Exploring the determinants of NEET youth in Jambi Province: A socioeconomic perspective

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Abstract

This study aims to analyze: 1) the socioeconomic characteristics and NEET (Not in employment, education, or training) status of young individuals in Jambi Province; 2) the determinants influencing the NEET status of young people in Jambi Province. The data utilized in this study is derived from a survey conducted in four sample villages within Jambi Province, consisting of 200 young participants. Descriptive statistical tools, single-frequency and cross-frequency tables, and binary logit regression are employed for analysis. The findings of the study reveal that: 1) NEET youth, when compared to non-NEET youth, tend to be older, have a higher proportion of females, possess higher education levels, are more likely to be married, are predominantly non-migrants, and have fewer siblings or step-siblings; 2) The parents of NEET youth, in comparison to non-NEET youth, generally have higher incomes and predominantly belong to non-Malay ethnicities in Jambi. 3) Factors significantly impacting the categorization of youth as NEET include gender, education, marital status, and parental income.

Keywords: *NEET, Socioeconomic determinants, Youth population*

JEL Classification: I25, J21, J64

INTRODUCTION

By 2030, Indonesia is projected to undergo a demographic bonus, characterized by a larger working-age population than the non-working-age population, resulting in a decrease in the dependency ratio to 46.9 percent (Kementrian PPN/ Bappenas, 2017). This demographic bonus presents an opportunity to increase per capita output. However, this potential will not be fully realized without policies that enhance the participation of the young workforce (Crombach & Smits, 2022). In essence, the demographic bonus comes with its challenges. Failure to capitalize on the demographic bonus may increase economic burdens and unemployment.

Limited decent work opportunities for young people (aged 15-24 years) have emerged as a global issue (Kovrova & Lyon, 2013). Consequently, the youth labor market has become a significant concern in most countries as youth unemployment rises (Scarpetta et al., 2010).

The Open Unemployment Rate is a common indicator of youth unemployment. However, this metric only accounts for individuals within the labor force and does not encompass young people outside this group. The International Labour Organization (ILO) developed the NEET (Not in employment, education, or training) indicator to address this, representing young individuals not engaged in employment, education, or training (Wickremeratne & Dunusinghe, 2018). Reducing the proportion of NEET individuals is a crucial agenda for achieving the Sustainable Development Goals (SDGs) (Elder, 2015).

NEET differs from youth unemployment, as it includes all young people (aged 15-24 years) who are neither employed nor enrolled in education or training programs. NEET can be divided into unemployed NEET and inactive NEET. Unemployed NEETs comprise young individuals who are not working but are actively seeking employment, preparing a business, have been accepted for a job but have not started working, or have a business that has not yet commenced operations. Inactive NEETs, on the other hand, consist of young people who are neither employed nor participating in education or training and are not actively seeking employment or willing to accept work (Eurofound, 2016; ILO, 2017; Odoardi, 2020; Quarta, 2021).

However, this simplistic categorization may result in ineffective NEET abatement policies due to the highly heterogeneous characteristics of NEET individuals (Chen, 2011). Furlong (2006) suggests that policies targeting more vulnerable groups would be more effective if they consider the diverse characteristics of NEET populations.

Within this context, European countries have established five classifications for NEET individuals (Eurofound, 2016): (1) conventionally unemployed: those who are not working due to a lack of available jobs; (2) unavailable or carers-cared: those who do not have time to work, such as young housewives responsible for childcare at home; (3) opportunity-seekers: young people who actively seek work or training, but only pursue opportunities they perceive as commensurate with their skills and status; (4) discouraged: a group that has lost motivation to search for work; and (5) voluntary: young people who engage in alternative lifestyles, such as adventure or travel, and other activities like art, music, and more.

In addition to these classifications, Salvà-Mut et al. (2018) conducted research in Spain that identified three sub-groups of NEET individuals: (U) unemployed, (D) discouraged, and (C) carers-cared categories. This study will also utilize this grouping structure.

NEET represents a significant issue due to its social and economic impacts, which include social exclusion, marginalization, decreased mental health, criminal activity, and permanent unemployment. Furthermore, it leads to the loss of potential human capital from the young population for future economic development (Alonso et al., 2022; Felaco & Parola, 2022; Fougère et al., 2009; Heckman et al., 2018; Jongbloed & Giret, 2022; Maguire et al., 2013; Noh & Lee, 2017; Simões et al., 2021). In recent years, the proportion of youth not engaged in education, employment, or training (NEET) has significantly increased in many European countries (Quintano et al., 2018). This has resulted in substantial macroeconomic losses, with some countries

experiencing losses of up to 1.21 percent of their Gross Domestic Product (GDP) (Eurofound, 2016).

