, there are three conditions, namely: the start time (origin time), the scale of measurement (in hours, months, years, etc.), as well as the definition of failure. The start time in this study was different for each individual while the scale of measurement was in months. Meanwhile, the description of the failure in this study was when someone who was looking for a job or preparing for business had finally gotten a job.

Table 1. Description of Censored and Uncensored Data

Censor Status	Censor	Information	Questions in August 2017 Sakernas
0	Censored / incomplete data	Until the end of the study, the respondent was still unemployed	How long has (NAME) been searching for a job/preparing for a business (Block V.C detail 17)
1	Uncensored / complete data	Until the end of the research, the respondent had found a job	How long has (NAME) been searching for a job/preparing for a business in the main occupation (Block V.D. detail 25.b)

A specific definition that is difficult in survival analysis is a condition where all objects can be fully observed until they reach the event. This is difficult to fulfill because it will take a long time and is expensive. Thus, in survival analysis, it is possible to have data with censored and uncensored statuses. Data with uncensored status were complete data. In this case, until the end of the research, someone had gotten a job (worked one year ago). Meanwhile, the censored data were incomplete data in which someone had still been unemployed until the end of the study.

Data processing in this study used both Microsoft Excel and Stata 14. All units of analysis in this study were classified into two groups, namely: data sets for job seekers and data sets for preparing a business. The hypotheses proposed in the study were: 1) Social and demographic characteristics have significantly affected job search duration in Indonesia, and 2) Social and demographic characteristics have significantly influenced the period of business preparation in Indonesia. Hence there are two models, namely a model for the job search duration and a model for business preparation duration. Hazard *h(t)* is the rate value. The research model used in this study is as follows:

$$Ln\{h(t|X)\} = \beta_{11}SMU + \beta_{12}SMK + \beta_{13}Diploma + \beta_{14}Bachelor + \beta_{21}JobExperience + \beta_{31}Certified + \beta_{41}Married + \beta_{51}Young + \beta_{61}Male + \varepsilon$$

The variables used in this study were classified into dependent and independent variables. The details of the variables in the study are as follows:

Table 2. Variables, Symbols, and Scales

Variables	Symbols	Information	Scales
Dependent			
Job Search Duration		Numerical	time (month)
Business Preparation Duration		Numerical	time (month)
Independent			
Social Characteristics			
1. education level	*SMP*	1. SMP and below	base category
	SMU	2. SMU	1= SMU 0= others
	SMK	3. SMK	1=SMK 0= others
	Diploma	4. Diploma I, II, III	1= Diploma I, II, III 0= others
	Bachelor	5. Diploma IV/S1, S2, S3	1= Universitas 0= others
2. job experience	*Job Experience*	1. yes 2. no	1= yes 0= no
3. certified job training	*Certified*	1. yes 2. no	1= yes 0= no
4. marital status	*Married*	1. married 2. others	1= married 0= others
Demographic Characteristics			
5. age	*Young*	15-29 years old 30 years and above	1= 15-29 years old 0= 30 years and above
6. sex	*Male*	1. male 2. female	1= male 0= female

FINDING AND DISCUSSION

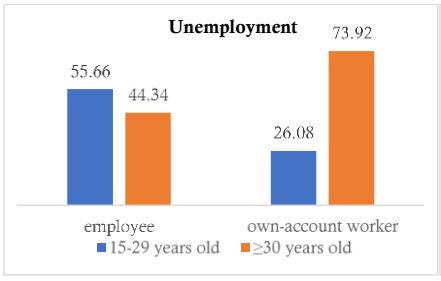
Descriptive Analysis

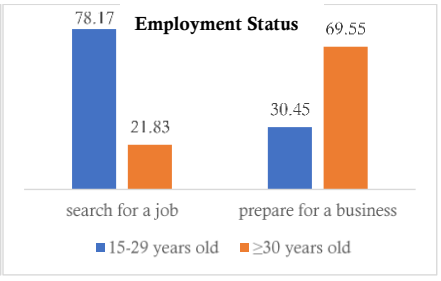
Table 3 provides an overview of the workforce becoming the unit of analysis in the research based on job status. The group of the study consisted of 39,219 individuals who worked (0-12 months) and 11,893 individuals identified as unemployed. The group of analysis shows that the proportion of people with employee status tends to be higher (72.65%) than those who become businessmen (27.35%). The same thing is reflected in the number of unemployed people searching for a job as the number also dominates (94.95%) compared to people who are preparing a new business (5.05%).

