



Individual and Province-level Determinants of Unemployed NEET as Young People’s Productivity Indicator in Indonesia during 2020: A Multilevel Analysis Approach

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Abstract. Nowadays, employment has become one of the focus of attention for developing countries, including Indonesia. This is one of the urgencies that must be addressed considering that the Indonesian population is entering the demographic dividend period. Success in achieving the demographic dividend is very dependent on the employment conditions of young people in realizing a low level of dependence. However, obstacles in terms of education and employment are still experienced by youth which can be seen from the percentage of NEET from Year-on-Year (YoY), especially in 2020 it is exacerbated by Covid-19 pandemic. Based on these problems, it is necessary to research NEET in Indonesia in 2020. This study uses 2020 National Labor Force Survey (Sakernas) data which is analyzed by using multilevel binary logistic regression analysis. The unemployed status of young NEETs is influenced by gender, age, marital status, highest education completed, disability status, classification of the area of residence, and recent migrant status. There is a multilevel effect in the NEET assessment of young people as evidenced by the influence of Gross Domestic Product (GDP) and Human Development Index (HDI). The research results are expected to be used as a reference in making policies to optimizing the mismatch program on the pre-employment card to bridge the young age of job seekers with available job opportunities and based on the province-level variable, the province government are expected to maximize the province-level variables that affect the tendency of NEETs to remain active in the labor market. that are targeted towards the NEET problem in Indonesia.

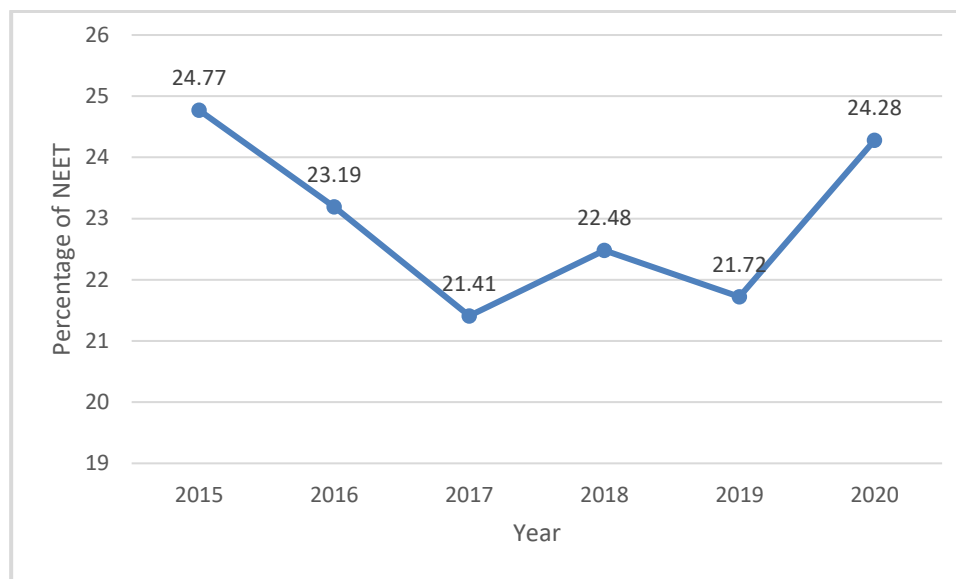
1. Introduction

Employment is one of the complex problems that become the focus of attention, especially for developing countries, including Indonesia. According to Law No.13/2004, employment is matters relating to labor before, during, and after the work period. Based on this definition, Indonesia is still facing various labor problems, including unemployment, exploitation of child labor, inadequate wages, low quality of labor, labor productivity and others (Danish Trade Union Development Agency, 2020). On the other hand, Indonesia has been entering a phase that is called the "demographic dividend" (or "demographic bonus ") from 2030 to 2040 (Indonesian Ministry of National Development Planning, 2017). According to Noor (2015), the demographic dividend would open a “window of opportunity” due to the population’s changing age structure, which could be a catalyst to boost economic growth and



enhance social welfare. That is because the productive population (age range 15-64 years) becomes larger than the unproductive population in its population evolution. The Ministry of Manpower of the Republic of Indonesia stated that this demographic dividend provides an opportunity to availability ideal conditions or sizes in the ratio of the productive population to the unproductive population (Indonesian Ministry of Manpower, 2019). In this demographic dividend condition, things that need to be considered are improving the quality of the workforce and the availability of job opportunities for the youth.

