

Determinants of Educated Unemployment in DKI Jakarta Province

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Abstract

Educated unemployment is one of the problems in the field of employment. The educated unemployment in DKI Jakarta Province is dominated by the level of education of high school, vocational school, and college graduates. This study aims to find out what factors can affect the educated unemployment in DKI Jakarta Province from the perspective of demographics. The demographics used were gender, age, household status, marital status, work experience, and certified training. The research method used in this study is a quantitative approach for testing binary logistic regression analysis. Using data from the National Labor Force Survey from the Central Statistics Agency (CSA) for the February 2023 period in DKI Jakarta Province. The results of the study found that the variables of gender, marital status, and certified training did not have a significant effect on educated unemployment in DKI Jakarta Province. Meanwhile, the variables of age and household status have a significant and positive effect on the educated unemployment in DKI Jakarta Province. Then work experience has a negative and significant effect on educated unemployment in DKI Jakarta Province.

Keywords: Educated Unemployment, National Labor Force Survey, Binary Logistic Regression

INTRODUCTION

Unemployment is a major problem in economic development in developing countries, including Indonesia. This issue not only has an impact on economic indicators, but also raises social problems (Kolibu et al., 2019). Unemployment can reduce living standards, cause psychological pressure, and cause various negative impacts such as loss of income, health problems, and an increase in crime rates (Kassem et al., 2019).

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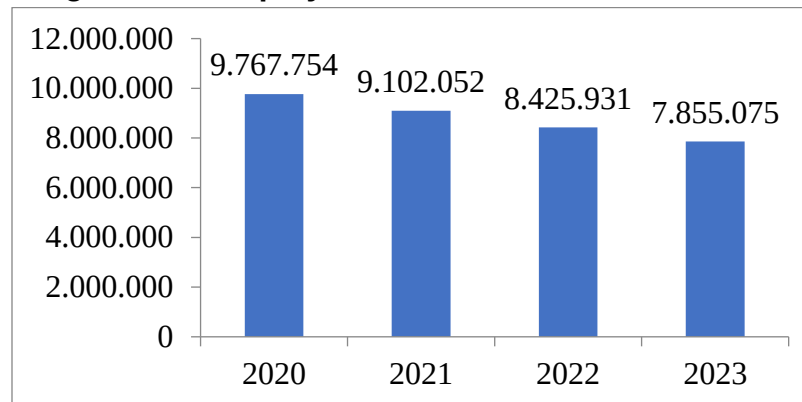


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Therefore, unemployment needs to be handled seriously for the welfare of the community (Ilhami & Yeniwati, 2022).

In 2023, CSA recorded the number of unemployed in Indonesia at 7.86 million people, with an open unemployment rate of 5.45 percent, a decrease of 0.38 points from the previous year. This decline occurred despite the number of job seekers continuing to increase, while the available jobs were not comparable, indicating that economic growth has not been able to create enough new job opportunities. The unemployment rate also varies between provinces, so the handling needs to be adjusted to the conditions of each region to prevent future spikes in unemployment (CSA, 2023).

Figure 1 Unemployment in Indonesia in 2020-2023



Source: CSA Indonesia, 2023

The number of unemployed in Indonesia has decreased from 2020 to 2023. In 2020, the unemployment rate reached 9.77 million people due to the impact of the pandemic. However, as conditions improve, the number of unemployed decreased to 9.10 million people in 2021, 8.43 million people in 2022, and 7.86 million people in 2023. This decline was caused by the stabilization of the pandemic situation and the increasing availability of jobs.