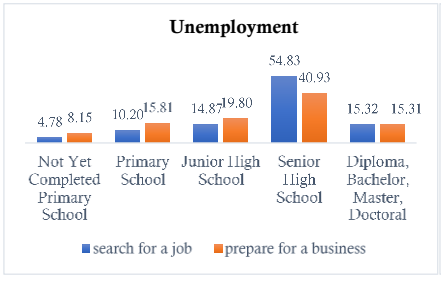
Table 3. Description of Unit Analysis

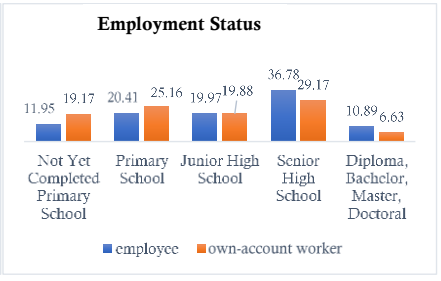
Description	Total	Percentage
Unemployment	11,893	100.00
Looking for a job	11,292	94.95
Is preparing for a new business	601	5.05
Work (0 – 12 months)	39,219	100.00
Employee/freelancer/domestic worker	28,494	72.65
Self-employed worker, employee-assisted worker	10,725	27.35

Unemployed people who are looking for a job in Indonesia are dominated by young people (15-29 years), which is 78.17 percent. This condition is inversely proportional to unemployed people who prepare a business, where the majority are residents aged 30 years and above (69.55%). This indicates that the opportunity for an older person (30 years and above) to enter the business world is more considerable. It is next supported by information that the majority of businessmen are residents aged 30 years and above (73.92%). According to sex, job seekers are dominated by men (59.22%). Meanwhile, unemployed people who prepare business are dominated by women (62.06%). This condition is slightly different from the labor force who has entered the world of work. Men are more dominant, both working as employees and as businessmen.









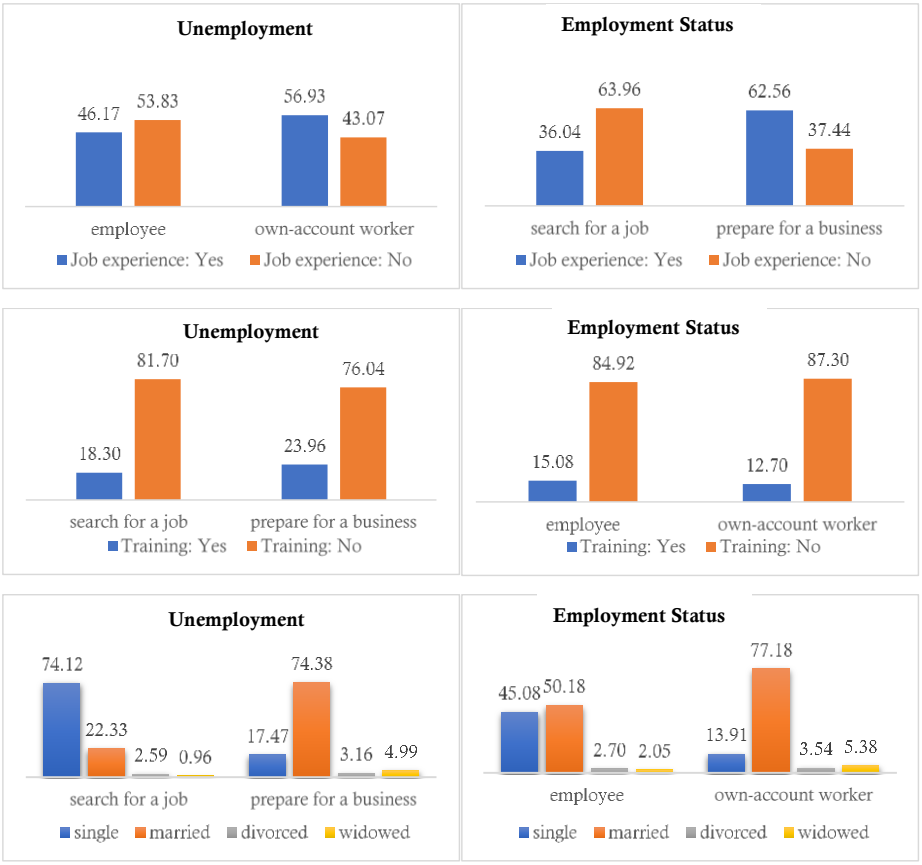


Figure 3. Unemployment and Employment status based on social characteristics (%)

Jobseeker profiles are dominated by senior high school graduates, males, single, without job experience, and training certificates. Meanwhile, the profiles of unemployed people who prepare a business are governed by senior high school graduates, females, married, with job experience and without a training certificate. On the other hand, the labor force who have a job are dominated by married people, both as employees and as businessmen.