According to Gribble and Bremner (2012), the demographic dividend can be achieved through three possible conditions: investment in health programs for mothers and children, education and skills of children and youth, and promoting good governance. Based on this statement, it can be said that success in achieving the demographic dividend is highly dependent on the conditions of youth employment in realizing a low level of dependency. On the other hand, if the young population is incompetent, facing difficulties in finding jobs that match their skills, difficulties in accessing employment information, and so on, the demographic dividend has the potential to be disastrous. Departing from the problems faced by the youth, the Not in Employment, Education, or Training (NEET) indicator was developed by the International Labor Organization (ILO) and the United Nations (UN) to identify the vulnerability of young people to unemployment, school dropout, and hopelessness in the labor market (Wickremeratne and Danusinghe, 2018). According to the European Commission (2011), NEET is a term that refers to a phenomenon when a person is not working, not in education, and not in training. Based on data from BPS-Statistics Indonesia, the proportion of NEET in Indonesia from 2015-2020 tends to fluctuate (BPS-Statistics Indonesia, 2020). From 2015 to 2017, the percentage of NEET has decreased but increased again in 2018. In 2019, NEET decreased to increase again in 2020, as shown in Figure 1.



Source: BPS-Statistics Indonesia (2020)

Figure 1. Indonesian youth Not in Employment, Education, or Training (NEET)

Based on Figure 1, it can be seen that although in 2017 and 2019, the NEET percentage decreased, the value of the NEET percentage become 21.41 percent in 2017 and then increasing again in the following year. This shows that efforts are needed to minimize unproductive young people to maximize the potential of existing youth so that they can realize development targets through the demographic dividend. On the other hand, the increase in NEET percentage in 2020 indicated some obstacles in realizing these goals since the spread of the Covid-19 pandemic in recent months.

Seeing these problems, the government has made various efforts to minimize NEET in Indonesia, one of which is fully committed to implementing the Sustainable Development Goals (SDGs), guidelines for developing countries in the world. Minimizing NEET is included in the eighth goal of the SDGs, promote sustained, inclusive and sustainable economic growth, full and productive employment



and decent work for all (Indonesian Ministry of National Development Planning, 2020). The sixth target of this goal also emphasizes NEET, which is expected by 2020 to substantially reduce the proportion of youth not in employment, education or training. However, efforts to deal with this problem have not shown maximum results, as seen from the percentage of NEET in Indonesia from Year-on-Year (YoY). In addition, according to ILO-OECD (2020) as the pandemic is causing massive damage to the economy, the situation for young workers in this vulnerable sector is even more worrisome. The reduction of economic and social activities to inhibit the spread of COVID-19 in Indonesia is causing various economic sectors to contract. The result is that a number of workers are furloughed, while some others are even laid off (Rahman, Kusuma, and Afyanto, 2020). This can be one of the reasons for the changes of young people's labor condition such as the increasing of NEET percentage compared to previous years. As an effort to support the formulation of employment policies which suit the characteristics of young people who classified as NEET impacted by the crisis, it is necessary to formulate policies that are right on target by first knowing the current overall picture of NEET.

According to Centeno and Fernandes (2004), it is essential to distinguish NEET between those who are looking for work (the unemployed) and those not looking (the inactive) to find out the proper treatment for the problems experienced. Moreover, these categories can be used to see young people's productivity during non-employment periods and assess the rate of transition to work. This statement is following the categorization of NEET by Eurofound (2012), where NEET can be divided into two subcategories based on status in the labor market, namely young people who are unemployed (unemployed NEET) and young people who are not actively looking for work (inactive NEET). The difference between the two categories based on the desire/effort to seek or accept a job offer can be used to see the productivity of young people in the labor market.

Based on these problems, it is necessary to research NEET in Indonesia in 2020, considering the previous efforts that have not been maximized, which is made worse by the Covid-19 pandemic. According to Hox, Moerbeek, and Schoot (2018), in social research, individuals can interact with the social context in which the individual comes from. This shows that individuals can be influenced by the context or group to which the individual belongs. Conversely, a group is also influenced by the individuals who make up the group. Based on this statement, individual characteristics such as the status of young NEETs maybe also influenced by the levels above them, such as households, districts, or provinces, so this study considers the influence of the province-level, which may affect the status of young NEETs. On the other hand, due to the limited data at the district-level when this study was conducted, province-level as a higher level of the group was chosen as the second level in the analysis.

Based on the statements before, this study conducted a multilevel analysis where some variables hypothesized to affect the young NEET to become unemployed NEET. Therefore, the objectives of this study are to know the descriptive of NEET in Indonesia in 2020 and to analyze individual and province-level variables that affect unemployed NEET status at a young age and the magnitude of the trend of the variables that influence it in 2020.

2. Methodology

2.1. Study area and data sources

The data of individual variables were retrieved from the National Labor Force Survey (Sakernas) conducted in August 2020 meanwhile the province-level data obtained from website of BPS-Statistics Indonesia. This survey was conducted in the entire territory of Indonesia. The unit of analysis in this study is the young people -age 15 to 24 years- in Indonesia who are not actively working, do not continue their education, and are not currently attending training (NEET).