Indonesia has the highest NEET rate in Asia (ILO, 2017), with a proportion of 21.7 percent. This figure is considerably higher than that of Malaysia at 12.5 percent, Thailand at 14.8 percent, and Vietnam at 8.3 percent. Consequently, addressing the high percentage of NEET in Indonesia is paramount.

Jambi Province in Indonesia has a relatively high proportion of young individuals with NEET status. According to 2021 data, the NEET proportion accounts for 21.76 percent of the total population aged 15-24 years, which amounts to 512,952 people (BPS, 2021). In other words, 111,618 residents aged 15-24 should have been engaged in education but did not receive it. Additionally, they were not absorbed into the job market and did not participate in economic activities.

Various studies have investigated the determinants of the young NEET population. Bynner & Parsons (2002) found that transitioning from school to an unfavorable work period was the primary factor causing young individuals to become NEET. Salvà-Mut et al. (2018) identified a connection between various macro, meso, and micro factors as determinants of youth NEET status in Spain. In line with this, Vancea & Utzet (2018) found that environmental factors influenced the likelihood of young individuals becoming NEET. The probability of youth becoming NEET tends to be higher in environments with elevated unemployment rates. Prasad (2013) also discovered a mismatch between skills and industry needs, resulting in youth unemployment.

Riphahn (2002) determined that gender, marital status, and regional and local labor market characteristics influence young people's decisions when transitioning from school to work. Young married women living in rural areas with high unemployment rates tend to be less active in the labor market. Concerning marital status, Salvà-Mut et al. (2018) and Sziraczki & Reerink (2004) found that cultural factors in Indonesia significantly influence the likelihood of married women becoming inactive or carers-cared NEETs. The gender-based division of roles, particularly in rural areas, requires young mothers to focus on family care, childcare, and avoiding work outside the home.

Riphahn (2002) also identified a link between economic and migration factors as determinants of NEET status. Economic constraints hinder young people from relocating to areas with greater job opportunities. In line with these economic factors, Chen (2011) found that economic disadvantages prevent young individuals from continuing their education or participating in job training, leading them to be categorized as discouraged NEETs.

Moreover, Gaffari & Handayani (2019) discovered differences in the effects of socio-demographic factors and regional and labor market indicators on the likelihood of youth becoming unemployed, discouraged, and carers-cared in Indonesia. NEET carers are predominantly teenage girls (15-19 years old), married, with low education levels, coming from low-income families, and residing in rural areas with high unemployment rates. Unemployed individuals are mostly teenage boys (15-19 years old), single, with higher education levels, and living in urban areas. Discouraged individuals share similar characteristics to the unemployed but have lower education levels.

Quarina (2017) found that age is one of the determining factors for NEET status. The younger youth group (15-19 years old) tends to become NEET. However, the older adolescent age group (20-24 years) is more vulnerable to becoming NEET.

In light of these findings, appropriate policies are needed in Jambi Province to reduce the NEET rate. Given the heterogeneity of young NEETs, it is essential to identify their socioeconomic characteristics, status, and the determinants of becoming NEETs to formulate suitable policies. The characterization and identification of NEET determinants aim to facilitate the early detection of individuals at risk of becoming NEET and to gather information about the challenges young people face when attempting to leave NEET status.

METHODS

The primary data used in this study consists of data collected from young people (15–24 years) sampled in Jambi Province. The population in this study includes all young people (15-24 years) in Jambi Province, without distinguishing between NEET and non-NEET individuals. The main unit of analysis is the young NEET population, while the non-NEET youth serves as the comparison group for the analysis.

The sample frame used consists of two types: the sample frame for the first stage of sampling and the sample frame for the second stage. The first stage of the sample frame involves selecting villages in Jambi Province. The sample frame's second stage consists of selecting a sample of young people by choosing a sample of households with young residents.

