



ANALYSIS OF FACTORS AFFECTING THE WAITING PERIOD OF EDUCATED WORKERS

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Abstract

Educated unemployed are the population of the labor force who do not yet have a job but have completed the upper secondary level of education. Currently the level of education is no longer a reference to get a job quickly, there are many other factors that can affect the time to get a job. This study aims to analyze the effect of education level, age, gender and training experience on the waiting period of educated workers in Denpasar City. This study used data sourced from the August 2022 Denpasar City Sakernas questionnaire and involved 895 communities as samples. The data were analyzed using SPSS based on multiple linear regression techniques. The results showed that university graduates had a shorter waiting period than high school graduates, age positively affected the waiting period, gender did not affect the waiting period, respondents who had training experience had a shorter waiting period than those who did not have training experience. Based on the results of the study, it is expected that the local government will be able to balance the harmony between education and labor demand, open more jobs, and increase human resources.

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INTRODUCTION

Unemployment is a very serious problem in almost every country, as well as in Indonesia which is facing population dynamics, where the structure of the young population is undergoing increasing changes. The problem of unemployment also occurs in Bali Province, which when compared to other provinces in Indonesia has its own character and is very specific. The economy in Bali is known to utilize the tourism industry, where this industry is proven to encourage changes in the structure of the economy. This change in economic structure has gradually caused changes in the absorption of labor in Bali. Table 1 below will present data on the number and rate of unemployment by district/city in Bali Province.

Table 1.
Working Population, Percentage of Unemployment, and Labor Force Participation by District/City
August 2021 Bali Province

Regency /City	Workforce (People)	Work (People)	Unemployment (People)	Not the Labor Force (People)	Open Unemployment (%)
Jembrana	179.356	172.282	7.074	43.161	3,94
Tabanan	287.569	276.569	11.000	86.256	3,83
Badung	417.078	388.428	28.650	155.831	6,87
Gianyar	337.855	314.934	22.921	83.094	6,78
Klungkung	115.235	112.973	2.262	29.154	1,96
Bangli	151.191	150.045	1.146	30.172	0,76
Karangasem	278.920	270.291	8.629	47.712	3,09
Buleleng	391.692	371.334	20.358	127.923	5,20
Denpasar	579.643	550.214	29.429	221.300	5,08
Bali	2.738.539	2.607.070	131.469	824.603	4,80

Source: SAKERNAS, BPS Bali Province, 2021

Table 1 illustrates the open unemployment rate across districts in Bali Province as of August 2021, with Badung Regency recording the highest rate at 6.87 percent, followed by Gianyar, Buleleng, and Denpasar. This trend reflects a broader issue of labor market imbalance, where the growth of the labor force outpaces job creation. Such disparities contribute to increased urbanization, as individuals migrate from rural to urban areas in search of better employment opportunities and access to public services. The phenomenon aligns with the foundational principles of the Todaro migration model, which posits that migration is driven by expected income differentials and the availability of urban amenities. However, recent studies have expanded this framework. Todaro and Smith (2020) emphasize that migration decisions are influenced not only by wage expectations but also by access to education, healthcare, and infrastructure. Taiwo (2022) further updates the Harris-Todaro model by incorporating the dynamics of the urban informal sector, revealing that urban unemployment is increasingly shaped by wage comparisons between formal and informal employment, rather than minimum wage alone. Additionally, Aslam et al. (2025) highlight that industrialization and the concentration of economic activities in urban centers are key drivers of rural-to-urban migration, reinforcing the need for balanced regional development. These insights suggest that urbanization, while offering economic potential, also poses challenges such as social inequality, infrastructure strain, and rising educated unemployment, particularly when labor market demands are misaligned with the skills of the workforce.

In addition to the rampant flow of urbanization, the imbalance between labor demand and labor supply remains a significant factor contributing to ongoing labor market challenges. This mismatch often leads to inefficiencies in labor absorption, particularly when the number of job seekers exceeds the available employment opportunities. Conversely, imbalances may also occur when labor demand surpasses supply, creating pressure on industries and affecting productivity. According to Feist (2024), such mismatches are increasingly shaped by structural shifts, demographic changes, and geographical limitations in labor mobility, especially in post-pandemic economies. Georgetown University's Center on Education and the Workforce (2023) also highlights that misalignment between educational credentials and labor market needs contributes to underemployment and hinders smooth school-to-work transitions. Furthermore, the OECD (2023) found that skill mismatches—both over-skilling and under-qualification—are directly linked to reduced labor productivity and inefficient resource allocation across firms.

