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Sociodemographic Determinants of Youth NEET in Indonesia

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Abstract

Indonesia's youth NEET (Not in Education, Employment, or Training) rate has consistently exceeded 20 percent since 2018, indicating a substantial loss of productive human capital and posing serious socio-economic challenges that require structural policy responses. This study examines the sociodemographic factors associated with NEET status among individuals aged 15–24 in Indonesia, while also investigating the role of socio-digital factors that remain underexplored in existing research. Using data from the 2023 National Labor Force Survey (SAKERNAS) and a sample of 158,816 youth, the analysis employs binary logistic regression to assess the effects of individual characteristics (gender, age, marital status, disability, and education), household characteristics (education and marital status of the household head), and socio-digital factors (technology access and participation in government programs) on the probability of being NEET. The findings demonstrate that NEET status in Indonesia represents a complex and multidimensional problem, with an estimated prevalence of approximately 24.3 percent and strong influences from sociodemographic factors. Higher educational attainment, unmarried status, and prior work experience are associated with a lower likelihood of being NEET, whereas access to information technology and higher educational attainment of the household head are linked to a higher risk. These results underscore the need for an integrated and context-specific policy strategy that combines employment creation, enhancement of vocational education quality, strengthening of digital skills, and family planning initiatives, while accounting for regional disparities.

Introduction

NEET (Not in Education, Employment, or Training) status among youth constitutes a critical barrier to sustainable development worldwide [1], and Indonesia has faced a persistent challenge in this regard, with the NEET rate among individuals aged 15–24 remaining above 20 percent for seven consecutive year [2]. This condition hampers the achievement of the Sustainable Development Goals (SDGs), particularly those related to poverty reduction (SDG 1) [3,4] and improvements in the quality of human resources and employment outcomes (SDGs 4 and 8) [5–7], while also posing risks of youth dehumanization, chronic economic deprivation, and entrenched structural unemployment [8,9].

According to Statistics Indonesia (BPS), the category of youth encompasses individuals aged 15–24 years. The youth NEET indicator specifically measures the proportion of this age cohort that is not engaged in employment, education, or training [10,11]. The term youth NEET thus refers to young people who are simultaneously not enrolled in school, not employed, and not participating in any formal training or skills development programs [12]. In general, this group comprises adolescents and young adults of productive age who, while expected to be developing their skills through education or employment, are hindered by various structural and personal factors [13,14].

Figure 1. Percentage of young people (aged 15–24) in Indonesia who are not in education, employment, or training (NEET), 2018–2024 (Source: Statistics Indonesia [2]).

Based on Figure 1, the youth NEET rate, while showing a general downward trend, has consistently remained above 20 percent. This persistence indicates a stagnant and relatively high prevalence of the phenomenon over the past seven years. The data reveal that more than one-fifth of Indonesia's youth population is disengaged from all forms of skill development, being out of school, unemployed, and not participating in training [15,16]. This represents a significant loss of potential, as this cohort should be at a vital life stage dedicated to productivity and capability building through educational pathways, labor market entry, or vocational preparation [17,18]. Although the national NEET rate improved in 2024 following the pandemic, substantial disparities across provinces remain. These disparities are particularly pronounced in Eastern Indonesia and several provinces in Sumatra. Therefore, future efforts to reduce NEET rates must prioritize improving access to education, expanding skills training, and promoting the creation of inclusive and equitable employment opportunities.

Meanwhile, Sari & Ahmad [19] argue that married youth are more likely to enter NEET status, particularly young women who tend to prioritize household responsibilities after marriage. These findings differ from those of Anggraini et al. [13], who find that higher levels of youth education are associated with a greater likelihood of being NEET. This supports the phenomenon of educated unemployment observed in recent years. Consistently, Naraswati & Jatmiko [20] confirm that NEET unemployment among youth is influenced by multiple factors, including gender, age, marital status, highest educational attainment, disability status, area of residence, and recent migration status.
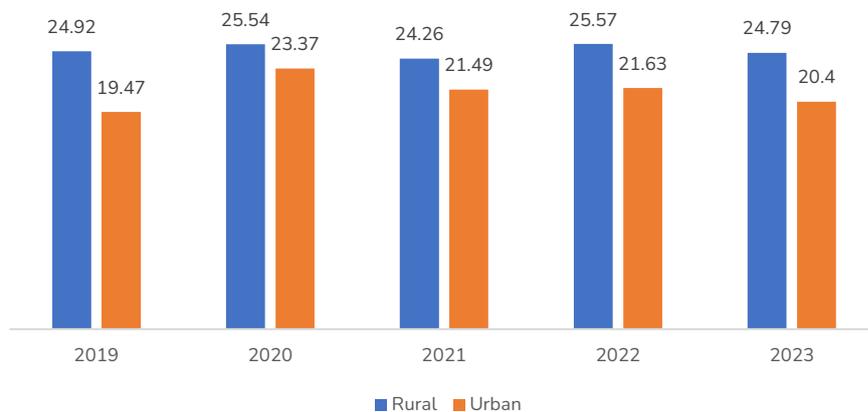