The sampling method employed is stratified two-stage sampling. The first stage involves selecting sample villages to serve as research locations. Purposive sampling involves the following considerations and approaches: 1) Jambi Province has 11 regencies/cities, which can be geographically divided into East and West regions. Jambi City represents the Eastern Region of Jambi Province as the district/city with the highest proportion of young people in the Eastern region. Bungo Regency represents the Western Region of Jambi Province as the district/city with the highest proportion of young people in the Western region; 2) From each selected district/city, two villages with the largest number of young people are determined. Information on the village to be selected is based on data from the BKKBN, referring to family data collection data. The second stage involves selecting a sample of 50 households with a young population in each village. Sampling is carried out by random sampling with the following stages: 1) Listing households with a young population in each village, based on family data collection conducted by the BKKBN in 2019; 2) Randomly selecting 50 households with young residents in each village using RNG (Random Number Generator) software; 3) If there is more than one young person in the household, one young individual is selected through simple random sampling.

The instrument for collecting data on a sample of young people utilizes a questionnaire. Furthermore, descriptive statistical tools and single-frequency tables are used to analyze the young population's socioeconomic characteristics. To explore the socioeconomic determinants that affect young people with NEET status in Jambi Province, a binary logit regression model is employed with the following equation:

$$g(x_i) = \ln \frac{P(x_i)}{1 - P(x_i)} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_{3.D1} X_{3.D1} + \beta_{3.D2} X_{3.D2} + \beta_{.4} X_4 + \beta_{.5} X_5 + \beta_{6.D1} X_{6.D1} + \beta_{6.D2} X_{6.D2} + \beta_{7.D1} X_{7.D1} + \beta_{7.D2} X_{7.D2} + \beta_8 X_8 + e \quad \text{......(1)}$$

Where:

P(xi) = probability of being a NEET, 1- P(xi) probability of not becoming a NEET)

X1 = Age (years)
X2 = Gender (0 = male; 1 = female)
X3 = Formal education (with the basic category of junior high school and below):
X3.D1 1 = < SLTA; 0 = other: X3.D2 1 = PT; 0 = other
X4 =Married status (0 = single, 1 = married)
X5 = Migrant status (0 = non-migrant, 1 = migrant)
X6 = Number of siblings (with basic category 0 – 1):
X6.D1 1 = 2- 3; 0 = others: X4.D2 1 = > 4; 0 = other
X7 = Per capita family income (IDR per month), with the basic category <IDR 500,000:
X7.D1 1 = 500,000 - < 1,000,000; 0 = other:
X7.D2 1 = >= 1,000,000; 0 = other
X8 = Tribe, (0 = Not Jambi Malay, 1 = Jambi Malay),

RESULT AND DISCUSSION

Characteristics of Non-NEET and NEET young population in Jambi Province

Out of 200 respondents aged 15-24, this study identified 49 (24.50%) in the NEET category and 151 (75.50%) in the non-NEET category. Figure 1 presents the characteristics of the youth population by age group, gender, and marital status.

The age group distribution indicates that the youth population in the NEET category is predominantly in the 20-24-year age range. Moreover, the gender distribution of the youth population demonstrates that females are more likely to be classified as NEET than non-NEET. Of the total NEET population, 83.67% are female, and 16.33% are male. An analysis of the marital status of youth reveals that the proportion of married individuals is higher among NEET youth than non-NEET youth.