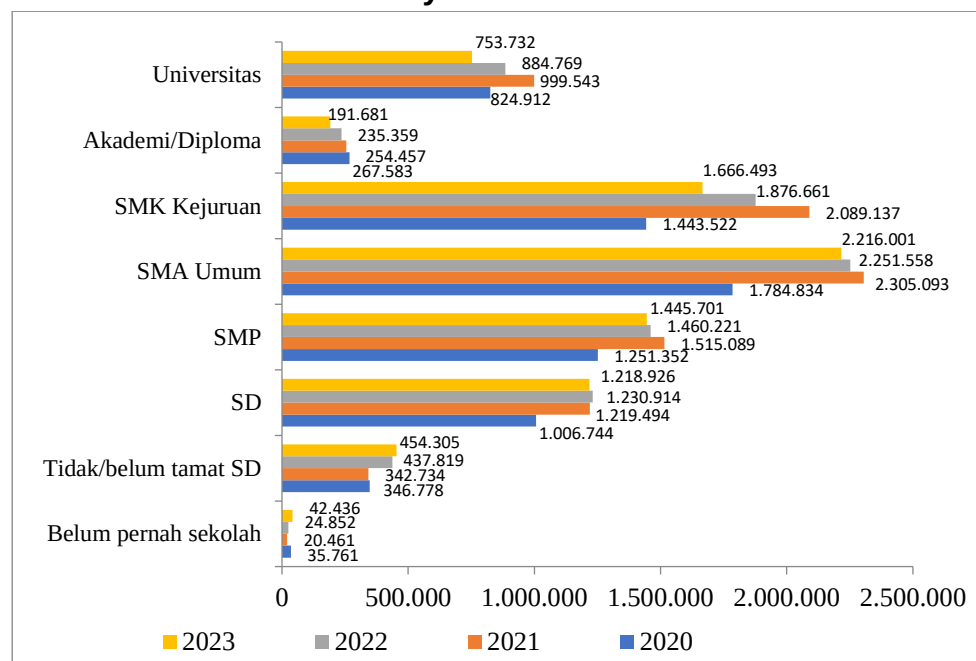
Educated unemployed are individuals who have completed their education up to the high school level but are not yet employed (Setyanti & Finuliyah, 2022). This type of unemployment arises due to the mismatch between the education system and the needs of the job market, as well as the difference between the interests of job seekers and the qualifications needed by companies. As a result, there is a waste of educational resources and social problems arise. Therefore, efforts are needed to reduce educated



unemployment through adjustments to education and the needs of the world of work (Fatimah et al., 2023).

Educated unemployment is one of the important issues in employment. CSA data shows that in February 2023, the number of educated unemployed in Indonesia reached 7,989,275 people, a decrease compared to February 2022 which was 8,402,153 people. This data includes unemployment from non-school to tertiary education levels, and describes the unemployment trend by level of education during the 2020–2023 period.

Figure 2 Unemployment in Indonesia According to Highest Education Completed in February 2020-2023



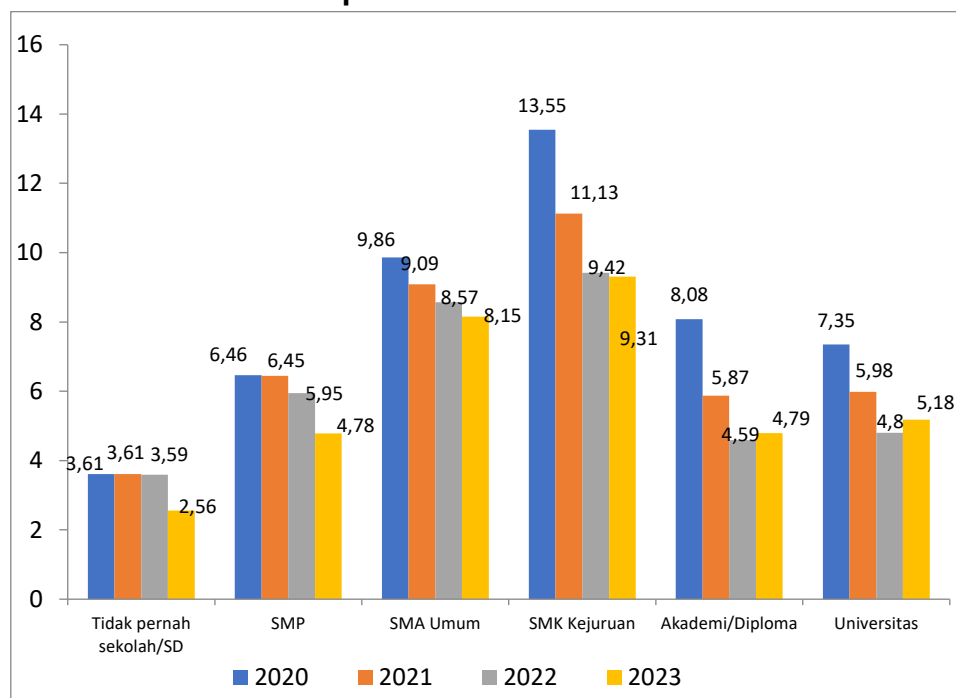
Source: CSA DKI Jakarta Province, 2023 (data processed)