Figure 2. Percentage of NEET youth in rural and urban areas in Indonesia, 2019–2023. (Source: Statistics Indonesia [2])

Significant disparities in NEET status among youth also exist between urban and rural contexts, as shown in Figure 2. Rural areas are primarily constrained by limited access to education and

employment, whereas urban centers predominantly face a structural mismatch between workforce skills and industrial demands [21,22]. These distinct challenges highlight that NEET status is not a monolithic condition but rather the outcome of a complex interplay between structural barriers and social factors, as corroborated by extensive academic literature. Gender-based analysis reveals a disproportionate risk of NEET status among women, particularly after marriage. This trend is frequently associated with practices such as early marriage and is perpetuated by social norms that prioritize domestic roles for women [23]. Concurrently, socioeconomic factors play a critical role, as individuals from families with lower parental education and income face a significantly higher probability of entering the NEET category. Vulnerability is further compounded by geographical determinants, notably entrenched inequities in access to education, skills development, and employment between rural and urban areas [13]. At the same time, individuals with disabilities face distinct structural obstacles, including limited access to formal education and vocational training, which substantially increase their likelihood of becoming NEET. Research by Jessica & Arcana [24] further highlights the geographical dimension of Indonesia's NEET phenomenon, identifying rural areas as consistently recording the highest proportion of youth not in employment, education, or training, thereby underscoring these regions as the most critical loci of youth disengagement in the national context during the period studied.

These patterns are consistent with cross-country empirical evidence. A study by Drakaki [25] in Greece, for example, the NEET cohort is disproportionately composed of women and youth from socioeconomically disadvantaged backgrounds, characterized by lower parental education and household income, while research by Byoung-Hoon & Kim [26] in South Korea highlights a dual challenge in which young women face greater barriers to employment and highly educated, non-working youth often exhibit lower proactivity in skill development, thereby delaying their entry into the labor market. NEET status is associated with heightened risks of social exclusion, mental health problems, and diminished human capital competitiveness. In the context of Indonesia's demographic bonus, persistently high NEET rates therefore pose a serious threat to long-term economic growth, underscoring the need for targeted policies to enhance youth employment, expand access to education and training, and bridge existing competency gaps [27].

This study is theoretically grounded in Human Capital Theory and Labor Market Segmentation Theory, which together provide a coherent framework for explaining youth NEET status in Indonesia. Human Capital Theory posits that education, training, and work experience are key investments that enhance individual productivity and employability; insufficient accumulation of these assets increases the risk of labor market exclusion and inactivity [28,29]. Within this framework, NEET status reflects underinvestment or constrained access to human capital formation, particularly among youth facing socioeconomic disadvantages, early marriage, disability, or limited educational opportunities. Complementarily, Labor Market Segmentation Theory emphasizes that labor markets are structurally divided into primary and secondary segments, with unequal access to stable employment, skill utilization, and career progression [30,31]. Together, these theories suggest that youth NEET status is not solely the outcome of individual characteristics but the result of cumulative human capital constraints interacting with structural barriers in education and labor markets, aligning closely with the empirical patterns observed in Indonesia and other countries.

Previous studies in Indonesia consistently show that youth NEET status is shaped by a combination of individual, household, and regional characteristics. Amini & Aditina [21] find that NEET youth are predominantly married women with education levels up to senior high school, residing in rural areas—especially outside Java—and living with employed household heads, highlighting the importance of sociodemographic and spatial factors. Febryanna [32] further distinguishes between active and inactive NEETs, showing that inactive NEETs are more likely

to be low-educated, female, married, disabled, and rural residents, while active NEETs tend to be male, unmarried, better educated, younger, and urban-based. Provincial and national evidence by Citra [33] and Naraswati & Jatmiko [20] reinforces these patterns: disability, marriage, low parental education, larger household size, gender, age, residence, and migration status significantly increase the likelihood of being NEET.