2.2. Study variables

In this study, the dependent variable was the young people categorized as NEET's status in the labor market. NEET's status in the labor market was a dichotomy variable since it consists of two subcategories, namely unemployed NEET and inactive NEET. All the independent variables were classified into individual-level and province-level variables. Individual-level variables include gender,



age, marital status, highest education completed, disability status, classification of the area of residence, and recent migrant status. Meanwhile, the province-level variables consist of the province's Gross Regional Domestic Product (Produk Domestik Regional Bruto/GDRP) at constant prices to 2010 as a baseline, provincial minimum wage (Upah Minimum Provinsi/UMP), and the Human Development Index (HDI) of each province in Indonesia. The detail of variables used in this research can be seen in Table 1.

Table 1. Variables used in this research

Variable	Type of Data	Category
	Dependent Variable	
Status of NEET in the labor market	Categorical	1: <i>Unemployed</i> NEET 0: <i>Inactive</i> NEET
	Independent Variable	
1. Individual Variable		
Gender	Categorical	1: Male (reference) 0: Female
Age	Numerical	-
Marital status	Categorical	1: Never married (reference) 0: Married
Educational level	Categorical	1: Junio high school or below (reference) 0: Senior high school or above
Disability status	Categorical	1: Disabled (reference) 0: Non-disabled
Residence	Categorical	1: Rural (reference) 0: Urban
Recent migrant status	Categorical	1: Migrant recent (reference) 0: Non-migrant recent
2. Province-level Variable		
GDRP	Numerical	-
The province minimum wage (UMP)	Numerical	-
HDI	Numerical	-

2.3. Descriptive statistics

In the descriptive statistics, tables and graphs were provided to describe an overview of young NEETs in Indonesia and an overview of young NEETs divided by subcategories and individual and province-level variables that hypothesized affect young people NEETs to become unemployed NEET.

2.4. Multilevel binary logistic regression analysis

Multilevel binary logistic regression analysis was used to analyze the influence and tendency of the independent variable on the dependent variable. In this study, a multilevel model with a random intercept is used to determine the effect of variation at province-level on the dependent variable. This model also assumes that the effect of independent variable has the same effect on the dependent variable for each province. The following is the general form of a two-level binary logistic regression model with a random intercept (Hox, Moerbeek, and Schoot, 2018).

$$\ln\left(\frac{\pi_{ij}}{1 - \pi_{ij}}\right) = \gamma_{00} + \sum_{p=1}^P \gamma_{p0} X_{pij} + \sum_{q=1}^Q \gamma_{0q} Z_{qj} + u_{0j} + \varepsilon_{ij} \quad (1)$$

where:



- $i = 1, 2, 3, \dots, n_j$ is the number of observation units at level 1 in group j
- $j = 1, 2, \dots, J$ where J is the number of groups at level 2
- $p = 1, 2, \dots, P$ where P is the number of explanatory variables at level 1
- $q = 1, 2, \dots, Q$ where Q is the number of explanatory variables at level 2
- γ_{00} = fixed intercept
- γ_{p0} = fixed effect for the explanatory variable p at level 1
- γ_{0q} = fixed effect for the explanatory variable q at level 2
- X_{pij} = explanatory variable p for individu i in group j at level 1
- Z_{qj} = explanatory variable q in group j at level 2
- u_{0j} = random effect for group j at level 2
- e_{ij} = error for individu i at level 1 in group j

The steps in multilevel binary logistic regression analysis are as follows:

1. Random effect significance test (likelihood ratio (LR) test)
 This test conducted to determine which model is more suitable to use, the model without random effects or the model with random effects. Deviance is the statistic test used which also called as likelihood ratio. The hypothesis of this test can be seen as follow:

$H_0 : \sigma_{u0}^2 = 0$ (the random effect is not significant)

$H_1 : \sigma_{u0}^2 \neq 0$ (the random effect is significant)

Meanwhile, the likelihood ratio can be obtained using this following formula:

$$\text{Likelihood Ratio Test (LR)} = -2 \ln \left[\frac{\text{likelihood of model without random effect}}{\text{likelihood of model with random effect}} \right] \sim \chi^2_{(1)} \quad (2)$$

Using the likelihood ratio test, if the LR is more than $\chi^2_{(0,05;1)}$ or the LR is more than 3.84, the conclusion is that there are differences between groups so that a binary logistic model with two levels is better used than a one-level binary logistic regression.