Unemployment data in Indonesia based on education level during February 2020–2023 shows a fluctuating trend. The highest unemployment rate consistently comes from General High School graduates, which in 2023 will reach 2,216,001 people, followed by 1,666,493 vocational school graduates. Meanwhile, the lowest unemployment rate was recorded in the group that had never gone to school, which was 42,436 people in 2023.

The high level of unemployed educated people causes a negative perception of the education system, because it is considered incapable of equipping graduates with

skills that meet the needs of the job market. Based on data from 2020–2023, the open unemployment rate by education level shows a downward trend, although it is different from the number of unemployment in absolute terms. In 2023, the highest unemployment rate was recorded in vocational school graduates at 9.31 percent, followed by public high school graduates at 8.15 percent.

Figure 3 Unemployment Rate in Indonesia According to Highest Education Completed in 2020-2023



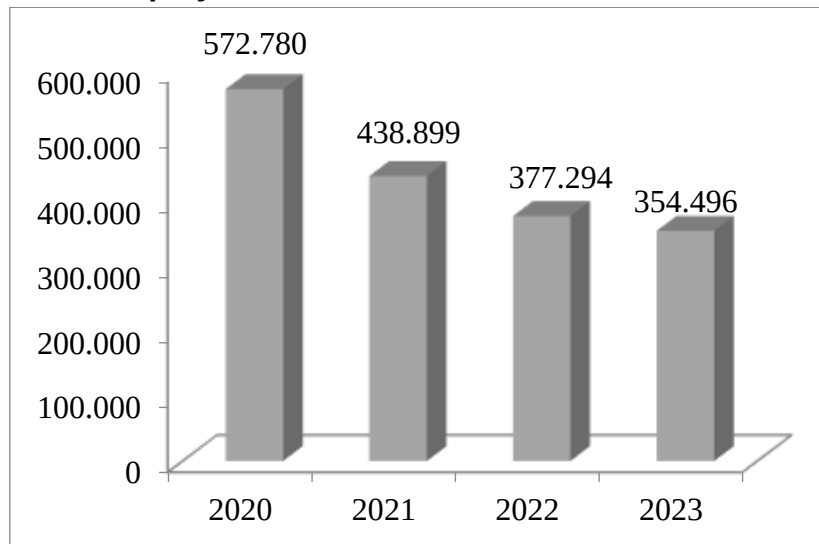
Source: CSA DKI Jakarta Province, 2023 (data processed)

Educated unemployment is closely related to education, which is considered a future investment to create job opportunities. Education plays an important role in forming a qualified and skilled workforce. According to Human Capital theory, education increases productivity and income, so that it can reduce the unemployment rate through increasing the ability and skills of the workforce (Adriani et al., 2019).

DKI Jakarta Province is one of the regions in Indonesia that faces a fairly high unemployment problem nationally. In 2023, the number of unemployed in this province was recorded at 354,496 people, showing a decrease compared to the previous year

after the pandemic. This data reflects the unemployment trend in DKI Jakarta during the 2020–2023 period.