According to Farm (2020), the relationship between labor availability and employment opportunities is commonly referred to as labor demand. This demand is influenced by various economic factors, including wage rates, production volume, and capital investment, particularly in urban centers such as Denpasar. Labor demand is considered a derived demand, as it originates from consumer demand for goods and services. Angrist (2024) explains that firms determine labor utilization by evaluating the marginal product of labor (MPL), which represents the additional output generated by employing one more unit of labor while keeping capital constant. This concept remains central in labor economics, especially in competitive markets where firms aim to maximize profits by aligning the value of MPL with prevailing wage rates.

The Danish Trade Union Development Agency (2025) describes labor supply from two perspectives. From the employer's viewpoint, labor supply refers to the number of workers available at different wage levels, while from the worker's perspective, it involves individuals offering their labor to meet job criteria set by companies. Classical human resource theory defines labor supply as both the quantity and quality of individuals ready to work, influenced by factors such as population size, demographic structure, education level, productivity, and working hours. The balance between labor demand and supply determines wage levels and employment stability. Alauddin and Wahyuni (2025) note that labor absorption varies depending on education, skills, and experience, with job placement often segmented by qualifications such as formal education, specialized skills, or prior work experience. These factors influence how quickly and effectively individuals can be absorbed into employment. Mismatches between labor supply and demand can lead to underemployment, wage disparities, and inefficiencies in workforce utilization. Supporting this, Ismail et al. (2021) emphasize that misalignment between graduate competencies and labor market expectations—particularly in vocational and technical sectors—can significantly hinder employability and job performance, highlighting the need for stronger synergy between education systems and industry demands.

A critical aspect of labor market dynamics is the waiting period, which refers to the duration between the completion of formal education and the acquisition of the first job. As explained by the Danish Trade Union Development Agency (2025), this period is typically measured in months or years and is closely associated with the average duration of unemployment. Alauddin and Wahyuni (2025) argue that the waiting period tends to be longer among educated individuals due to structural mismatches between labor supply and job opportunities. These mismatches often occur when the qualifications of job seekers do not align with the demands of available positions, resulting in prolonged job searches and underemployment. Additionally, the influence of human capital theory may lead to unrealistic expectations regarding employment outcomes. To address these challenges, the Indonesian government introduced the Prakerja program, which aims to reduce the waiting period by improving job readiness and aligning skills with market needs. Evaluations of the program indicate

positive outcomes in terms of increased employment rates and reduced job search duration, particularly in urban areas.

Previously explained, one of the internal factors that can affect the waiting period is the level of education. But the fact is that now graduating at the level of an education is no longer a guarantee of easy or difficult to be able to have a job. The intense competition between each graduate is the main point of this problem, plus the development of the times which causes many things to change or shift in all aspects, so that just knowledge at the education level can no longer be a reference for the success of graduates. Eventually, this condition gradually even more mushroomed the phenomenon of educated unemployment. The term educated unemployment is defined as the population of the labor force who do not yet have a job but have completed education from the upper secondary education level—in this case, the Senior High School (SMA), Diploma, and Bachelor levels. Safitri & Afiatno (2020) explained that one of the problems that causes the workforce with a higher level of education to be unemployed for a long time is the mismatch between the skills or expertise possessed by the workforce and the needs of the labor market. Skill mismatch—especially overeducation and underskilling—has become a major barrier to employment in many advanced economies, affecting productivity and job placement outcomes.

The educated unemployment rate in Bali itself tends to increase inversely with the level of education, those who finish at a lower level of education tend to have a higher unemployment rate and vice versa those who finish at a higher level of education are quite low unemployment. This can be seen in Table 2 which presents data on the open unemployment rate according to education completed from 2020-2022 in Bali Province.