2. Calculating of Intraclass Correlation Coefficient (ICC).
 Intraclass correlation coefficient (ICC) is the proportion of variation in dependent variables that can be explained by differences in group characteristics (Hox, Moerbeek, and Schoot, 2018). ICC can also be interpreted as the ratio between between-group and total variance (Twisk, 2005). The ICC value is in the range of 0 to 1, where the higher the value means the more significant the diversity of NEET status due to inter-provincial characteristics. The ICC value is calculated to determine the magnitude of the diversity or variation in the status of young NEETs caused by differences in provincial characteristics. The value of ICC can be obtained using this following formula:

$$\text{ICC} = \frac{\sigma_{u0}^2}{\sigma_{u0}^2 + \sigma_e^2} \quad (3)$$

3. Simultaneous Parameter Significance Test (G Test)
 This test was conducted to determine the presence or absence of explanatory variables that affect a person's NEET status. The hypothesis of this test can be seen as follow:

$H_0 : \gamma_{10} = \gamma_{20} = \dots = \gamma_{p0} = \gamma_{01} = \dots = \gamma_{0Q} = 0$ (the independent variables do not significantly affect the dependent variable)

$H_1 : \gamma \neq 0$ (at least there is one independent variable significantly affect the dependent variable)

Meanwhile, the likelihood ratio can be obtained using this following test statistics:



$$G = -2\ln\left(\frac{\text{likelihood tanpa variabel penjelas}}{\text{likelihood dengan variabel penjelas}}\right) \sim \chi^2_{(r)} \tag{4}$$

where r is the total of independent variables in the level 1 (individual level) and level 2 (province-level).

The calculation is carried out using the likelihood ratio test equation where if G is worth more than $\chi^2_{0,05;10}$ or G is more than 18.31, then the decision is to reject H_0 , which means that there is at least one independent variable that affects the dependent variable and the model with a variable independent is more suitable.

4. Partial Parameter Significance Test (Wald Test).

This test was conducted to determine the effect of each independent variable on NEET status, both at individual-level and province-level. Statistical testing was carried out using the Wald test. The hypothesis and statistics test can be seen as follow:

Level 1 (individual level)	Level 2 (province level)
$H_0 : \gamma_{p0} = 0$	$H_0 : \gamma_{0q} = 0$
$H_1 : \gamma_{p0} \neq 0, p = 1, 2, \dots, P$	$H_1 : \gamma_{0q} \neq 0; q = 1, 2, \dots, Q$
$W_{p0} = \frac{\hat{\gamma}_{p0}}{Se(\hat{\gamma}_{p0})}$	$W_{0q} = \frac{\hat{\gamma}_{0q}}{Se(\hat{\gamma}_{0q})}$

(5)

If the W value is more than $Z \alpha / 2$ or the p-value is less than alpha, it can be concluded that the independent variable affects the dependent variable. After that, model building with the dependent and independent variables that significantly affect the partial test, a multilevel binary logistic regression model is formed with a random intercept.

5. Parameter Interpretation with Odds Ratio.

The interpretation of the regression coefficients in the logistic regression model is carried out with the odds ratio value obtained from $e^{Y_{pq}}$ (Hosmer and Lemeshow, 2013). The odds ratio value for categorical variables shows the tendency of young people to be NEET-employed status for an explanatory categorical variable is $e^{Y_{pq}}$ times compared to the reference category. As for the numerical variables, the odds ratio value indicates the tendency of young people to become NEET-employed is $e^{Y_{pq}}$ times for every one-unit increase in the explanatory variable. The value of odds ratio can be calculated by the following formula:

$$OR = \frac{\frac{\pi(1)}{1 - \pi(1)}}{\frac{\pi(0)}{1 - \pi(0)}} \tag{6}$$

3. Result and Discussion

3.1. Descriptive statistics of the study variables

Based on data from the 2020 National Labor Force Survey (Sakernas), this study involved 38,192 young people defined as Not in Employment, Education, or Training (NEET) in Indonesia. From Table 2, out of the total NEETs; 22,334 (58.5%) were female, 5,695 (14.9%) were in age 18, 27,720 (72.6%) were married, and 24,091(63.1%) were maximum completing junior high school or below in their education.



In this study, 36,891 (96.6%) were non-disabled and 21,606 (56.6%) were living in urban area. The study has also shown that 37,303 (97.7%) did not migrate in the last five years (not a recent migrant).

