

Research Article

Predictors of Reluctant Youth NEET in Chile: Evidence from the 2022 National Socioeconomic Characterization Survey

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Abstract

Background: Young individuals “not in employment, education, or training” (NEET) face a high risk of labour or social marginalization globally. Understanding the individual and family factors associated with reluctant NEETs status could address the discouragement and marginalization among young people. **Method:** This study focused on inactive NEETs-not actively seeking work- particularly those who refuse work even when offered, called “reluctant” NEETs. From a gender perspective, the individual and household predictors of reluctant NEET among Chilean youth aged 20-29 from a national 2022 Chilean data were examined. Multivariable logistic regression was used to identify relevant individual and household predictors of reluctant NEET status, and the average marginal effects were used to compute predicted probabilities. **Results:** In the sample, 23.1% of Chilean youths aged 20-29 were NEETs, with a majority being women. Of them, 38.1% were reluctant NEETs, affecting notably women, and this rate decreased with age, particularly in men, and the gender gap widened further after 25. Individual factors like lower education, marital status, pregnancy, mental issues, disabilities and household factors such as unoccupied or inactive family members, single-parent homes, living with older persons and social transfers are significantly associated with reluctant NEET status in Chilean youth aged 20-29. **Conclusions:** This study highlights the need to monitor individual and social exclusion risk factors among NEET youth, particularly in countries where youth social exclusion may be associated with violence and criminality.

Keywords

NEET, Youth, Labour Market, Social Marginalization, Gender, Chile

1. Introduction

The shift towards green and digital economies in the coming decade will profoundly impact the labour market and reshape modern societies. Modern economies rely on skilled workers, who benefit from expanded education opportunities and improved employment prospects due to the increasing demand for skills [1]. In contrast, workers with lower educa-

tion qualifications, especially young people, experience more job instability and struggle in the labour market, earning less and facing a greater risk of unemployment. Automation will likely exacerbate this issue in the next decade [2].

Ensuring a smooth transition from education to the labour market is vital for young people. Prolonged unemployment or

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inactivity after school can have lasting effects, discouraging seeking work and increasing the risk of socio-economic exclusion [1, 3]. Policies are essential in preventing youth from becoming NEET and assisting those who need support in education or finding work [4].

NEET, an acronym for “not in employment, education, or training,” originated in the United Kingdom (UK) in the late 1980s. The term was officially introduced in 1999 in the UK through the government’s Bridging the Gap: New Opportunities for 16-18-year-olds not in education, employment, or training report [5]. In Latin America Spanish-speaking countries, the equivalent term for NEET is “Ninis,” (“ni estudia ni trabaja”), while in Brazil, they are known as the “nem-nem” generation (geração “não estudam e nem trabalham”) [6].

The NEET concept includes many groups: unemployed, sick or disabled, inactive young people who do home or care work, and young people engaging in non-detrimental activities regarding future labour market integration [7]. The definition and measurement of youth NEET varies among countries. Intergovernmental organizations and national statistical offices use the NEET rate to gauge youth indicators. The NEET rate reflects the percentage of NEET youth compared to the total youth in specific age and gender groups. The age range varies, with the Organization for Economic Cooperation and Development (OECD) and International Labour Office (ILO) focusing on 15 to 29-year-olds, while Eurostat, Japan, and Korea include 15 to 34-year-olds due to differences in compulsory education or training years [7-9]. The OECD has published the NEET indicator since the late 1990s to identify economically and socially vulnerable youth [10, 11].

Long-term NEET status has detrimental effects on a country’s economy. It results in reduced productivity and economic output, increased reliance on welfare subsidies and additional expenses in healthcare and criminal justice [12]. The NEET phenomenon is not only an economic issue but also a social concern, as it leads to unproductivity, limited human capital development, and the accumulation of disadvantages that can predict long-term unemployment and mental health problems [13]. Prolonged NEET status further exacerbates issues such as isolation, low-wage employment, criminality, and instability in personal relationships [14].

The NEET concept has been widely debated in the sociological and economic literature [15-17]. From a sociological perspective, NEETs represent a heterogeneous population with varied life histories and socio-economic resources [18, 19]. New social patterns related to a distinct life-course stage known as emerging adulthood or delayed transitions to adulthood have a crucial impact on the education to labour market transition [20, 21]. While NEETs face vulnerability, predisposing to long-term unemployment and social exclusion, not all are at risk of marginalization, criminal behaviour, or health issues [22-27]. From a socio-economic perspective, the NEET rate is linked to unemployment. During economic crises, lower qualified young people, especially, face high levels of unemployment, increasing the risk of inactivity with

a significant negative impact on countries' economic growth and welfare equilibrium. [22, 26, 28-31].