Survival Rate

Table 4. Survival Rate "Job Search Duration and Business Preparation Duration (month)"

Classification	25 %	50%	75%
Job search duration	1	1	8
Business preparation duration	1	1	1

Table 4 shows that the median unemployment group searching for a job in one month. This means that 50% of unemployed people remain unemployed even after one month of looking for a job while as many as 75% of unemployed people remain unemployed after eight months of searching for a job. Meanwhile, those in the unemployment group who prepare a business need a shorter time to shift their status from unemployment to employment. Similar information is found in Figure 4 that people preparing a new business will get a job faster than their counterparts who are looking for a job as employees. On

average, the time needed by someone who is looking for a job is 2.80 months. Meanwhile, the time for someone who is preparing a business to become a businessman is only 1.62 months. Obtained information based on figure 4 is that people who have graduated from SMP and below will get a job faster than their counterparts who are looking for a job (less than three months). This result is in accordance with the result of Dwi Atmanti (2005) that the higher the education, the more selective the people in accepting a job.

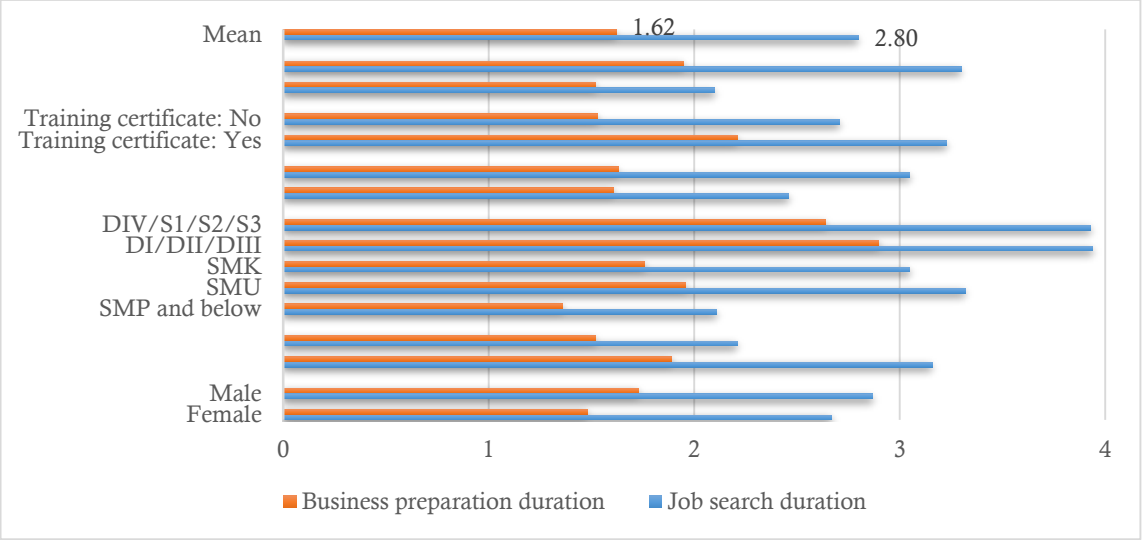


Figure 4. Job search duration and business preparation duration (month)

Cox Regression

This study applies a backward elimination method, namely by running for all independent variables and removing insignificant variables. The elimination process is completed when all variables entered into the model are significant (Collet, 1994). Cox regression testing shows that education, training, marital status, and age have significantly affected job search duration in Indonesia. Meanwhile, education, training, and marital status have significantly influenced the period of business preparation in Indonesia. The proportional-hazards test in table 5 shows that the data fit both cox regression models, where the p value> 0.05.