Table 2. Characteristic of NEET in 2020

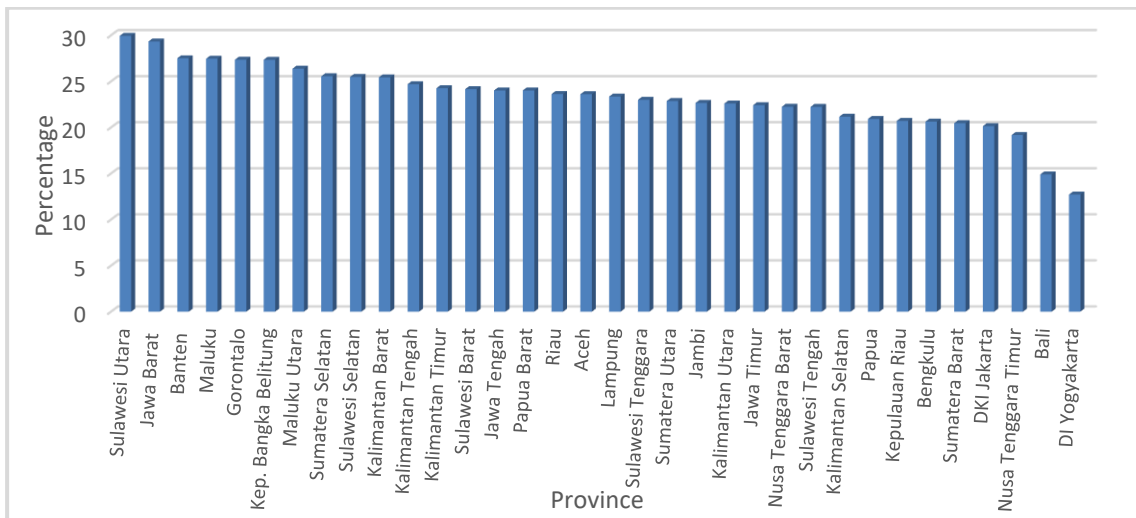
Variables	Category of variables	Frequency	Percent
Gender	Male	15,858	41.5
	Female	22,334	58.5
Age	15-19	15,778	41,4
	20-24	22.414	58,7
Marital status	Never married	10,472	27.4
	Married	27,720	72.6
Educational Level	Senior high school or above	14,101	36.9
	Junior high school or below	24,091	63.1
Disability status	Disabled	1,301	3.4
	Non-disabled	36,891	96.6
Residence	Rural	16,586	43.4
	Urban	21,606	56.6
Recent Migrant Status	A recent migrants	889	2.3
	Not a recent migrants	37,303	97.7

Source: National Labor Force Survey (Sakernas) (processed by authors)

The study revealed that NEET in Indonesia differs between one province to another, as shown in Figure 2. Based on Figure 2, the province with the highest NEET percentage is North Sulawesi province (29.94%); meanwhile, the province with the lowest NEET percentage is D.I. Yogyakarta, (12.71%).

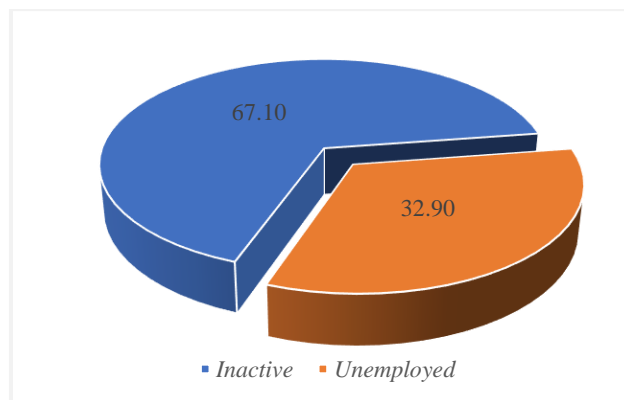
In this study, NEET is divided into two subcategories based on status in the labor market, namely young people who are unemployed (unemployed NEET) and young people who are not actively looking for work (inactive NEET) (Eurofound, 2012). Based on that subcategories, young people classified as NEET in 2020 are shown in Figure 3. Based on Figure 3, it can be seen that 32.90 percent of NEETs are included in the unemployed category, while the remaining 67.10 percent are in the inactive category. This percentage shows that the number of young people with NEET status but not actively looking for work and not receiving work is higher than those unemployed. This fact is following the statement of the International Labor Organization (ILO) in 2021, namely the existence of the Covid-19 pandemic affecting world employment by increasing more people who are inactive in the labor market (inactive) than those who are unemployed (unemployed) (ILO, 2021).

The descriptive of the individual variables are also shown according to the NEET's status in the labor market as can be seen in Figure 3. This study revealed that unemployed NEET is dominated by young people who are male, never married, graduated from junior high school and below, do not have a disability, reside in a place classified as a rural area, and have recent migrant status. On the other hand, inactive NEET has a greater percentage in almost all individual characteristics categories than the unemployed NEET, as for the province-level variables, GRDP, province minimum wage, and HDI showed varied value among the 34 provinces.