About the labour market, within the NEET population, there are two sub-categories: the unemployed, who are actively seeking work, and the inactive NEET, who may have dropped out of the labour force or have other reasons for not seeking employment [4, 32]. This category can include young people who are discouraged because they have been unable to find work and have dropped out of the labour force. It can also include individuals who are permanently unable to work, look after family, volunteer, or have arrangements to start a job sometime in the future [32].

Distinguishing between inactive NEETs who do not seek work and those who reject job offers, known as ‘reluctant’ NEETs, is crucial. The latter group's reluctance to work is more of a social problem than an issue in the labour market. Understanding the reasons behind this NEET category in terms of social exclusion is crucial. Furthermore, prolonged inactivity poses a higher risk of socioeconomic marginalization, particularly for disadvantaged youth, leading to psychological issues like low self-esteem, disinterest in work, depression, and isolation. It's important to note that public policies focusing on enhancing work skills and providing more job opportunities can play a significant role in preventing long periods of inactivity and subsequent social exclusion for NEETs.

As of 2022, Chile ranks fourth and second among OECD countries for NEET rates in the 18-24 (26.1%) and 25-29 (38.1%) age groups, respectively, higher than the OECD average [4]. According to 2022 National Socioeconomic Characterization Survey data (2022-NSECS), Chile had 709,864 NEET individuals (17% of the population aged 15-29), with 62% being women. Excluding NEETs aged 15-19, 23.1% of young people aged 20-29 are NEETs, with variations seen by age and gender. The NEET rate is 20.4% for those aged 20-24 and 25.4% for those aged 25-29. The gender gap in NEET rates widens with age, with women experiencing higher rates [33]. In the 20-29 NEET sample, 61.2% were considered inactive NEET; of them, 59.8% correspond to reluctant NEET.

This study, in a post-pandemic scenario, aims to examine the individual and household predictors of reluctant NEET in people aged 20 to 29 in Chile. It does so from a gender perspective, recognizing the challenges and experiences of different genders in the NEET category. The study hopes to contribute to a better understanding of the determinants of this category of NEET.

2. Method

The study analyzed the association between a set of individuals and household factors and ‘reluctant’ NEET status from a gender perspective. To identify relevant individual and household predictors, multivariable logistic regressions were used.

2.1. Study Population and Data Collection

This study is based on the Chilean 2022-NSECS conducted by the Ministry of Social Development and Family (MSDF) in partnership with the National Institute of Statistics (NIS). It is a representative household survey conducted every two years and provides insights into poverty, education, health, housing, work, and income at a national, regional, and rural/urban level. Units of analysis are people and households. The survey used a new housing sampling frame based on the 2017 Census, employed a probabilistic, stratified and two-stage design, where primary sampling units are conglomerates of homes, and the final selection unit is the home, and updated expansion factors using a Raking method. Trained teams conducted face-to-face interviews using smartphones and the Survey Solutions software. Seventy-two thousand fifty-six households and 202,231 individuals were interviewed; the response rate was 68.7%. The survey offers public access to its databases [34, 35]. The data used in this study includes observations from 6,595 young NEETs aged 20-29.

2.2. Measures

2.2.1. Outcome Variable

The outcome variable corresponds to young people aged 20-29 categorized as "reluctant" NEETs. Reluctant NEETs are young NEET people who, if offered a job, are unwilling to start working (question o5).

From the data, the NEET variable was created based on two factors: not attending school in 2022 (question e3) and not working for at least one hour in the past week (question o1). It's important to note that students preparing for entrance tests or attending pre-university courses were excluded, as well as those not working but engaged in other activities for at least 1-hour in the past week, or not actively seeking employment due to studying or having another source of income. The analysis was conducted with utmost thoroughness, categorizing the reluctant NEETs into a binary variable (1=reluctant NEETs, 0= non-reluctant NEETs).

2.2.2. Covariates

The CASEN-2022 questionnaire and additional data elaborated from the survey by MSDF and the Economic Commission for Latin America (ECLA) provided data to identify predictors and potential confounders associated with the outcome variable. This collaborative effort with MSDF and ECLA was instrumental in our research.

Directly from the questionnaire, data on age, sex, residence area, marital status, mental health, disability, pregnancy, number of children, economic dependency and three or more years passed without studying were collected. MSDF contributed with additional variables on native ethnicity, household structure, household size, number of persons aged 60 or

more in the home, educational attainment, 5D-multidimensional poverty, total household monetary subsidies, number of unoccupied-not having a job but actively looking for work-- and inactive-unemployed that they did not seek work, but would be willing to accept a job if it were offered to them- people in the home; in these covariates, indoor domestic service was excluded. ECLA contributed a variable to the corrected total household income used to calculate deciles.