Other studies emphasize the contextual and structural nature of NEET vulnerability. Pattinasarany [34] shows that women, particularly married women in rural areas, face a substantially higher risk of NEET status due to domestic role expectations, with NEET prevalence also varying across age groups. Regional evidence from West Nusa Tenggara by Rahmawati et al. [35] indicates that age, place of residence, and training experience matter more than education or marital status, underscoring regional heterogeneity. Interaction-based analyses by Sari & Ahmad [19] further reveal that NEET status emerges from intertwined effects of gender, age, marital status, parental education, and disability, while pandemic-era findings by Febria et al. [36] confirm the continued relevance of these structural factors. International studies such as by Demidova & Signorelli [37], Fakih et al. [38], and Verd et al. [39] similarly point to the roles of regional development, institutional quality, gender inequality, and social class in shaping youth unemployment and NEET outcomes.

The existing literature on NEET largely concentrates on conventional demographic factors such as age, gender, education, marital status, and geographic location, offering important but incomplete explanations of youth disengagement. Empirical studies that systematically examine the roles of digital access and literacy, as well as participation in government social assistance programs, remain limited, despite their growing relevance in the digital and post-pandemic labor market context. This study addresses this gap by incorporating these underexplored dimensions into the analysis, thereby providing a more comprehensive understanding of how contemporary technological and policy-related factors influence NEET outcomes among youth.

Building on these gaps, this study investigates the sociodemographic determinants influencing youth NEET status in Indonesia by examining the roles of gender, family educational background, marital status, and urban–rural residence. Using data from the 2023 National Labor Force Survey (SAKERNAS) covering 158,816 individuals aged 15–24, the analysis provides timely, post-pandemic evidence on the structural factors shaping youth disengagement. The findings are expected to generate data-driven insights that complement existing literature and support the formulation of more inclusive and effective policies aimed at reducing NEET prevalence and strengthening the global competitiveness of Indonesia's human capital.

Materials and Methods

Data

This research adopts a quantitative explanatory design to investigate the sociodemographic factors associated with youth NEET status in Indonesia. The analysis draws on microdata from the 2023 National Labor Force Survey (SAKERNAS), administered by Statistics Indonesia (BPS), along with supplementary official BPS publications. SAKERNAS provides nationally representative data collected using standardized methodological protocols, thereby ensuring the reliability and comparability required for robust statistical inference [40].

The study population comprises Indonesian youth aged 15–24 years, totaling 272,816 individuals. Using a purposive sampling approach, the analysis includes individuals who meet two criteria: (i) belonging to the specified age cohort and (ii) having complete information for all variables included in the analysis. The final analytical sample consists of 158,816 individuals.

Variable and Operational Definition

This study involves two types of variables, namely independent and dependent variables. According to Sugiyono [41], an independent variable is the presumed cause in a relationship, while a dependent variable is the presumed effect. Thus, the independent variable functions as the causal factor, and the dependent variable represents the outcome. The variables and their operational definitions are presented in Table 1.

Table 1. Variable and operational definition.

Variable Status	Variable Name	Symbol	Scale	Value
Dependent	NEET Status	Y	Nominal	1 NEET
				0 Non-NEET
Independent	Age	X_1	Nominal	1 20-24 years old
				0 15-19 years old
	Gender	X_2	Nominal	1 Female
				0 Male
	Highest level of education	X_3	Nominal	1 High school or equivalent
				0 Other than high school or equivalent
	Marital status	X_4	Nominal	1 Married
				0 Never married
	Disability status	X_5	Nominal	1 Disabled
				0 Non-disabled
	Regional classification	X_6	Nominal	1 Urban
				0 Rural
	Course experience	X_7	Nominal	1 Yes
				2 No
	Migration status	X_8	Nominal	1 Migrant
				0 Non-migrant
	Work experience	X_9	Nominal	1 Yes
				2 No
	Highest education of head of household	X_{10}	Nominal	1 High school or equivalent
				0 Other than high school or equivalent
	Head of household marital status	X_{11}	Nominal	1 Married
				0 Never married
	Access to information technology	X_{12}	Nominal	1 Yes
				2 No
	Membership in government programs	X_{13}	Nominal	1 Yes
				2 No

The dependent variable is NEET status, defined as youth who were not employed, not attending formal education, and not participating in any training or courses during the four weeks prior to the survey. NEET status is coded as 1 = NEET and 0 = non-NEET.