Source: National Labor Force Survey (Sakernas) (processed by authors)

Figure 2. NEET (in percent) of each province of Indonesia



Source: National Labor Force Survey (Sakernas) (processed by authors)

Figure 3. Percentage of young people who are categorized as NEET based on their status in the labor market

3.2. Determinants of unemployed NEET in Indonesia during 2020

The first step in multilevel binary logistic regression analysis is testing the significance of random effects. Based on the STATA output in Appendix A, the p-value of this study is 0.0000, moreover, the likelihood ratio test value is 1,032.28, greater than 3.84 as a value of $\chi^2_{0,05;1}$. This value indicates that the decision obtained rejects H0, so it can be concluded that there is a significant random effect with a 95 percent confidence level. This shows that the multilevel binary logistic regression model is better used in this study than one-level binary logistic regression. After obtaining the right analytical decision, the Intraclass Correlation (ICC) is calculated.

The results of data processing in Appendix B show that the ICC value of this model is 0.0453. This value shows that 4.53 percent of the unemployed NEET diversity in Indonesia caused by differences of characteristics among the province-level. The value of ICC can be various among the research. Hox (2018) states that the ICC for level 2 in a household level is 0.0-0.3, means 0-30 percent of the dependent variable variations caused by differences of characteristics among the household-level (as the level 2), meanwhile the ICC when the postal code is chosen as the level 2 is less than 0.05, and for the district level, it is 0.01. Twisk research (2005) also states that the ICC value is still in a question mark, and there



is no definite provision regarding the minimum ICC value. This is also supported by research conducted by Nezlek (2008), which explains that the multilevel model can still be used with an ICC value of 0. Next, the parameters are tested simultaneously. This test was conducted using STATA so that it can obtain output results of the G value.

In this study, using formula (4), the result of the calculation of the likelihood ratio test obtain is 67621.414, worth more than $\chi^2_{0,05;10}$, which is 18.31, so the decision obtained is to reject H_0 . Based on this decision, it can be concluded that with a confidence level of 95 percent, there is at least one explanatory variable that affects the unemployed status of young NEETs in Indonesia.

The analysis stage is then continued by testing the parameters partially. The partial test results obtained will be used to determine which explanatory variables affect NEET unemployment in Indonesia. This partial test decides to reject H_0 because the p-value is less than alpha. Based on this decision, it can be concluded that with a 95 percent confidence level, the explanatory variables tested and have a significant value can be said to affect NEET employment in Indonesia.

The partial test shows that significant and insignificant variables affect NEET to become unemployed NEET in Indonesia. Based on whether the variables are significant or not, a partial re-test was conducted only including significant variables so that each variable's odds ratio value or tendency towards the NEET status can be determined and interpreted. The results of the partial test of the significant variables can be seen in Table 2.

Table 2. Multilevel logistic regression analysis output

Variables	Coefficients	Standard Error	Z	p-value	Odds Ratio
Constant	-8.736	0.896	-9.75	0.000	-
Individual-level variables					
Gender					
Male ^a	-0.770	0.026	-29.78	0.000 ^b	0.463
Female					
Age	0.143	0.006	25.53	0.000 ^b	1.153
Marital status					
Never married ^a	1.762	0.041	43.10	0.000 ^b	5.828
Married					
Education level					
Junior high school or below ^a	0.494	0.028	17.50	0.000 ^b	1.639
Senior high school or above					
Disability status					
Disabled ^a	1.930	0.104	18.58	0.000 ^b	6.893
Non-disabled					
Residence					
Rural ^a	-0.248	0.025	-9.77	0.000 ^b	0.780
Urban					
Migrant recent status					
Migrant recent ^a	-0.378	0.084	-4.51	0.000 ^b	0.685
Non- migrant recent					
Province-level variables					
GDRP	0.004	0.001	4.26	0.000 ^b	1.004
The province minimum wage (UMP)	-0.112	0.078	-1.44	0.151	0.894
HDI	0.035	0.013	2.81	0.008 ^b	1.035

^aReference category

^bSignificant at alpha = 0,05



Based on Table 2, it can be seen that gender, age, marital status, education level, disability status, residence, migrant recent status, GDRP, and HDI significantly influence the Indonesian young NEET status in the labour market in 2020. The multilevel binary logistic regression model formed can be seen as follows:

$$\ln\left(\frac{\hat{\pi}_{ij}}{1-\hat{\pi}_{ij}}\right) = -8.736 - 0.770\text{Gender}_{ij}^* + 0.143\text{Age}_{ij}^* + 1.762\text{Marital}_{ij}^* + 0.494\text{Education}_{ij}^* + 1.930\text{Disability}_{ij}^* - 0.249\text{Klasifikasi}_{ij}^* - 0.378\text{Migran}_{ij}^* + 0.004\text{GDRP}_{ij}^* - 0.112\text{UMP} + 0.035\text{HDI}_{ij}^* \quad (7)$$