Picture 1 Unemployment in DKI Jakarta Province in 2020-2023

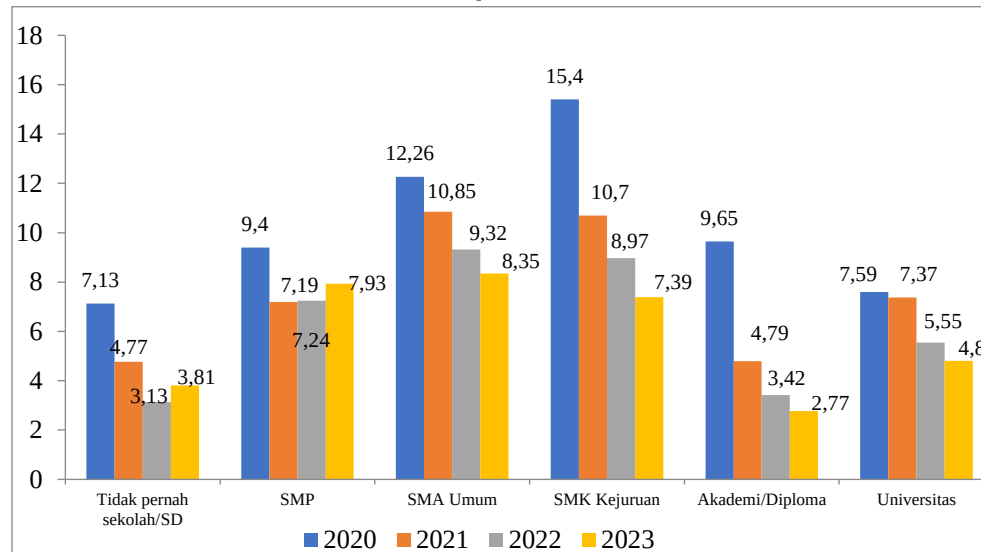


Source: CSA DKI Jakarta Province, 2023 (data processed)

The number of unemployed in DKI Jakarta Province has decreased from 2020 to 2023. In 2020, the unemployment rate reached 572,780 people due to the impact of the pandemic. However, along with the recovery process, this number decreased to 436,899 people in 2021, 377,294 people in 2022, and 354,496 people in 2023. This decline shows an improvement in employment conditions after the pandemic.

Educated unemployment in DKI Jakarta Province is still a problem, especially among high school to university graduates. The quality of the workforce is an important factor in determining whether a person will be unemployed or not. Many companies set strict requirements, such as work experience or education that is appropriate to the company's field, which results in many educated workers not getting job opportunities. This contributes to the high rate of educated unemployment in Jakarta.

Figure 5 Unemployment Rate in DKI Jakarta Province According to Highest Education Completed in 2020-2023



Source: CSA DKI Jakarta Province, 2023 (data processed)

The unemployment rate based on education level in DKI Jakarta Province decreased between 2020–2023. The highest educated unemployment is found among high school graduates, with a figure of 8.35 percent in 2023, although it decreased compared to 2022 (9.32 percent). The unemployment rate of university graduates is higher than that of diploma graduates, with a figure of 4.80 percent for universities and 2.77 percent for diplomas in 2023. Unemployment among high school/vocational school graduates is caused by a mismatch between jobs and majors, while university graduates face a high number of undergraduates every year and limited employment, leading to an increase in educated unemployment.

Although in theory, an increase in education levels is expected to lower the unemployment rate by increasing an individual's expectation of employment, the reality is that higher education levels do not necessarily reduce educated unemployment. Rahmawati (2004) states that highly educated individuals tend to prefer stable and secure jobs, rather than taking risks with less uncertain jobs. As a result, many educated individuals choose to remain unemployed, rather than accept a job that does not match their expectations or desires.

Research by Prakoso (2020) reveals that with increasing levels of education, individuals' expectations of jobs that match their skills also increase, causing them to prefer suitable positions. This results in limited opportunities in the field of interest, so many educated individuals prefer to be unemployed due to the prestige factor. Similar findings were also found by Ramiayu (2016) in East Java Province, which showed that graduates with higher education often experience greater unemployment than those with lower education. This is due to selectivity in choosing jobs and the tendency to choose to work in the formal sector rather than the informal sector.

The high level of unemployed educated people despite having studied higher education is caused by the education system that focuses more on college preparation than creating job opportunities. High school graduates are more directed to continue to college, while vocational schools are more focused on job skills. University graduates are also better prepared to graduate quickly than create jobs. Adriani et al. (2019) stated that jobs that require special skills can help reduce educated unemployment. Based on this background, it is necessary to study the influence of demographic factors on educated unemployment in the region.

LITERATURE REVIEW

Employment

The workforce according to the Central Statistics Agency is all people aged 15 years and above who have the ability to be involved in the production of goods and services in the economic sector.