The independent variables represent sociodemographic, experiential, and household characteristics, including: (a) basic sociodemographic factors—age group (15–19, 20–24), sex, marital status, educational attainment, disability status, and urban–rural residence; (b) experience and environmental factors—participation in training or courses, migration status, and prior work experience; and (c) household factors—educational attainment and marital status of the household head, as well as access to information technology.

All variables are treated as binary categorical variables based on standardized definitions used in SAKERNAS.

Conceptual Framework

Figure 3 presents the conceptual framework of the study, in which youth NEET status is modeled as the outcome variable influenced by thirteen explanatory factors. These include

individual sociodemographic characteristics (age, gender, educational attainment, marital status, and disability status), spatial and mobility factors (urban–rural classification and migration status), human capital and experience variables (course participation and prior work experience), and household characteristics (marital status and educational attainment of the household head, and access to information technology). In addition, participation in government assistance programs is incorporated to capture the role of policy interventions. Collectively, these variables are hypothesized to shape the likelihood of youth being not in employment, education, or training, reflecting the multidimensional nature of NEET status within the Indonesian context.
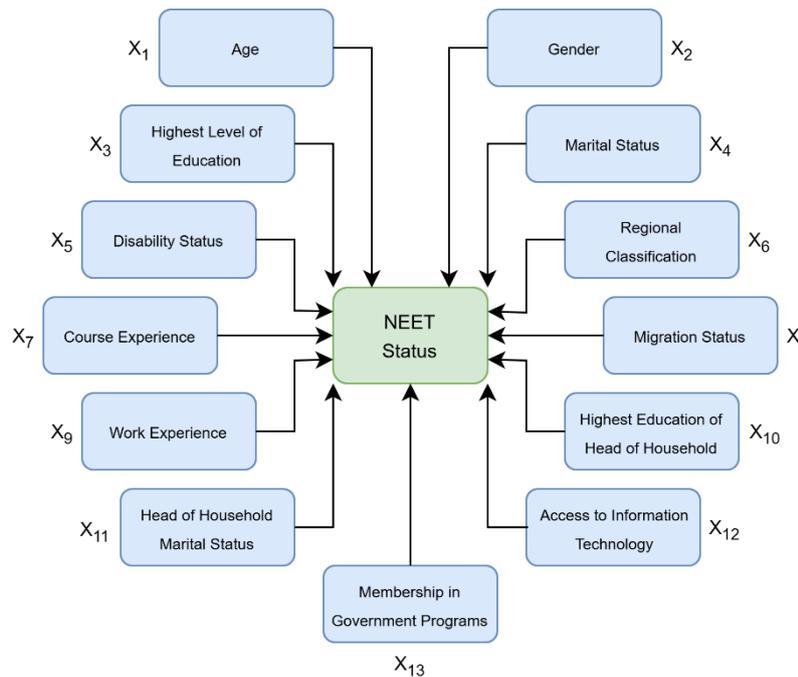

Figure 3. Conceptual framework of the study.

Method

Data analysis consisted of both descriptive and inferential approaches. Descriptive statistics were used to summarize the distribution and characteristics of the study variables.

To assess the determinants of NEET status, a binary logistic regression model was employed, given the dichotomous nature of the dependent variable. The model estimated the probability of an individual being NEET as a function of the selected independent variables, with results interpreted using odds ratios (ORs) and corresponding significance levels. The logistic regression model is specified as:

$$Y = ln\left(\frac{p}{1-p}\right) = \beta_0 + \sum_{i=1}^{n}\beta_1 X_1 + \sum_{i=1}^{n}\beta_2 X_2 + \cdots + \sum_{i=1}^{n}\beta_{13}X_{13} + \varepsilon \tag{1}$$

Where Y is a dummy dependent variable representing NEET status. Y equals 0 if a young individual is not NEET and equals 1 if the individual is NEET. $\left(\frac{p}{1-p}\right)$ represents the odds of a young individual being NEET, β_0 is the constant term, $\beta_1, \beta_2,..., \beta_{13}$ is are the coefficients measuring the effect of each independent variable on the log-odds of being NEET, and ε is the error term.