Where: *) significant at alpha = 0,05

From Table 2, it can be seen that the genders' slope is negative, and the coefficient value is -0.770, which means that the female sex can reduce a person's tendency to become unemployed NEET 0.463 times compared to males assuming all other variables are constant. In other words, young male are 2.160 times more likely to be unemployed NEET than female. The tendency of male to keep trying to participate in the labor market is probably due to the responsibilities associated with the division of tasks in which men act as breadwinners in the family. Kulik (2000) said that most female are often considered less severe than male in trying to get a job due to the responsibility to take care of the family.

This study revealed that the slope of the age variable has a positive value where the coefficient value is 0.143 which means an increase in age can increase young NEET propensity to become unemployed NEET. Every one-year increase in age will increase a person's tendency to become unemployed NEET by 1.153 times, assuming all other variables are constant. In other words, as age increases, the opportunity to actively seek work or participate in the labor market will be more significant. These results are in line with the research of Sumarsono (2002), which states that young people usually have less responsibility as breadwinners in the family.

In this study, someone who married can increase a person's tendency to become a unemployed NEET by 5.828 times compared to someone who has never been married, assuming all other variables are constant. This finding is similar to studies conducted by Rohmatin (2016) which states that most workers with more than three dependents decide to work. Moreover, according to the duration of being unemployed, Khan and Yousaf (2013) state that married people experience a lower duration of unemployment than single people because married people have family responsibilities and accept jobs even at low wages.

This study reveals that young people who complete the highest education of high school and above can increase their tendency to become unemployed NEET by 1.639 times compared to young people who complete the highest education of junior high school and below, assuming all other variables are constant. These results are consistent with the research results by Theodossiou and Zangelidis (2009), which shows that a person's low level of education can affect whether or not a person is accepted in the labor market. This unfavorable economic condition may affect one's motivation to keep participating in the job market so that high school graduates and above are more likely to stay active in the job market. This can be seen from the Covid-19 pandemic, where even students with high academic achievements face job search problems that need to be resolved.

Based on the statistical test results of the disability status variable as shown in Table 2, with a p-value less than alpha (0.05), it can be concluded that disability status affected young NEETs in Indonesia in 2020. Table 2 shows that disability status affects young NEET status in Indonesia with a positive slope and a coefficient value of 1,930. This means that young people who do not have disabilities can increase the tendency to become unemployed NEET by 6.893 times compared to someone with disabilities assuming all other variables are constant. These results are consistent with research by Rokhim and Handoyo (2015), which states that the condition of persons with disabilities who tend to depend on the help of others causes persons with disabilities to be seen as inferior by others, not least in the labor market. This results in people with disabilities who are often ignored and excluded when applying for jobs.

Based on Table 2, it can be seen that the classification of residence affects the NEET status of young people in Indonesia with a negative slope and a coefficient value of -0.248. This means that young



people who live in areas with urban status can reduce a person's tendency to become unemployed NEET by 0.780 times compared to someone who lives in rural areas assuming all other variables are constant. In other words, young people living in rural areas have a 1.282 times greater tendency to be unemployed NEET than young people living in urban areas. These results do not follow Pasay and Indrayanti (2012) that the labor force that lives in the city has a higher probability of working participation than those who live in the village. This is probably because the fastest and most significant impact of the Covid-19 pandemic is in urban areas. This can be seen from the percentage of poor people in June 2020 who are primarily in urban areas, especially business centers, industry, trade, transportation services, and tourism. The process of transmission through exposure and social barriers causes reduced or lost working time and decreased individual productivity.

This study indicated that someone who is not a recent migrant could reduce the tendency to become an unemployed NEET by 0.685 times compared to someone who is a recent migrant assuming all other variables are constant. In other words, someone who is a recent migrant tends of 1,459 times greater than a non-recent migrant to become an unemployed NEET. According to Behtoui (2004), someone with the status of a migrant tends to have fewer networks where the importance of these networks tends to increase when labor market conditions deteriorate. Based on these two studies, it can be seen that someone with migrant status tends to have smaller opportunities in the labor market, which may affect motivation to participate in the labor market. However, the results of this study are not in line with these studies. This could be because work is the reason for migration by young people, thereby increasing motivation to remain active in the labor market. Lee (1976) and Todaro (1992) stated that the economic motive is one of the motivations for a person to migrate. This motive develops because of the economic inequality between regions, where a person does mobility in the hope of getting a job and getting a better income than the last place.