Table 2.
Open Unemployment Rate According to Graduated Education, 2020-2022 (percent) in Bali Province

Deprecated Education	2020	2021	2022
Junior High School	2,43	4,14	5,75
Senior High School	7,79	6,47	4,71
Vocational High School	10,12	8,02	3,66
Diploma I/II/III	13,15	6,91	3,91
University	5,26	4,05	3,37
Total	5,63	5,37	4,80

Source: SAKERNAS August, 2020-2022

Table 2 shows that throughout 2020 to 2022, the open unemployment rate (TPT) according to education completed in Bali Province has decreased. In 2022, the open unemployment rate according to the highest education completed in Bali Province is at 4,8 percent. Table 2 also shows the tendency that the level of education affects the number of unemployed, where the higher the level of education completed, the lower the unemployment rate and vice versa. This can be seen in the 2022 TPT at the university (undergraduate) level is in last place, which is 3,37 percent, this indicates that the job market has improved the qualifications of prospective workers by hiring more someone with a higher level of education. A person's educational background is the initial key to someone being able to enter or not as a workforce (Burger & Fourie, 2019).

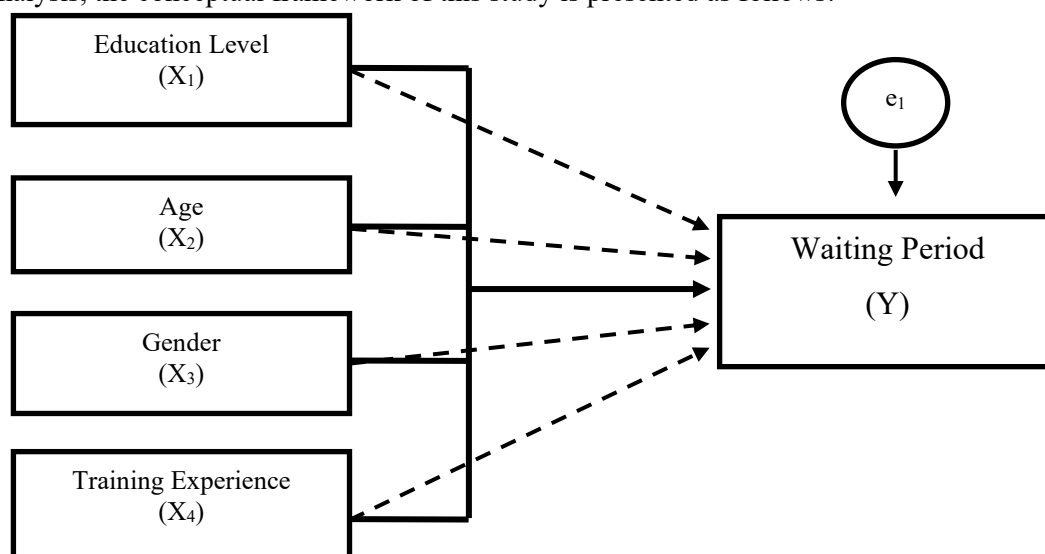
In relation to education, someone with more experience and skills will find it easier to get a job so that it can reduce the waiting period when going to find a job. In addition, experience and skills can also be a reference for how a worker can complete the work to be carried out within a predetermined

period of time. Gebisa & Ethana (2019) research found that well-educated and well-trained young people have a lower chance of being unemployed compared to those who are less trained or untrained.

In addition to education and skills, age and gender have a tendency to influence whether a person can easily get a job. Based on the results of a study conducted by Mahendra (2014), a worker who has a productive age is certain to have a higher level of productivity compared to the elderly workforce so that their physique becomes weak and limited. Based on gender, between male and female workers have different impacts or influences on increasing the workforce (Nurhadi & Widyawati, 2019).

Asgha (2016) highlights that consumer awareness and utilization of nutritional label information on food products reflect broader trends in education and information access, which can influence workforce quality in urban areas. Siswantoro (2012) discusses the growing preference and awareness of Islamic financial products in Indonesia, indicating how cultural and socio-economic dynamics intersect with labor market behavior and economic growth. Wardhana et al. (2020) emphasize that demographic changes, especially shifts in population structure and fertility rates, significantly affect economic growth and labor market outcomes in Indonesia, underscoring the need to align human capital policies with these dynamics.

This study aims to examine the key factors (namely education level, age, gender, and training experience) that influence the employment waiting period among educated workers. The focus is placed on Denpasar City, which records the highest open unemployment rate (TPT) in the region. The objective is to identify both partial and simultaneous relationships among these variables. To support this analysis, the conceptual framework of this study is presented as follows:



Source: Data Proccesed, 2023

Figure 1
Conceptual Framework

Description:

—————> : Simultaneous Influence
 - - - - -> : Partial Influence

Furthermore, this research is expected to contribute to the development of scientific knowledge and information regarding the waiting period of educated workers. It does so by integrating perspectives from human capital theory, unemployment concepts, labor characteristics, age, gender, and training experience, based on data from the National Labor Force Survey (Sakernas).