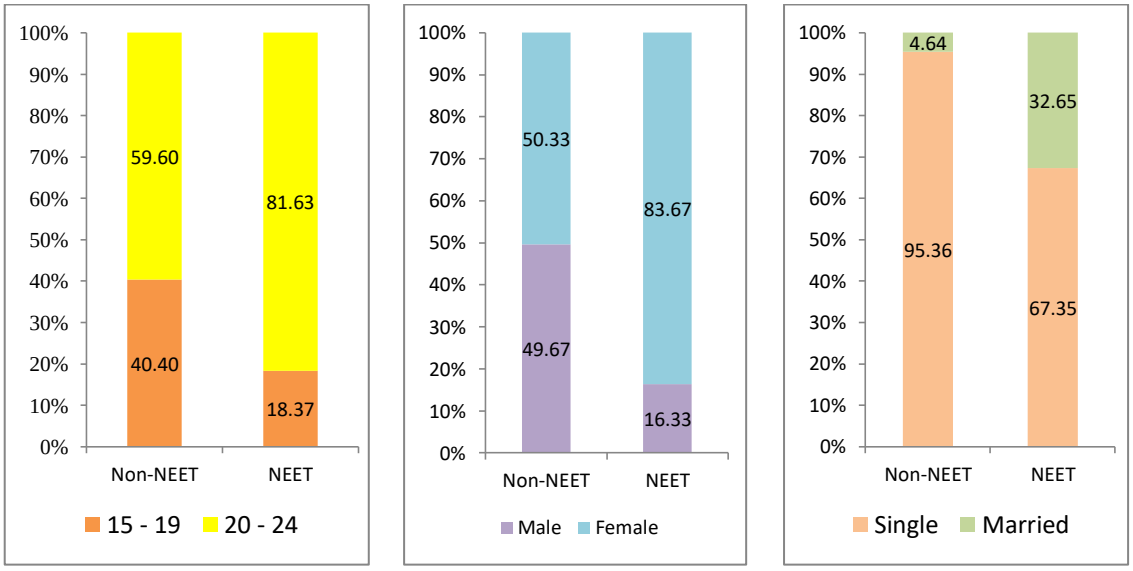

Figure 1. Non-NEET and NEET young population by age, gender, and marital status in Jambi Province, 2022

Table 1 demonstrates that youth in the NEET category tend to have higher education levels than non-NEET youth. More than a quarter (28.57 percent) of NEET youth have tertiary education (D1 – Masters), whereas only 12.57 percent of non-NEET youth have tertiary education (S1 – Masters).

Table 1. Non-NEET and NEET young population by education in Jambi Province, 2022 (%)

Completed highest education	NEET Status		Total
	Non- NEET	NEET	
Junior high school	18.54	6.12	15.50
High school	51.66	46.94	50.50
Vocational High School	17.22	18.37	17.50
Diploma I-III	1.32	4.08	2.00
DIploma IV	0.66	4.08	1.50
Bachelor	9.93	20.41	12.50
Magister	0.66	0.00	0.50
Total	100.00	100.00	100.00

Analyzing family size and sibling distribution can provide valuable insights into the NEET and non-NEET youth populations. Table 2 demonstrates that non-NEET youth have a higher average number of siblings (2.47 individuals) than NEET youth (2.35 individuals).

Table 2. Non-NEET and NEET young population by the number of siblings/step-siblings in Jambi Province, 2022 (%)

Number of siblings/step-siblings	NEET Status		Total
	Non- NEET	NEET	
0 - 1	23.18	24.49	23.50
2 - 3	59.60	55.10	58.50
4 +	17.22	20.41	18.00
Total	100.00	100.00	100.00
The average number of siblings/step-siblings	2.47	2.35	2.44

Table 3 presents the migration status of youth, categorizing youths as migrants if they have lived outside their current district/city in the last five years. Based on this, the proportion of NEET youth with migrant status (10.20 percent) tends to be lower than that of non-NEET youth (11.92 percent).

Table 3. Non-NEET and NEET young population by place of residence 5 Years in Jambi Province, 2022 (%)

Completed the highest education	NEET Status		Total
	Non- NEET	NEET	
Same district/city	88.08	89.80	88.50
Different districts/cities	9.27	8.16	9.00
Different province	2.65	2.04	2.50
Total	100.00	100.00	100.00

Table 4, based on maternal ethnicity and comparing Jambi Malay ethnicity with other ethnic groups, shows that the proportion of mothers with Jambi Malay ethnicity is greater among non-NEET youth than NEET youth.

Table 4. Non-NEET and NEET young population by mother's tribe, Jambi Province, 2022 (%)

Mother's tribe	NEET Status		Total
	Non- NEET	NEET	
Java	(35.76)	(38.78)	(36.50)
Jambi Malay	(35.10)	(34.69)	(35.00)
Minangkabau	(12.58)	(16.33)	(13.50)
Batak	(5.96)	(10.20)	(7.00)
Other	(10.60)	(0.00)	(8.00)
Total	100.00	100.00	100.00

Examining parental income can illuminate the socioeconomic factors influencing the NEET and non-NEET youth populations. Table 5 details parents' income, revealing that the average income of parents of NEET youth is greater than that of parents of non-NEET youth.

Table 5. Non-NEET and NEET young population by parental income in Jambi Province, 2022 (%)

Number of siblings/step-siblings	NEET Status		Total
	Non- NEET	NEET	
<= 2.500.000	(21.85)	(8.16)	(18.50)
2.500.000 - 5.000.000	(54.30)	(59.18)	(55.50)
> 5.000.000	(23.84)	(32.65)	(26.00)
Total	100.00	100.00	100.00
Average (IDR)	4,779,470	5,612,244	4,983,500

The average income of parents of non-NEET youth is IDR 4,779,470 per month, while the income of parents of NEET youth is IDR 5,612,244 per month. The higher income of the NEET youth's parents suggests that a person's willingness to search for a job for a longer period, in line with their expectations, is also determined by the support/guarantee from their parents when they are still unemployed.