Province-level variables, GRDP, indicated that every one trillion increase in province-level GRDP would increase a person's tendency to become unemployed NEET by 1.004 times, assuming all other variables are constant. In other words, the increasing GRDP of an area will increase the chances of becoming an unemployed NEET. This finding is similar to studies conducted by Wasilaputri (2016) which states that if the value of GRDP increases, GRDP can affect an increase in the workforce working and increase the amount of value-added output or sales in all economic units in a region.

The province minimum wage (UMP) is included in the research hypothesis because it is hypothesized significantly affect unemployed NEET status at a young age in Indonesia. However, based on statistical tests that include all variables, the UMP has a p-value of 0.151. The resulting decision is failed to reject H_0 at a significance level of 0.05. This result indicated that the research data do not support the research hypothesis, so it can be concluded that the UMP had no effect on young NEET employment in Indonesia in 2020. The result is in line with the ILO statement (2020) that young people tend to work in low-paid jobs and sectors. Many of whom have been hit by the Covid-19 crisis. It also shows that the size of the UMP is unlikely to affect young people's motivation to persist in trying to participate in the labor market.

Based on the coefficients in Table 2, it can be seen that HDI affects the unemployed status of young NEET in Indonesia with a positive slope and a coefficient value of 0.033. This means that every increase of one HDI unit will increase a person's tendency to become unemployed NEET by 1.034 times, assuming all other variables are constant. In other words, an increase in HDI will increase the chances of becoming a NEET. Saputra in Mahroji and Nurkhasanah (2019) states that the HDI shows the achievement of human development based on several essential components of quality of life that can affect a person's level of productivity. In other words, in this case, an increase in HDI in a province shows the capacity of its human resources so that it is possible to increase the desire and motivation to continue to participate in the labor market.

4. Conclusion

Based on the results and discussion described above, this study revealed that in 2020, young people with Not in Employment, Education, or Training (NEET) status in Indonesia are dominated by young people who are female, have never been married, have a maximum education of completing junior high school, do not have disabilities, residing in an urban area, and judging from their migrant status, and they are not recent migrants. Due to the limitation of district-level variables which not available when this study



conducted, province-level used as the level-two in the analysis. Multilevel binary logistic analysis revealed that the unemployed status of young NEETs in Indonesia is influenced by gender, age, marital status, education level, disability status, classification of residence, and recent migrant status. Among the province-level variables, Gross Regional Domestic Product (GRDP) and Human Development Index (HDI) have significantly affected the unemployed status of young NEET. In another hand, province minimum wage was found to not significant affect young NEET to become unemployed NEET. This probably because due to Covid-19 pandemic, young people tend to work in low-paid jobs and sectors, so minimum wage unlikely affect young people's motivation to persist in trying to participate in the labor market. This study revealed that women, older at age, married, complete senior high school or above in education, non-disability, live in rural area, a recent migrant young NEET, higher GDRP and HDI will more likely to become unemployed NEET. These result can be consideration in policy making.

5. Suggestion

Based on the conclusions above, the government is expected to optimize the provision of employment opportunities by considering the characteristics of young people who are still active in looking for work. One of them can be done by optimizing the mismatch program on the pre-employment card to bridge the young age of job seekers with available job opportunities. Moreover, based on the province-level variable, the province government are expected to maximize the province-level variables that affect the tendency of NEETs to remain active in the labor market, GRDP and HDI. This can be done through the preparation of a budget that is right on target in GRDP and pays attention to and maximizes the dimensions of the HDI components, namely a long and healthy life (a long and healthy life), knowledge (knowledge), and a decent standard of living (decent standard of living). The province government also expected to monitor the minimum wage due to the result which indicating that the amount of wage is no more motivated young NEET in seeking job. For further study, expected to do a further direct analysis of the influence of the Covid-19 pandemic on the employment conditions of young people, especially in NEET.

Appendices

Appendix A. STATA output from the significance of random effect test

Obs per group:						
min = 229						
avg = 1,123.3						
max = 3,583						
Integration method: mvaghermite						
Integration pts. = 7						
Log likelihood = -23687.124						
Wald chi2(0) = .						
Prob > chi2 = .						
Uneminac	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
_cons	-.8234965	.0691743	-11.90	0.000	-.9590756	-.6879174
KODE_PROV var(_cons)	.1562393	.0396159			.0950518	.2568149
LR test vs. logistic model: $\chi^2(01) = 1032.28$ Prob >= $\chi^2 = 0.0000$						



Appendix B. STATA output of ICC value

```
. estat icc
```

Intraclass correlation

Level	ICC	Std. Err.	[95% Conf. Interval]	
PROVINCE_CODE	.0453379	.0109746	.028081	.0724099

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