Unemployment

Malthus's Population Theory: This theory links population growth to limited resources, especially food. When population growth exceeds resource capacity, there will be fierce competition for jobs, leading to unemployment due to limited employment opportunities (Desmawan et al., 2021).

Educated Unemployment

According to the Central Bureau of Statistics, educated unemployment refers to individuals who are graduates of high school (high school) and university. Educated unemployment falls into the category of structural unemployment, which is caused by a mismatch between the structure of labor demand and the type of work, skills, geographical location, as well as industry (Harahap & Bachtiar, 2017).

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Human Capital Theory

The theory put forward by Theodore Schultz (1960) and Gary Becker (1993) explains the concept of human capital, which refers to individual abilities acquired from education and training. Education, both formal (schools and colleges) and informal (training and experience), serves to improve skills and knowledge, which in turn can improve economic well-being. Becker also revealed that human capital affects future resources and income, taking into account demographic aspects. According to Ehrenberg & Smith (2003), investment in human capital entails upfront costs, such as direct costs, lost costs, and other fiscal costs, which are expected to improve skills and knowledge, improve job opportunities, and reduce unemployment

Gender

The concept of gender is defined based on existing social norms, such as women are synonymous with softness and men with strength (Ariyanti et al., 2020). One of the fundamental categories of daily life and social life is gender. When meeting new people, it will definitely categorize them as male and female. Gender categorization usually occurs spontaneously and without consideration (Sa'adah et al., 2021).

Age

Age is the number of years a person has lived and is measured from the time of birth to their birthday. Older people will be more trusted by society than less mature people (Lasut et al., 2017). With regard to the age aspect, younger workers tend to be more productive and have good physical condition while older workers are more educated but not productive (Adyaksa, 2020).

Household Status

Households have their own status such as the relationship of each member with the head of household consisting of the head of household, wife/husband, children, sons-in-law, grandchildren, parents, other related families, domestic helpers, and others.

Marital Status

Marriage shows when the future husband and wife are officially married in front of religious leaders. The Central Statistics Agency classifies marital status in the categories of unmarried, married, divorced alive, and divorced dead. However, it can be simplified to those who have been married and have never been married (Adyaksa, 2020).

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Work Experience

Work experience is the duration sacrificed by a person to understand and successfully complete the responsibilities assigned to him (Kurniawan & Susanto, 2021). There are indicators that determine work experience, namely the duration of work that has been taken, the quality of knowledge and expertise possessed, and the ability to carry out work (Ilham, 2022).

Certified Training

Ehrenberg & Smith (2017) argue that certified training is a form of investment in human capital development. The education and training received, along with learning experience provide skills and insights that can be used in the job market, so that a person with adequate skills and knowledge will be better prepared for the job market.

RESEARCH METHODS

Research Location

The object of this research focuses on DKI Jakarta Province. With a research time period that only covers one year, namely February 2023. The reason for choosing DKI Jakarta Province as the object of research is that there are still many educated unemployed in DKI Jakarta Province.

Data and data sources

The study also uses secondary data collected from existing sources, such as publications and the website of the Central Statistics Agency. The types of data used include information on gender, age, household status, marital status, work experience, and certified training. Data for this study came from the National Labor Force Survey (NATIONAL LABOR FORCE SURVEY) which was carried out in DKI Jakarta Province in February 2023 and data from publications and websites from the Central Statistics Agency of DKI Jakarta Province.

Data Analysis

The analysis in this study uses dummy variables, which are categorical and are suspected to have an influence on continuous variables. The dummy variable has only two values, namely 1 and 0 (Sarwono, 2018). Data processing is carried out using SPSS (Statistical Package for Social Science) software to obtain in-depth and valid analysis results of the variables studied. Binary logistic regression is a type of regression used to

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predict the probability of the occurrence of bound variables based on independent variables. In logistic regression, the free variable does not require a normal distribution, so normality, heteroscedasticity, and classical assumptions tests are not required (Ghozali, 2018). Binary logistic regression is used for bound variables that are dichotomous, binary, and non-metric in nature. This model predicts the probability of events occurring in dichotomous bound variables, with variable values being at 0 or 1 (Sarwono, 2018).