Model adequacy and statistical significance were evaluated using the (1) likelihood ratio (Omnibus) test to assess overall model significance and (2) Wald tests to evaluate the individual effects of independent variables, along with goodness-of-fit measures including the Hosmer–

Lemeshow test, Nagelkerke pseudo R^2, and classification accuracy. A significance level of $\alpha = 0.05$ was applied throughout the analysis.

Results and Discussion

Descriptive Statistics

Based on Table 2, the sample consists of 158,816 Indonesian youths aged 15–24 years. The majority of respondents are aged 15–19 years (58.2%), while 41.8% fall within the 20–24 age group, indicating that the sample is dominated by younger youth cohorts. In terms of gender composition, males slightly outnumber females, accounting for 52.9% of the sample compared with 48.1% for females. Regarding educational attainment, 54.9% of respondents have an education level other than senior high school or its equivalent, while 45.1% have completed senior high school or equivalent, suggesting that a substantial share of youths has not yet attained upper secondary education.

Marital status is largely dominated by never-married individuals (89.2%), with only 10.8% reported as married. With respect to disability status, the vast majority of respondents are non-disabled (98.9%), while only 1.1% are persons with disabilities. In terms of regional classification, 49.1% of respondents reside in urban areas and 50.9% in rural areas, indicating a relatively balanced geographic distribution. Participation in courses or training programs is limited, as only 13.2% of respondents report having attended any courses, while 86.8% have not. Migration status shows that most respondents are non-migrants (96.4%), with migrants accounting for only 3.6% of the sample.

Table 2. Descriptive statistics.

| Variable Name	Category	Frequency	Percentage
Age	20-24 years old	66,454	41.8
	5-19 years old	92,362	58.2
Gender	Female	76,419	48.1
	Male	82,397	52.9
Highest level of education	High school or equivalent	71,570	45.1
	Other than high school or equivalent	87,246	54.9
Marital status	Married	17,168	10.8
	Never married	141,648	89.2
Disability status	Disabled	1,677	1.1
	Non-disabled	157,139	98.9
Regional classification	Urban	77,910	49.1
	Rural	80,906	50.9
Course experience	Yes	20,952	13.2
	No	137,864	86.8
Migration status	Migrant	5,752	3,6
	Mon-migrant	153,064	96.4
Work experience	Yes	67,090	42.2
	No	91,726	57.8
Highest level of education KRT	High school or equivalent	59,817	37.7
	Other than high school or equivalent	98,999	62.3
KRT marital status	Married	155,900	98.2
	Never married	2,916	1.8
Access to information technology	Yes	28,474	17.9
	No	130,342	81.1
Membership in government programs	Yes	2,818	1.8
	No	155,998	98.2
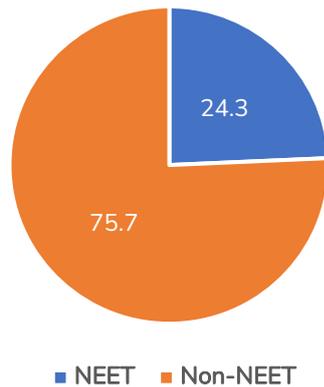
Figure 4. Proportion of NEET and non-NEET youth (percent).

Regarding work experience, 42.2% of respondents report having prior work experience, whereas 57.8% do not. Characteristics of household heads indicate that most respondents come from households where the head has an education level other than senior high school or equivalent (62.3%), while 37.7% have household heads who completed senior high school or higher. The marital status of household heads is overwhelmingly dominated by those who are married (98.2%), with only 1.8% never married. Access to information technology remains limited, as 81.1% of respondents do not have access, compared with 17.9% who do. Finally, participation in government programs is very low, with 98.2% of respondents not enrolled in any government program and only 1.8% recorded as participants.