The socioeconomic determinants of youth becoming NEET

Overall Model Fit Test

Table 6 presents the Overall Model Fit test for the model. Based on the Omnibus Test of Model Coefficients, the Chi-Square statistic is 57.864, with a significance probability (p) of 0.000. This result indicates that the independent variables in the model collectively impact the young population's decision to have NEET status.

Furthermore, the Hosmer and Lemeshow test yields a Chi-Square value of 5.943, with a p-value of 0.645. Since the Chi-Square value is insignificant ($p > 0.05$), it can be concluded that the predicted probabilities align with the observed probabilities. In other words, there is no difference between the model and the data, suggesting that the model is a good fit.

Table 6. Overall model fit test for the NEET determinant model

	Chi-square	df	Sig.
Omnibus Test of Model Coefficients	57,864	11	,000
Hosmer and Lemeshow Test	5,943	8	,654

Furthermore, Table 7 displays the 2 x 2 classification table, demonstrating how well the model classifies cases into two groups: NEET and Non-NEET. The overall prediction accuracy is 78.0 percent, with the prediction accuracy for Non-NEET at 91.4 percent and for NEET at 36.7 percent. This means that the model's accuracy in predicting the probability of youth being Non-NEET is relatively higher than the accuracy in predicting the probability of youth being NEET.

Table 7. Classification 2 x 2 for the NEET determinant model

Observation		Prediction		
		Category		
		Non-NEET	NEET	Correct Percentage
Category	Non-NEET	138	13	91,4
	NEET	31	18	36,7
Overall Percentage				78,0

Model coefficient estimation and partial hypothesis testing

Table 8 presents the estimation of the model coefficients and partial hypothesis testing of the model. In the logit model, the coefficients indicate the change in the log resulting from a one-unit change in the independent variable. The correct interpretation of these coefficients depends on understanding the difference between the two logits. Therefore, the logit model uses a measurement known as the odds ratio (ψ). The odds ratio can be formulated as ψ = e^β, where e is the number 2.71828, and β is the coefficient of each variable.

For categorical independent variables, the odds ratio interpretation shows the probability/chance/likelihood difference between a category and the base category (category with a value of 0). If the odds ratio is less than one, it indicates a lower/smaller chance than the base category. On the other hand, if the odds ratio is greater than one, it indicates a higher/bigger chance compared to the base category.

For continuous independent variables, the odds ratio interpretation shows the difference in probability/chance/likelihood between a value and a value one level below it. If the odds ratio is less than one, it indicates a lower/smaller chance compared to the value at the level below. Conversely, if the odds ratio is greater than one, it indicates a higher/bigger opportunity compared to the value at the level below.

Table 8. NEET determinant model parameter estimation

	B	S.E.	Wald	df	Sig.	Exp(B)	Information
X1(1)	-,140	,550	,065	1	,799	,869	Age (20-24)
X2(1)	1,455	,475	9,397	1	,002	4,285	Gender (Female)
X3			5,725	2	,057		Education
X3(1)	1,388	,758	3,355	1	,067	4,008	High school
X3(2)	2,190	,920	5,668	1	,017	8,938	College
X4(1)	2,456	,634	14,987	1	,000	11,657	Marital status (married)
X5(1)	,036	,639	,003	1	,956	1,036	Migrant status (migrant)
X6			2,567	2	,277		Number of siblings/step-siblings
X6(1)	-,021	,493	,002	1	,966	,979	2 – 3 persons
X6(2)	,920	,687	1,793	1	,181	2,508	> 3 persons
X7			10,936	2	,004		Family income
X7(1)	2,370	,718	10,900	1	,001	10,698	500.000 - < 1.000.000
X7(2)	1,910	,762	6,280	1	,012	6,750	>= 1.000.000
X8(1)	-,025	,431	,003	1	,954	,975	Tribe (Jambi Malay)
Constant	-5,758	1,139	25,558	1	,000	,003	

Additionally, the ordinal logit regression model is interpreted by examining each variable's significance and odds ratio value. There is no difference in the likelihood of becoming a NEET between youth aged 20-24 and those aged 15-19 (as the reference category), as indicated by the insignificant Wald test in this age group. This contrasts with the findings of Bisht & Pattanaik (2022) and Quintano et al. (2018), demonstrating an increased likelihood of becoming a NEET with age.

Females have a higher probability of becoming NEETs compared to males. The odds ratio reveals that females have a 4.285 times greater probability of becoming NEET than males (as the reference category). This finding aligns with prior research, which indicates a higher likelihood of females becoming NEET and suggests the

presence of gender discrimination in the labor market (Lüküslü & Çelik, 2022; Odoardi et al., 2022; Quintano et al., 2018; Ralston et al., 2022).