Table 5. Proportional-hazards Assumption in the Cox Regression Model

	chi2	Df	Prob>chi2
Job search duration	12.92	8	0.0741
Business preparation duration	6.33	6	0.3875

Table 5 shows that the model result of the proportional-hazards assumption test with Schoenfeld residuals is used to test whether or not the model fits the Cox Regression. The hypotheses used are:

H_0: the proportional hazard assumption is met.

H_1: the proportional hazard assumption is not fulfilled.

Reject H_0 when p-value $<\alpha$

The α value used is 1 percent or 0.01.

The result of the test shows that the p-value for the "job search duration" model is 0.0741. Where 0.0741>0.01; it means that it does not reject H_0 or that the proportional hazard assumption is met. These results indicate that the "Job search duration" model is compatible with the Cox Regression. The same results appear from the "Business preparation duration" model, where the test shows that the p-value is 0.3875. Where 0.3875>0.01; it means that it does not reject H_0 or that the proportional hazard assumption is met. These results indicate that the "Business preparation duration" model is also compatible with the Cox Regression.

Job Search Duration Based on Education, Job Training, Marital Status, and Age

Cox regression testing show that education, training, marital status, and age have significantly affected job search duration at the 1 percent level. Meanwhile, job experience and sex variables are not significant, so they must be excluded from the model. The variable education explains the comparison between people who graduate from SMP and below as a reference group. The estimates in table 6 show that the hazard ratio for the variable education mostly changes only slightly when compared to those from the hazard ratio. The group of respondents who have graduated from SMU has a hazard ratio of 0.7708. It can be interpreted that the time needed to look for a job by people who have graduated from SMU is 1.2974 times longer than their counterparts graduating from SMP and below. SMK graduated have a hazard ratio of 0.8062. It can be interpreted that the time needed to look for a job for people who have graduated from SMK is 1.2404 times longer than those graduating from SMP and below. The time needed to seek for a job by people who have graduated from DI/DII/DIII is 1.3389 times longer than those who graduate from SMP and below. Moreover, the time needed to look for a job by people who have graduated from DIV/S1/S2/S3 is 1.3289 times longer than those graduating from SMP and below. From the hazard ratio value, it can be concluded that people who have graduated from senior high school and bachelor need a longer time to find a job. It can be explained that this group has higher bargaining power and thus requires more time to choose a career. Other information obtained from table 8 is that people with a job training certificate are 1.4046 times faster at getting a job than those without a job training certificate. Indirectly this shows that individuals with higher education tend to be selective in accepting work so that they have a longer duration of unemployment. This condition is different from individuals with low education who tend not to have many options and tend to accept job offers more quickly. The results of this study illustrate that people with higher human capital tends to be more selective. This is in line with the statement by (Borjas and Van Ours, 2010) stating that structural unemployment arises due to a mismatch between the skills demanded by the company and the skills supplied by the workers.

The difference in economic responsibilities between individuals who have married and others are predicted to influence a person's decision to work. The results show that individuals who have married have a hazard ratio of 1.3571. This means that time looking for a job for individuals who are married 1.3571 times faster than others. Someone who was married has a greater economic responsibility towards his family compared to others. This

is what drives a person to get a job faster as a source of fulfilling family needs. It is consistent with the study by Sudana, Suciptawati, & Ida Harini (2013) that marital status has significantly affected job search duration. On the other hand, old individuals (≥30 years old) are 1.0790 times faster in getting a job than young individuals. The younger age group tends to be picky about work. In general, these findings are consistent with previous studies by Kavkler et.al., (2009) that age has significantly affected job search duration.

Table 6. Cox Regression Hazard Ratio Values

Variable	Job search duration	Business preparation duration
Education level; dummy (base: SMP and below)		
SMU	0.7708***	0.9100***
	(0.0122)	(0.0232)
SMK	0.8062***	0.9313**
	(0.0153)	(0.0327)
DI/DII/DIII	0.7469***	0.7977***
	(0.0285)	(0.0542)
DIV/S1/S2/S3	0.7525***	0.8174***
	(0.0183)	(0.0409)
Job training; dummy (base: without certified job training)	1.0460**	0.9347**
	(0.0192)	(0.0297)
Job experience, dummy (base: without job experience)	not significant	not significant
Marital status; dummy (base: others)	1.3571***	1.0545**
	(0.0204)	(0.0245)
Age; dummy (base: old)	0.9268***	not significant
	(0.0142)	
Sex; dummy (base: female)	not significant	not significant

Note: *** shows significance at 1 percent; ** shows significant at 5 percent; (base) is the ignorance category

Business Preparation Duration Based on Education, Job Training, and Marital Status

Cox regression testing shows that education, training, and marital status have significantly influenced the duration of business preparation at the 5 percent level. Meanwhile, job experience, age, and sex variables are not significant, so they must be excluded from the model. In the marital status variable, the test results show that married individuals have a hazard ratio of 1.0545. This means that the length of time to prepare a business for married individuals is 1.0545 times faster than others. The job training variable shows the hazard ratio value of 0.9347. This result is contrary to individuals who are looking for a job.