Overall, the distribution of respondent characteristics indicates that most Indonesian youths in the sample are in their late productive years and are unmarried. The majority come from families with low educational attainment, reside in rural areas, and lack both work experience and training. These conditions are further exacerbated by limited access to information technology and very low participation in government programs, increasing vulnerability to NEET status. As shown in Figure 4, 38,648 respondents (24.3%) are classified as NEET, while 120,168 respondents (75.7%) fall into the non-NEET category. This proportion suggests that nearly one in four Indonesian youths are in a condition that may heighten the risk of social and economic marginalization, underscoring the need for focused policy attention in employment, education, and training.

Binary Logistic Regression

Individual Parameter Significance with Wald test

Based on the test results presented in Table 3, the Wald test from the logistic regression analysis was used to determine the significance of each independent variable on NEET status by interpreting the p-values relative to the significance level ($\alpha = 0.05$). Variables with p-values below 0.05 are considered to have a statistically significant effect on the dependent variable, whereas variables with p-values equal to or greater than 0.05 are deemed insignificant. The results indicate that age, sex, educational attainment, marital status, disability status, area of residence, training experience, work experience, the educational attainment of the household head, the marital status of the household head, access to information technology, and participation in government programs all have p-values below 0.05, demonstrating significant partial effects on NEET status.

In contrast, migration status has a p-value greater than 0.05 (0.419), indicating that it does not have a statistically significant effect on NEET status. Overall, the partial significance tests show that nearly all independent variables examined are significant determinants of NEET status, with the exception of migration status. This suggests that migration status does not play a decisive

role in explaining differences in youths' likelihood of being NEET, whereas the remaining variables contribute more substantially to shaping this outcome.

Table 3. Results of model parameter estimation.

Variable Name	Variable Symbol	Coef.	Std. Er.	Wald	P-Value
Age	X1	-0.698***	0.016	1,798.805	0.000
Gender	X2	-0.075***	0.014	30.159	0.000
Highest level of education	X3	-1.609***	0.016	9,863.647	0.000
Marital status	X4	-1.461***	0.022	4,540.128	0.000
Disability status	X5	-1.690***	0.055	946.770	0.000
Regional classification	X6	0.246***	0.014	301.234	0.000
Course experience	X7	0.249***	0.021	139.521	0.000
Migration status	X8	0.030	0.037	0.654	0.419
Work experience	X9	-0.781***	0.016	2,265.048	0.000
Highest education of head of household	X10	0.686***	0.015	2,007.633	0.000
Head of household marital status	X11	-0.568***	0.058	96.180	0.000
Access to information technology	X12	2.325***	0.028	6,708.568	0.000
Membership in government programs	X13	-0.179***	0.050	12.796	0.000
Intercept	C	0.621***	0.086	51.797	0.000

Note: *** indicates significance at the 1% level.

Simultaneous Significance Using The Likelihood Ratio Test

This test was conducted to examine the simultaneous (overall) effect of the independent variables in the model using the G test, also known as the likelihood ratio test, with the rejection criteria of p-value < α or G > $X^2_{(13;0.05)}$. The results presented in Table 4 show that the likelihood ratio test yields a G statistic of 36,515.11, which exceeds the critical value of $X^2_{(13;0.05)}$=22.36. In addition, the obtained p-value is 0.000, which is lower than the significance level of α = 0.05. Based on these results, it can be concluded that, simultaneously, at least one independent variable has a significant effect on the dependent variable.

Table 4. Results of Omnibus test.

Model	Chi-square	Prob.
1	36515.11	0.0000

Model Goodness-of-Fit Test

This test aims to assess the adequacy of the estimated model. One commonly used method to evaluate model fit is the Hosmer–Lemeshow test, with the rejection criterion defined as a p-value < α.

Hypotheses:
- $H_0 : \pi_k = \pi_{k0}$ (the model fits the data)
- $H_1 : \pi_k \neq \pi_{k0}$ (the model does not fit the data)

As shown in Table 4, The test yields a Hosmer–Lemeshow statistic of 1853.75 and a chi-square critical value of $X^2_{(13;0.05)}$=15.51, with a p-value of 0.000. Based on these results, the null hypothesis is rejected. Statistically, this indicates that the logistic regression model does not exhibit a good fit to the data.

Table 5. Results of Hosmer–Lemeshow test.

Model	Chi-square	Prob.
1	1853.75	0.0000

Interpretation of the Binary Logistic Regression Model

One common approach to interpreting a binary logistic regression model is through the odds ratio (OR). The OR is obtained by exponentiating the logistic regression coefficient (Exp(β)). It represents the relative odds of a young individual being in NEET status for a given category of an explanatory variable compared with its reference category, holding other variables constant. An OR greater than 1 indicates an increased likelihood of being NEET, whereas an OR less than 1 indicates a reduced likelihood.