Higher education levels are associated with a greater likelihood of youth becoming NEETs. Individuals with a high school education have a 4.008 times greater probability of becoming NEET than those with a junior high school education or lower (as the reference category). Moreover, youth with tertiary education have an 8.938 times greater probability of becoming NEET than those with junior high school education or lower. These findings are consistent with previous research and highlight the low job market absorption for better-educated job seekers (Caroleo et al., 2022; Gladwell et al., 2022; Salvà-Mut et al., 2018; Tamesberger & Bacher, 2014).

Married youth are more likely to become NEETs compared to unmarried youth. Married youth have an 11.657 times greater probability of becoming NEET than unmarried youth (as the reference category). This is consistent with previous findings that show married youth, particularly women, tend to have a higher probability of becoming NEET due to conflicts between managing the household and pursuing careers (Dicks et al., 2022; Naraswati & Jatmiko, 2022; Saputri & Setyodhono, 2019).

No difference exists in the likelihood of becoming a NEET between youth with migrant status and non-migrant status (as the reference category). This concurs with the observation that parents' ethnicity (particularly maternal ethnicity) does not influence the likelihood of youth becoming NEET or non-NEET. This contrasts with the findings of Quintano et al. (2018) that indicate a higher likelihood of becoming a NEET among migrants.

The number of siblings/step-siblings does not impact the likelihood of becoming a NEET or non-NEET, as evidenced by the insignificant Wald test on the variable number of siblings across various categories. This differs from prior research suggesting family size affects the probability of NEET or non-NEET (Furlong, 2006; Mendolia & Walker, 2015).

Moreover, family income significantly influences the likelihood of youth becoming NEET or non-NEET. Young people from families with a per capita income between 500,000 and under 1,000,000 face a 10,698 times higher risk of becoming NEET than those with incomes below 500,000 (as the reference group). Additionally, youth from families with an income equal to or greater than 1,000,000 have 6,750 times higher chances of becoming NEET than those with incomes below 500,000. This is consistent with prior research (Cabral, 2018; Furlong, 2006; Pitkänen et al., 2021; Rak, 2021), which indicates that parents' income and family economic conditions affect the likelihood of youth becoming NEET or non-NEET.

Parents' ethnicity, particularly the mother's ethnicity, has no significant impact on the chances of youth becoming NEET or non-NEET, as evidenced by the insignificant Wald test on this variable.

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CONCLUSION AND RECOMMENDATION

Conclusion

Compared to non-NEET youth, NEET youth are characterized by being older, having a higher proportion of women, and possessing a higher level of education. Additionally, they have a greater proportion who are married, a higher proportion of

non-migrants, and fewer siblings or step-siblings.. Furthermore, the factors that significantly affect youth being categorized as NEET are gender, education, marital status, and parents' income.

Gender plays a significant role, with females having a higher probability of becoming NEET than males, indicating the presence of gender discrimination in the labor market. Higher educational attainment increases the likelihood of youth becoming NEET, reflecting the low absorption of better-educated job seekers in the job market. Married youth are more likely to become NEET than unmarried youth, particularly due to conflicts between managing household responsibilities and pursuing careers. Family income significantly affects the chances of youth becoming NEET or non-NEET, with higher income levels increasing the probability of NEET status.

Recommendation

Based on the research findings, the following recommendations are proposed to reduce the prevalence of NEET among youth: 1) Implement policies that address gender discrimination in the labor market and promote equal opportunities for both male and female job seekers; 2) Enhance career guidance and counseling programs to help youth make informed decisions regarding their education and career paths, taking market demands into account; 3) Develop programs to support married youth in balancing household responsibilities and career aspirations, particularly targeting women who face challenges in managing both roles; 4) Design targeted interventions to support youth from economically disadvantaged backgrounds, aiming to increase their likelihood of becoming non-NEET; 5) Foster collaboration between educational institutions and employers to better align educational offerings with the job market's needs, ensuring a smoother transition from education to employment for youth.

This study has limitations, as the analysis primarily focuses on the quantitative factors influencing NEET status. Consequently, it is recommended that future research supplement NEET studies with qualitative aspects, such as exploring the motivation behind youth becoming NEET. Additionally, future research should investigate the impact of other potential factors, such as geographical location and access to resources, on the probability of youth becoming NEET or non-NEET.

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