The education variable explains the comparison between individuals with people who have graduated from SMP and below as a reference group. In the group of respondents who have graduated from SMU, it has a hazard ratio of 0.9100. It can be interpreted that the length of time to prepare a business for people who have graduated from SMU is 1.0989 times longer than the graduates of SMP and below. The length of time to prepare a business for people who have graduated from SMK is 1.0738 times longer than their counterparts graduating from SMP and below. The length of time to prepare a business for people who have graduated from DI/DII/DIII is 1.2536 times longer than the graduates of SMP and below. Furthermore, the length of time to prepare a business for people who have graduated from DIV/S1/S2/S3 is 1.2234 times longer than those who graduate from SMP and below. The results are parallel to the result of Pasay & Indrayanti (2012) stating that the duration

of unemployment is higher for educated workers than for workers with only primary education level or not attending any school.

CONCLUSION

First, jobseeker profiles are dominated by senior high school graduates, males, single, without job experience, and training certificates. Meanwhile, unemployed people who prepare a business are governed by senior high school graduates, females, married, with job experience and without a training certificate. Second, the survival rate results show that unemployed people who prepare a business will get a job faster than their counterparts who are looking for a job. Third, Cox regression testing shows that education, training, marital status, and age have significantly affected job search duration in Indonesia with a significance level of 1 percent. Meanwhile, education, training, and marital status have considerably influenced the period of business preparation in Indonesia at the 5 percent level. Therefore, employment will be optimal when there is an effort to capture the window of opportunity from dividend demographics. For policymakers, the concept of link and match in the absorption of labor needs to be improved especially concerning human capital.

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REFERENCES

Becker, G. S. (1975). Investment in Human Capital: Effects on Earnings. In *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education, Second Edition* (pp. 13–44). NBER.

Bloom, D. E., Canning, D., & Rosenberg, L. (2011). *Demographic Change and Economic Growth in South Asia* (No. 67). WDA-Forum, University of St. Gallen.

Borjas, G. J., & Van Ours, J. C. (2010). *Labor economics*. Boston: McGraw-Hill/Irwin.

BPS. (2018a). Data Pengangguran Terbuka.

BPS. (2018b). *Indikator Pasar Tenaga Kerja Indonesia Agustus 2018*. Jakarta: BPS.

BPS. (2018c). *Proyeksi Penduduk Indonesia 2015-2045 Hasil SUPAS 2015*. Jakarta: BPS.

Collet, D. (1994). *Modelling Survival Data in Medical Research*. London: Chapman & Hall.

Cox, D. R. (1972). Regression Models and Life-Tables. *Journal of the Royal Statistical Society: Series B (Methodological)*, *34*(2), 187–202. https://doi.org/10.1111/j.2517-6161.1972.tb00899.x

Cox, D. R., & Oakes, D. (1984). *Analysis of Survival Data*. London: Chapman and Hall.

Dhanani, S. (2004). *Unemployment and Underemployment in Indonesia, 1976-2000: Paradoxes and Issues*. ILO.

Dwi Atmanti, H. (2005). Investasi sumber daya manusia melalui pendidikan. *Jurnal Dinamika Pembangunan (JDP)*, *2*(Nomor 1), 30–39.

Faruk, A. (2015). Analisis Data Tersensor Interval Dalam Pemodelan Waktu Mendapatkan Pekerjaan Pertama Alumni Universitas Sriwijaya. *Prosiding Seminar Nasional Matematika Dan Pendidikan Matematika*, 123–130.

Fikri, A. A. H. S., Nurseto, T., Muhson, A., & Supriyanto. (2017). Peluang Kerja Lulusan Pendidikan Ekonomi Fakultas Ekonomi Universitas Negeri Yogyakarta. *Jurnal Penelitian Humaniora*, *22*(2), 71–82.