RESEARCH METHODS

The location of the study was carried out in Denpasar City with the object of research focused on the influence of education level, age, gender and training / training experience on the variable waiting period of educated workers in Denpasar City who had their first job. Furthermore, the measurement of each variable is carried out based on needs and data obtained in the field. Education level (X_1) is measured using a dummy approach with a nominal scale. Age (X_2) is measured in years using a ratio scale. Gender (X_3) is measured using a dummy approach with a nominal scale, and training experience (X_4) is also measured using a dummy approach with a nominal scale.

This study used data samples from the National Labor Force Survey (Sakernas) of Denpasar City in August 2022 which amounted to 2,220 data. The sample obtained from the August 2022 Sakernas data is categorized based on predetermined criteria according to the needs of all variables to be used. Based on the sample criteria needed to eat, the samples used in this study amounted to 895 respondents of Sakernas August 2022.

This research uses multiple linear regression analysis which is used to determine the relationship between the independent variable (X) and the dependent variable (Y). In addition, it is also to find out how much influence between independent variables and dependent variables, both simultaneously and partially. The general form of multiple linear regression equations is (Wirawan, 2002):

$$\hat{Y} = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e \dots \dots \dots (1)$$

Information:

\hat{Y} = Waiting period for graduates during job search

X_1 = Education Level

X_2 = Age

X_3 = Gender

X_4 = Training Experience

e = Confounding variable

$\beta_1, \beta_2, \beta_3, \beta_4$ = coefficients of each variable

This study also tested the deviation of classical assumptions, namely to find out whether the regression model obtained experienced deviations from classical assumptions or not. In addition to the classical assumption test, a simultaneous hypothesis test (F Test) and a partial hypothesis test (t Test) were also carried out. F Test is conducted to determine whether independent variables in the form of education level, age, gender, and training experience simultaneously have a significant influence on the dependent variable, namely the waiting period. The t test is performed to partially test whether the independent variable (X) has a partial effect on the variable (Y) assuming the other variables are constant. In hypothesis testing, the t-count value must be compared to the t-table value at a certain degree of confidence.

RESULTS AND DISCUSSION

The percentage completed in 2022 is 442 people or 49,4 percent of the sample comes from the tertiary education level and the remaining 453 people or 50,6 percent of the sample comes from the high school education level. In the age group, the largest population is in the age group of 20-24 years or 384 people or 42,9 percent, on average someone starts working in the age range of 15-24 years which is the average age of someone completing their education. For gender, it was more by 54,6 percent compared to female by 45,4 percent. In the training experience, 531 people or 59,3 percent had attended training, while 364 people or 40,7 percent had never attended training. Finally, the largest

waiting period for respondents was in the range of 1-41 months with a percentage of 83,1 percent and the waiting period during job search was in a higher month range with a percentage of the most.

Data analysis of this study using the SPSS program with results can be seen in Table 3, as follows.

Table 3.
Multiple Linear Regression Results of Denpasar City Waiting Period 2022

<i>Model</i>	<i>Unstandardized Coefficients</i>		<i>Standardized Coefficients</i>	<i>T</i>	<i>Sig.</i>
	<i>B</i>	<i>Std. Error</i>	<i>Beta</i>		
1 (Constant)	-5,316	0,425		-12,498	0,000
Education	-0,203	0,020	-0,323	-10,232	0,000
Age	5,568	0,373	0,471	14,933	0,000
Gender	-0,004	0,019	-0,006	-0,216	0,829
Training Experience	-0,059	0,019	-0,092	-3,117	0,002

Source: Processed Research Data, 2023

Based on table 3, the multiple linear regression equation, is as follows:

$$\begin{aligned}\hat{Y} &= -5,316 - 0,203X_1 + 5,568X_2 - 0,004X_3 - 0,059X_4 \\ Sb &= (0,020) \quad (0,373) \quad (0,019) \quad (0,019) \\ T &= (-10,232) \quad (14,933) \quad (-0,216) \quad (-3,117) \\ Sig. t &= (0,000) \quad (0,000) \quad (0,829) \quad (0,002) \\ R^2 &= 0,226 \\ F &= 64,911\end{aligned}$$