$$Y = \alpha + \beta_{1JK1} + \beta_{2U2} + \beta_{3SRT3} + \beta_{4SP4} + \beta_{5PK5} + \beta_{6PB6} + e$$

Source: Author, 2024

Information:

Y = Educated Unemployment

α = Constant

$\beta_1 - 6$ = Coefficient β

JK1 = Gender

U2 = Age

SRT3 = Household Status

SP4 = Marital Status

PK5 = Work Experience

PB6 = Certified Training

e = error

RESULTS

Binary Logistics Regression Analysis Method

Model Feasibility Test

The model feasibility test uses Hosmer and Lemeshow to test a null hypothesis that assumes no significant difference between the model's predictive value and the observed value of the data

Table 1 Hosmer and Lemeshow Test Results

Chi-square	DF	Sig.
4.556	8	0.804

Source : Output Results From SPSS Version 26



Based on table 1, the results of regression analysis with the Hosmer and Lemeshow Goodness of Fit Test showed a Chi-square value of 4.556 with a significance of 0.804. Since the probability value (0.804) is greater than 0.05, it can be concluded that the model does not differ significantly from the data. This means that the regression model in this study can well predict the observation value.

Test the Whole Model

The overall testing of the model is carried out using statistics based on the Likelihood function, where Likelihood (L) describes the probability that the hypothesized model can present the existing data. The null and alternative hypothesis test process involves the transformation of L to -2 log likelihood.

Table 2 Overall Model Test Results

-2Log initial likelihood (block number = 0)	450.898
-2Log final likelihood (block number = 1)	415.590

Source: Data Processed (Output Eviews, 2024).

B based on table 2, the value of -2Log likelihood at the initial stage (block number = 0) before the free variable is entered is 450.898. Once the variable was entered, the value of -2Log likelihood in the final stage (block number = 1) dropped to 415,590, with a decrease difference of 35,308. This decrease indicates that the hypothesized regression model is in accordance with the data used, as well as indicating that the regression model is effective or H_0 is accepted.

Coefficient of Determination

The coefficient of determination can be analyzed via the Nagelkerke R Square. Nagelkerke R Square, which is a change from the cox and snell coefficients by taking into account the value of zero, can explain the ability of a very limited bound variable. While the value of the Nagelkerke R Square which almost reaches one indicates that the free variable provides complete information to predict the bound variable. Based on this explanation, the results of the determination coefficient carried out with SPSS 26 are obtained, as follows

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Table 3 Summary Model Test Results

	Value	Df	Probability
Likelihood ratio	2,088815	38	1,0000

Source: Data Processed (Output Eviews, 2024).

Based on table 3 above, the value of the determination coefficient seen from Nagelkerke R Square is 0.140. This explains that the ability of variables independent of gender, age, household status, marital status, work experience, and certified training in explaining the bound variable, namely educated unemployment is only 14%. The remaining 86% were described by factors outside the research model.

Binary Logistic Regression Model

The regression model in the study used binary logistics regression to assess the influence of gender, age, household status, marital status, work experience, and certified training on educated unemployment in DKI Jakarta Province for the February 2023 period.

$$Y = -2.230 + 0.020 \text{ Gender} + 0.034 \text{ Age} + 1.283 \text{ Household Status} - 0.531 \text{ Marital Status} - 0.598 \text{ Work Experience} + 0.106 \text{ Certified Training}$$

1. Constant A constant value of -2.230 indicates that without taking into account the influence of other independent variables, the educated unemployed would have a constant value of -2.230.
2. A positive coefficient value of 0.020 indicates that gender (e.g., male or female) can increase educated unemployment. Each unit increase in the sex variable will increase educated unemployment by 0.020, assuming the other variables remain constant.
3. Age Variable A positive coefficient of 0.034 indicates that an increase in age will increase educated unemployment. Each addition of a unit to the age will contribute to an increase in educated unemployment by 0.034.
4. Household Status Variable With a positive coefficient of 1.283, each unit increase in household status will increase educated unemployment by 1.283, assuming other variables are constant.