Table 6. Odds ratio values of determinants of youth NEET status in Indonesia.

Variable Name	Category	Odds Ratio
Age	20-24 vs 15-19 years old	0.498
Gender	Female vs male	0.927
Highest level of education	High school vs other than high school	0.200
Marital status	Married vs never married	0.232
Disability status	Disabled vs non-disabled	0.185
Regional classification	Urban vs rural	1.279
Course experience	Yes vs no	1.282
Migration status	Migrant vs non-migrant	1.031
Work experience	Yes vs no	0.458
Highest education of head of household	High school vs other than high school	1.987
Head of household marital status	Married vs never married	0.566
Access to information technology	Yes vs no	10.223
Membership in government programs	Yes vs no	0.836

As seen in Table 6, the age variable shows that youth aged 20–24 have an odds ratio of 0.498, meaning that individuals in this age group are about 0.5 times less likely to be NEET than those aged 15–19. This suggests that as youth grow older, they tend to be better prepared to enter the labor market or continue to higher levels of education. This finding is consistent with Sari & Ahmad [19], who argue that early-stage youth are still in a transitional phase and are therefore more vulnerable to economic inactivity. Similarly, Febria et al. [36] report that the risk of NEET declines with age.

The gender variable indicates that female youth have an odds ratio of 0.927, implying a lower likelihood of being NEET compared with male youth. This result reflects gender-based differences in youth participation in education and employment. Mascherini [42] document gender divergence in early labor market and educational pathways, showing that young men may face heightened vulnerability during the school-to-work transition. Although descriptive statistics often report higher NEET rates among women due to caregiving responsibilities, Fakih et al. [38] emphasize that social factors and labor market structures also play a critical role in shaping gender disparities in employment outcomes.

Educational attainment is a highly significant determinant of NEET status. Youth with education at or above senior high school (≥ SMA) have an odds ratio of 0.200, indicating an 80 percent lower likelihood of being NEET compared with those with education below senior high school. This underscores the central role of education as a key form of human capital in improving employment prospects and continued educational participation. This finding aligns with Becker's [43] human capital theory, which posits that investment in education enhances productivity and employability. It is also consistent with empirical evidence from Buchmann & Hannum [44] and Citra [33], who find that lower educational attainment substantially increases NEET risk.

Marital status also shows a significant effect. Youth who have ever been married have an odds ratio of 0.232, indicating a lower likelihood of being NEET than those who have never married. This suggests that increased economic responsibilities following marriage may encourage greater labor market participation. Similar conclusions are reported by Fabrizi & Rocca [45] and

Sari & Ahmad [19], who find that married youth are more likely to engage in economic activities to support household needs.

Disability status yields an odds ratio of 0.185, reflecting the structural barriers faced by youth with disabilities in accessing education and employment opportunities. This finding is consistent with Citra [33], who documents significant labor market constraints for youth with disabilities, and with Febria et al. [36], who highlight physical and social limitations as important contributors to NEET status.

The regional classification variable indicates that youth residing in urban areas have an odds ratio of 1.279, meaning they are more likely to be NEET than those living in rural areas. This result may reflect intense labor market competition and skill mismatches in urban settings. It is in line with Pattinasarany [34], who notes that urban youth face stronger competitive pressures, and with Azmi et al. [46], who identify systematic differences in youth labor market participation between urban and rural regions.

Participation in training or courses is associated with an odds ratio of 1.282, suggesting that youth who have attended training are more likely to be NEET. This implies that existing training programs may not be sufficiently aligned with labor market needs. Similar conclusions are drawn by Anggraeni et al. [47] who find that skills training lacking direct relevance to industry demand is less effective in reducing NEET status.

Migration status has an odds ratio of 1.031 and is not statistically significant, indicating that migration does not have a meaningful effect on the likelihood of youth becoming NEET. This finding supports the results of Sari & Ahmad [19], who argue that geographic mobility is not a key determinant of NEET status in Indonesia.