The simultaneous hypothesis test (F Test) obtains a conclusion, that is, because $F_{\text{counts}} > F_{\text{table}}$, $64,911 > 2,38$, with a value of sig. $0,000 < 0,05$, then H_0 is rejected and H_1 is accepted. In conclusion, the tested group had a marked (significant) difference. This result means that there is a significant influence between the factors of education level, age, gender and training experience simultaneously on the waiting period during job search for educated workers in Denpasar City. The magnitude of the coefficient of determination or R^2 is 0,226, This means that the variation in the waiting period can be significantly influenced by the variables education level, age, gender and training experience by 22,6 percent while the remaining 77,4 percent is explained by other factors.

The partial hypothesis test (t-test) on the variable level of education obtained a conclusion, that is, because $t_{\text{count}} (-10,232) < t_{\text{table}} (-1,6471)$ then H_0 is rejected and H_1 is accepted. Furthermore, based on the analysis of the effect of education level on the waiting period, a significance value of $0,000 < 0,05$ (significance value limit) was obtained. This result means that respondents with the last college education have a shorter waiting period than respondents with the last high school education in Denpasar City.

The partial hypothesis test (t-test) on the age variable obtained a conclusion, that is, because $t_{\text{count}} (14,933) > t_{\text{table}} (1,6471)$ then H_0 is rejected and H_1 is accepted. Furthermore, based on the analysis of the effect of age on the waiting period, a significance value of $0,000 < 0,05$ (significance value limit) was obtained. This result means that age has a positive and partially significant effect on the waiting period during job search for educated workers in Denpasar City.

The partial hypothesis test (t-test) on the sex variable obtained a conclusion, that is, because $t_{\text{count}} (-0,216) > t_{\text{table}} (-1,6471)$ then H_0 is accepted and H_1 is rejected. Furthermore, based on the

analysis of the influence of gender on the waiting period obtained a significance value of $0,829 > 0,05$ (the limit of significance value) indicating that the gender variable had no effect on the waiting period during job search for educated workers in Denpasar City.

The partial hypothesis test (t-test) on the variable training experience (training) obtained a conclusion, that is, because $t_{\text{count}} (-3,117) < t_{\text{table}} (-1,6471)$ then H_0 is rejected and H_1 is accepted. Furthermore, based on the analysis of the effect of training on the waiting period obtained a significance value of $0,002 < 0,05$ (significance value limit). This result means that respondents who have training experience have a shorter waiting period than respondents who do not have training experience in Denpasar City.

The results showed that respondents with the last college education have a shorter waiting period than respondents with the last high school education in Denpasar City. These results provide empirical evidence that the higher the level of education, the shorter a person's waiting period before getting a job. This is related to the increasing labor market standards for prospective workers, where the job market prioritizes someone with a higher level of education to be part of the company. The educational regression coefficient is $-0,203$ stating that every increase in education by 1 unit will cause the waiting period during job search to decrease by $0,203$ months or based on the average waiting period (29 months) is $5,9$ months. These results are also in line with Puput (2021) research which states that education has a negative and significant effect on the length of job search. That is, the higher the education, the less time to find work. In addition, Seran (2017) found that education has a negative and significant relationship with remuneration and population poverty. International studies support this, such as Toropova et al. (2021), who found that higher education and professional development significantly improve job satisfaction and retention.

The results showed that age has a positive and partially significant effect on the waiting period during job search for educated workers in Denpasar City. The age regression coefficient is $5,568$, stating that every increase in age of 1 year will cause the length of job search to increase by $5,568$ months or, based on the average waiting period (29 months), is $161,5$ months. These results are also supported by previous research conducted by Seran (2017). Unemployment has a positive relationship with economic growth with the length of looking for work. One of the company's considerations is regarding the age of jobseekers. Arrozi & Sutrisna (2018) stated that age has a positive and significant influence on the length of job search for educated workers in Denpasar City. This finding is in line with Toropova et al. (2021), who emphasized that individual characteristics such as age can influence job satisfaction and employment dynamics, particularly in relation to workplace expectations and adaptability. Additionally, Feist (2024) noted that demographic shifts, including aging workforces, contribute to labor market imbalances and may affect the speed and success of job matching processes in various economies.