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5. Marriage Status Variable A negative coefficient of -0.531 indicates that marital status can reduce educated unemployment. Each change in the unit in marital status will reduce educated unemployment by -0.531.
6. Work Experience Variable A negative coefficient of -0.598 indicates that work experience can reduce educated unemployment. Each unit increase in work experience will reduce educated unemployment by -0.598.
7. With a positive coefficient of 0.106, each unit increase in certified training will increase educated unemployment by 0.106, assuming the other variables remain constant.

Test F

The F test can be explained by the omnibus test of model coefficients. This study will test whether the free variable simultaneously affects the bound variable. The level of significance in decision-making is 5%. For the F test.

Table 4 Omnibus Test Results Of Model Coefficients (F Test)

	Chi-square	Df	Sig.
Step	37.255	6	.000
Block	37.255	6	.000
Type	37.255	6	.000

Source: Processed Data (Output Eviews, 2024)

According to the results shown in table 4.25, the f_{cal} value of $f_{cal} > f_{table}$ (37,255 > 2,125) and the significance level were obtained ($0.000 < 0.05$). So, simultaneously, the independent variables, namely gender, age, household status, marital status, work experience, and certified training, have an effect on the bound variable, namely educated unemployment.

T test

The partial test t can be explained by the wald test. The wald test is how far the influence of a partially independent variable can explain the bound variable. To find out the value of the wald test using a significant level of 5% or 0.05. H



Table 5 Wald Test Results (t)

	B	S.E.	Wald	Df	Sig.
Gender	0.020	0.361	0.003	1	0.955
Age	0.034	0.013	6.480	1	0.011*
Household Status	1.283	0.464	7.662	1	0.006*
Marital Status	-0.531	0.415	1.640	1	0.200
Work Experience	-0.598	0.255	5.528	1	0.019*
Certified Training	0.106	0.244	0.190	1	0.663
Constant	-2.230	0.554	16.189	1	0.000*

Source: Processed Data (Output Eviews, 2024)

Based on the results of the analysis submitted, the following is a further interpretation:

Gender Variables:

The t-calculated value (0.003) is smaller than the t-table (1.649), and the probability value (0.955) is greater than 0.05. Gender variables did not have a significant effect on educated unemployment. This means that gender does not affect a person's chances of becoming an educated unemployed.

Variable Age:

The t-calculated value (6.480) is greater than the t-table (1.649), and the probability value (0.013) is smaller than 0.05. Age has a positive effect on educated unemployment. The older the age, the more likely a person is to become an educated unemployed.

Household Status Variables:

The t-calculated value (7.662) is greater than the t-table (1.649), and the probability value (0.006) is smaller than 0.05. Household status has a positive effect on educated unemployment. A person who is not the head of household is more at risk of becoming an educated unemployed.

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Marital Status Variables:

The t-calculated value (1.640) is smaller than the t-table (1.649), and the probability value (0.200) is greater than 0.05. Marital status has no significant effect on educated unemployment. This means that marital status does not affect a person's chances of becoming an educated unemployed.

Work Experience Variables:

The t-calculated value (5.528) is greater than the t-table (1.649), and the probability value (0.019) is smaller than 0.05. Work experience has a negative effect on educated unemployment. A person with work experience is less likely to be an educated unemployed.

Certified Training Variables:

The value of t-count (0.190) is smaller than the t-table (1.649), and the probability value (0.663) is greater than 0.05. Certified training has no significant effect on educated unemployment. This means that having certified training does not guarantee reducing educated unemployment.

DISCUSSION

Gender Analysis on Educated Unemployment in DKI Jakarta Province

The results of binary logistics regression on the gender variable had a significant value of $0.955 > 0.05$. Thus, gender does not have a significant influence on educated unemployment in DKI Jakarta Province. The research showed results that were not in accordance with the findings obtained by Adyaksa (2020) which stated that gender has a positive and significant influence. Gender has no effect on the results of observations in 2023 on the educated unemployed in DKI Jakarta Province. This is because DKI Jakarta Province is an economic center where there are changes in the world of work for the role of women and opportunities are increasingly open due to gender equality. Moreover, many women have established new businesses or companies and are dominated by women in them.