Work experience emerges as a protective factor, with an odds ratio of 0.458. Youth with prior work experience are less likely to be NEET, highlighting the importance of early labor market exposure in maintaining economic attachment. This finding is consistent with Febria et al. [36] and Verd et al. [39], who emphasize the role of work experience in strengthening youth employment trajectories.

The education level of the household head (KRT) shows an odds ratio of 1.987, indicating that youth from households with heads educated at or above senior high school are more likely to be NEET. This may reflect the availability of family economic support, allowing youth to delay labor market entry while searching for more suitable opportunities. This interpretation aligns with Gozun & Rivera [48], who find that family educational background influences youth economic decisions.

The marital status of the household head has an odds ratio of 0.566, suggesting that youth from households with ever-married heads are less likely to be NEET. This indicates that household stability may play a role in encouraging youth participation in education and employment, consistent with Fabrizi & Rocca [45].

Access to information technology exhibits the highest odds ratio, at 10.223, indicating that youth with access to information technology are substantially more likely to be NEET. This finding suggests that digital access alone does not guarantee productive engagement and may even facilitate inactivity in the absence of adequate digital skills and labor market linkages. This result is consistent with the digital divide literature by Riggins & Dewan [49] and with findings from Puspitaningrum [50], which emphasize the importance of digital literacy for productive technology use.

Finally, participation in government programs has an odds ratio of 0.836, indicating that youth involved in government programs are less likely to be NEET. This suggests that public interventions play a modest but positive role in reducing NEET risk. Similar evidence is reported

by Febria et al. [36] and Anggraeni et al. [47], who find that training and employment assistance programs can enhance youth participation in the labor market.

Conclusions

This study provides empirical evidence on the sociodemographic determinants of youth NEET (Not in Employment, Education, or Training) status in Indonesia using nationally representative SAKERNAS 2023 microdata. The findings indicate that NEET remains a serious challenge, affecting 24.3% of Indonesian youth aged 15–24. Binary logistic regression results show that individual characteristics such as older age, higher educational attainment, marital status, and prior work experience significantly reduce the likelihood of being NEET, underscoring the central role of human capital accumulation and early labor market exposure in facilitating successful school-to-work transitions.

Conversely, several contextual and household-related factors increase NEET risk. Urban residence, higher educational attainment of the household head, and especially access to information technology are associated with higher odds of NEET, suggesting that access to resources alone does not guarantee productive engagement without adequate skills and labor market linkages. Migration status is found to be insignificant, indicating that geographic mobility alone does not explain youth disengagement in Indonesia. Overall, the results confirm that NEET is a multidimensional phenomenon shaped by the interaction of individual, household, and regional factors, highlighting the need for integrated and targeted policies that emphasize education quality, early work experience, productive digital literacy, and region-specific youth employment strategies.

Based on the findings, policy interventions to reduce youth NEET in Indonesia should be targeted, integrated, and demand-oriented. First, education policy should prioritize completion and quality at the senior secondary level by expanding conditional cash transfers and academic support for at-risk youth aged 15–19 to prevent early disengagement. Second, early labor market exposure must be strengthened through mandatory school-to-work transition programs, such as paid apprenticeships, internships, and industry-linked vocational placements, particularly for youth with no prior work experience. Third, training and upskilling programs should be restructured to align strictly with local labor market demand, with certification tied to employer needs and performance-based evaluation of training providers. Fourth, digital access policies should shift from hardware provision to productive digital literacy, emphasizing job-search skills, platform-based work readiness, and digital entrepreneurship, especially in urban areas where NEET risk is higher. Finally, government employment and social assistance programs should be expanded and better targeted toward vulnerable youth, including those from low-educated households and rural regions, with integrated monitoring to ensure that participation translates into employment or continued education rather than prolonged inactivity.

Despite its contributions, this study has several limitations that suggest directions for future research. First, the analysis focuses on Indonesia at the national level, which may mask substantial regional heterogeneity. Future studies could employ multi-province or regional-level data to capture spatial variations in NEET determinants across Indonesia. Second, the use of cross-sectional data limits the ability to assess dynamic relationships and causal trajectories. Future research could incorporate time-series information and adopt a panel data framework to examine changes over time more rigorously. Third, the study relies on a single wave of SAKERNAS data. Subsequent studies should utilize more recent SAKERNAS releases as they become available to assess the robustness and temporal stability of the findings.

Data Availability Statement: The data are available from the official Statistics Indonesia website.

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