Handayani, T. (2015). Relevansi Lulusan Perguruan Tinggi di Indonesia dengan Kebutuhan Tenaga Kerja di Era Global. *Jurnal Kependudukan Indonesia*, *10*(1), 53. https://doi.org/10.14203/jki.v10i1.57

Harlan, J. (2017). *Analisis Survival*. Depok: Penerbit Gunadarma.

Hasibuan, S., Tilaar, H., Machrany, & Pongtuluran, A. (1992). *Profil Pendidikan dan Ketenagakerjaan dalam Kaitannya dengan Masalah Pengangguran Tenaga Kerja Terdidik*. Jakarta: Kelompok Kerja Pengembangan Sumber Daya Manusia.

Jati, W. R. (2015). Bonus Demografi Sebagai Mesin Pertumbuhan Ekonomi: Jendela Peluang atau Jendela Bencana di Indonesia? *Populasi*, *23*(1), 1–19. https://doi.org/10.22146/jp.8559

Kavkler, A., Dă nă cică , D. E., Babucea, A. G., Bić anić , I., Böhm, B., Tevdovski, D., … Boršič , D. (2009). Cox regression models for unemployment duration in Romania, Austria, Slovenia, Croatia, and Macedonia. *Romanian Journal of Economic Forecasting*, *10*(2), 81–104.

Muhson, A., Wahyuni, D., & Mulyani, E. (2012). Analisis Relevansi Lulusan Perguruan Tinggi. *Jurnal Economia*, *8*(1), 42–52.

Pasay, N. H. A., & Indrayanti, R. (2012). Pengangguran, Lama Mencari Kerja, dan Reservation Wage Tenaga Kerja Terdidik. *Jurnal Ekonomi Dan Pembangunan Indonesia*, *12*(2), 116–135.

Purnomo, A., & Sukamdi. (2012). Karakteristik Penganggur Terbuka, Setengah Penganggur dan Pertumbuhan Ekonomi di Propinsi Jawa Timur (Analisis Data Sakernas Agustus Tahun 2010). *Jurnal Bumi Indonesia*, *1*(2), 112–120.

Putri, R. F. (2015). Analisis Pengaruh Inflasi, Pertumbuhan Ekonomi dan Upah Terhadap Pengangguran Terdidik. *Economics Development Analysis Journal*, *4*(2), 175–181.

Ross, J. (2004). Understanding the Demographic Dividend. *POLICY Project Note*.

Soleh, A. (2017). Masalah ketenagakerjaan dan pengangguran di Indonesia. *Cano Ekonomos*, *6*(2), 83–92.

Sudana, I. G. A., Suciptawati, N. L. P., & Ida Harini, L. P. (2013). Penerapan Regresi Cox Proportional Hazard untuk Menduga Faktor-Faktor yang Memengaruhi Lama Mencari Kerja. *E-Jurnal Matematika*, *2*(3), 7–10. https://doi.org/10.24843/mtk.2013.v02.i03.p041

Sukamdi. (1993). *Peningkatan Kualitas dan Produktivitas Tenaga Kerja*. Yogyakarta: Pusat Studi Kependudukan dan Kebijakan Universitas Gajah Mada.

Sukamdi. (2014). *Kumpulan Paper Seminar Bonus Demografi 12 Juni 2014*. Yogyakarta: Pusat Studi Kependudukan dan Kebijakan Universitas Gajah Mada.

Sulistyastuti, D. R. (2017). Tantangan Indonesia Untuk Mengoptimalisasikan Bonus. *Jurnal Studi Pemuda*, *6*(1), 538–547.

Todaro, M. P., & Smith, S. C. (2011). *Pembangunan Ekonomi Jilid 1 Edisi 10*. Erlangga.

United Nation. (2019). Review Populasi Dunia.

Wardhana, A., Kharisma, B., & Ibrahim, Y. F. (2019). Pengangguran Usia Muda Di Jawa Barat (Menggunakan Data Sakernas). *E-Jurnal Ekonomi Dan Bisnis Universitas Udayana*, 1049–1062.

World Bank. (2011). Bonus Demografi. In *Indonesia's Intergovermenmental Transfer Response on Future Demographic and Urbanization Shifts, Improving the Policy Framework for Fisca Desentralisation.* (pp. 1–15). Washington, DC: World Bank.