Age Analysis of Educated Unemployed in DKI Jakarta Province

Based on the results of the binary logistics regression test on the age variable, it has a significant value of $0.011 < 0.05$. It can be said that age has a positive and significant influence, so that increasing age can increase the probability of a person

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becoming an educated unemployed person in DKI Jakarta Province. This study shows that in accordance with the results obtained by Swarsih et al (2020), Adyaksa (2020), Setyanti & Finuliyah (2022) it results that the older the age, the greater the effect on educated unemployment, because the level of productivity carried out by the elderly is not in good physical condition compared to young people. In fierce job competition, employers will select and one of them is related to age.

Analysis of Household Status on Educated Unemployed in DKI Jakarta Province

Based on the results of the binary logistics regression test on the household status variable, it has a significant value of $0.006 < 0.05$. It can be stated that household status has a positive and significant influence. A person who is not the head of household has a 128.3% higher probability of being unemployed than someone who is the head of an educated unemployed household in DKI Jakarta Province. The results of this research test are in accordance with the research of Makung et al (2021), Alharis & Yuniasih (2022) which results in a person who is not the head of household has an effect on educated unemployment compared to someone with a head of household. The reason is because the head of the household is trying to get a job to provide for his family, while for someone who is not the head of the household, he can still depend on the head of the household to meet the needs of life.

Analysis of Marital Status on Educated Unemployed in DKI Jakarta Province

The results of binary logistics regression on the marital status variable had a significant value of $0.200 > 0.05$. It can be stated that marital status does not have a significant influence on educated unemployment in DKI Jakarta Province. This result is different from the findings obtained by Adyaksa (2020) who argue that unmarried people have a tendency to be unemployed and educated compared to those who have been married. This is because a married person has dependents on his family, while for the unmarried, he still does not have the burden of providing for his family members.

Analysis of Work Experience on the Educated Unemployed in DKI Jakarta Province

The results of the binary logistics regression on the work experience variable had a significant value of $0.019 < 0.05$. It can be said that work experience has a negative and significant influence. A person who has work experience has a smaller probability of being unemployed by 59.8% than someone who does not have work experience in the educated unemployed in DKI Jakarta Province. The findings of this researcher are in accordance

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with the research of Guritno & Muljaningsih (2024) that a person who has work experience has a lower probability of becoming an educated unemployed person than someone who has no work experience. There are still many high school/vocational school graduates or college graduates without work experience, so companies will choose workers who are in accordance with work experience and those who do not have work experience will become educated unemployed.

Analysis of Certified Training for the Educated Unemployed in DKI Jakarta Province

The results of the binary logistics regression on the certified training variable had a significant value of $0.663 > 0.05$. It can be stated that certified training does not have a significant impact. These results are not in line with the research of Alharis & Yuniasih (2022) explaining that certified training for those who have certified training can affect the unemployed of the educated. This is due to the fact that certified training programs have not been effective in encouraging someone to apply for a job or start a business. In addition, the mismatch between the skills sought and those available thus causes problems and affects the unemployed educated.

CONCLUSION

Gender variables have no effect on educated unemployment in DKI Jakarta Province. Then, the older you get, the greater the probability of becoming an educated unemployed person in DKI Jakarta Province. A person who is not the head of household has the probability of becoming an educated unemployed person compared to the head of household in DKI Jakarta Province. The variable of marital status has no effect on educated unemployment in DKI Jakarta Province. There is no work experience that has the probability of becoming an educated unemployed compared to having work experience in DKI Jakarta Province. The variable of Certified training has no effect on educated unemployment in DKI Jakarta Province.

Suggestion

In this study, it is necessary for the community to develop skills by actively participating in internship programs or relevant work practices to provide hands-on work experience and increase opportunities in getting a job. For the government, it is necessary to develop training programs that focus on the development of specific competencies and skills, as well as ensure that the training certificates provided are recognized and

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accepted by the industry, so that later they can be used when applying for jobs. For academics, it can take with the same theme, namely educated unemployment in DKI Jakarta Province or different regions and use other variables besides demographic factors, and use different research periods to obtain renewable research results.

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