The results showed that there is no significant difference in waiting periods between male and female jobseekers before they find employment. The significance level in sex is $0,333 > 0,005$. This illustrates that it is not only one gender that can have a shorter waiting period or vice versa. This can shift the paradigm that men are much better than women. It is evident from this movement that job opportunities between men and women become balanced so that the waiting period during job search between men and women is relatively the same so that there is no more influence between gender and waiting period during job search for educated workers. These results are also supported by previous research conducted by Patrick (2018), where the study stated that gender did not have a significant influence on the length of job search. In other words, a person's gender will not significantly affect the time it takes for that person to find work. In addition, Puput (2021) also stated the same thing, where gender does not have a significant effect on the length of job search. Gender is neither a barrier nor ballast in a person's waiting period before getting a job. This is consistent with findings by Barth & Masters (2024), who found that while gender stereotypes influence career preferences, they do not

necessarily translate into differences in job search duration among younger generations. Similarly, Gil (2024) emphasized that psychological resilience and academic performance differ by gender, but these differences do not always affect employment outcomes

The results showed that respondents who had training experience had a shorter waiting period than respondents who did not have training experience in Denpasar City. This provides empirical evidence that someone who has experience in training is easier to get a job so the waiting period is also shorter. The educational regression coefficient of -0,059 states that every increase in training experience by 1 unit will cause the waiting period during job search to decrease by 0,059 months or based on the average waiting period (29 months) is 1,7 months. Permana et al. (2023) emphasize that education and job training are essential components in improving labor productivity. Their research shows that training enhances workers' skills and competencies, which directly contribute to increased efficiency and output in the workplace. This aligns with the human capital theory, which posits that investments in education and training significantly influence individual performance and employability. Patzina and Somaggio (2020) support this view by demonstrating that vocational training, even when partial, positively affects employment outcomes by equipping individuals with relevant skills and improving their chances of securing a job. Furthermore, job training has been found to reduce the duration of job search, making it a strategic asset for job seekers in competitive labor markets. Similarly, Feist (2024) highlights that labor shortages in advanced economies are often linked to mismatches in skills, and targeted training programs can effectively bridge these gaps. Gebisa and Etana (2019) also found that lack of relevant training is a key determinant of graduate youth unemployment in Ethiopia, reinforcing the global relevance of training in enhancing employability.

CONCLUSIONS AND RECOMMENDATION

Based on the results of the study, education level, age, gender and training experience simultaneously have a significant effect on the waiting period during job search for educated workers in Denpasar City. Furthermore, the level of education, respondents who had a college education (S1) had a shorter waiting period than respondents who had a high school education. Besides, age partially has a positive and significant effect on the waiting period during job search for educated workers in Denpasar City. Furthermore, based on their experience in attending training, respondents who have training experience have a shorter waiting period than respondents who do not have training experience. While gender partially does not have a significant effect on the waiting period during job search for educated workers in Denpasar City. Harmony between the world of education and labor demand is important to do. Therefore, the government should carry out a link and match system between the world of education and labor demand. Educational institutions, especially upper secondary and tertiary levels, must be integrated directly with companies in accordance with their scientific fields. Educational institutions must open vacancies and opportunities as wide as possible in a field that is needed by the company so that it will minimize the number of unemployed. The existence of job training is a capital that is very helpful for jobseekers to immediately get a job. Therefore, it is hoped that the government will open more jobs devoted to educated labor. This can be done with cooperation between the government and investors to be able to open new jobs that open vacancies for educated workers.

In improving the quality of jobseekers, the government should prioritize the provision of job training for new young workers by increasing job training centers so that they get an overview of the jobs that are the focus of their fields and an overview of the labor market and information. Design and prioritize programs designed to improve the quality of human resources. This study still contains

limitations related to using secondary data derived from August 2022 Sakernas data, namely the limited variables related to the waiting period, resulting in a small coefficient of determination. This suggests that there are more important factors in influencing the waiting period. There are many factors that can affect waiting periods that have not been studied in this study such as reservation wage, job search strategies, job motivation, economic background, and ability to establish social relationships. In addition, due to the exclusion of several factors that can affect the waiting period, this study also experienced endogeneity problems which resulted in biased results in several tests conducted and the coefficients of each variable also had a fairly small number than expected. This research can be developed again by including more variables so that it can have more influence on the waiting period.

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