Additionally, we used reliable data from other official sources, including regional aggregated data for the year 2022 on school dropout rate, university enrollment, unemployment rate, and informal employment rate. This data, obtained from the Ministry of Education and the NIS, was crucial in adjusting our models and ensuring the accuracy and trustworthiness of our analysis.

In our analysis, marital status (single=1; union/married=0), psychiatric or mental difficulty (difficulty=1; no-difficulty=0), disability (disability=1; no-disability=0), pregnancy (pregnant=1; no pregnant=0), economic dependency (dependent=1; no-dependent=0), three or more years without studying (three or more=1; less than three=0), presence of people aged 60 or over in the home (yes=1; non=0), household structure(single parent=1; two parent=0), belonging to native people(yes=1; non=0), and 5D-multidimensional poverty(5D-poor=1; 5D no-poor=0) were included as dichotomous variables.

Educational attainment, the number of unoccupied and inactive people at home, and households receiving monetary subsidies from the state were included as categorical variables. Schooling was categorized into four groups based on the highest level of achievement. Inactive people were categorized into four groups based on the number of inactive people in the home. Unoccupied people were categorized into three groups based on the number of unoccupied people in the home. The households receiving social transfers were categorized into three groups based on the proportion of total household income.

Age, the number of children, the number of people in the household, corrected total household income deciles, schooling dropout rate, 2018 university student cohort graduates in 2022, unemployment rate, informal employment rate, and survey weight were included as discrete variables.

2.2.3. Statistical Analyses

Descriptive statistics were performed to provide a profile of the sample's socio-demographic and household characteristics according to reluctant NEET status in the 20-29 age range.

Before the regression analysis, the variables' multicollinearity was rigorously examined using correlation matrices and the variance inflation factor (VIF). This meticulous approach ensures the robustness of our findings, particularly in weaker models where VIF values greater than 2.5 may be a cause for concern [36].

A multivariable logistic regression was used to identify relevant individual and household predictors of reluctant

NEET status. Separate logistic regression models were run for women and men. In the women's models, the pregnancy covariate was included. The odds ratio (OR) was estimated with adjusted models, with their respective confidence intervals (95% C.I.). The goodness of fit of the models was evaluated with the Hosmer-Lemeshow test. Also, the area under the curve was used to examine the model's predictive ability.

With the *margins* command, the average marginal effects (AMEs) and marginal effects at representative values (MERs) were computed using the default *asobserved* option. AMEs compute predicted probabilities by averaging predicted values for actual observed values for specific variables and fixed values for others. MERs compute marginal effects estimating interaction terms for relevant predictors over a range of values [37]. As estimated marginal effects in all relevant predictors of being reluctant NEETs differ by age in both sexes, age levels -20,24 and 29- based on the transition ages to school to labour market landmark were chosen. These age values represent the landmark of the transition from school to the labour market age.

Statistical analyses were performed using STATA version 14.0 (Stata Corp, TX, USA). The statistical significance was tested using Wald's chi-square statistic for categorical variables and t-test for discrete variables, and a significance level of 5% in the test was accepted.

3. Results

In the 2022-NSECS, among 6,595 young individuals aged 20-29, a concerning trend was observed: 23.1% were NEETs. This rate is not only increasing, but the gender gap is also widening with age. Women had higher NEET rates than men, and of all NEETs, 38.1% were reluctant NEETs. This rate decreased with age, particularly in men, and the gender gap widened further after 25. These findings underscore the urgent need to address the issue of youth disengagement.

Individual factors such as gender, marital status, psychiatric/mental difficulties, disability, number of children, pregnancy, economic dependency, urban residence, educational attainment and three or more years passed without studying are significantly associated with a likelihood of being reluctant NEETs.

In turn, household-familiar factors such as the number of people in the home, single-parent homes, experiencing 5D-multidimensional poverty, and the number of unoccupied or inactive people in the home and receiving social transfers are significantly associated with a likelihood of being reluctant NEETs. Table 1 provides further socio-demographic details of the study sample according to reluctant NEET status. Missing data for reluctant NEETs (n: 466) explain differences with total NEETs account.

Table 1. Socio-demographic characteristics of the raw sample according Reluctant NEETs status 2022-NSECS.

Characteristics	NEETs status	
	Reluctant (n: 2,514)	Non Reluctant (n: 3,615)
Age (avg(years), SD) n.s.	24.7 (2.88)	24.6 (2.79)
Women (% women)**	71.4%	56.3%
single marital status **	60.3%	69.8%
Belong to native people n.s.	18.0%	16.5%
Psychiatric/mental impairment **	9.0%	2.8%
Disability **	14.6%	6.8%
Number of children (avg, SD) **	1.6 (0.78)	1.4 (0.63)
Pregnancy **	20.5%	11.7%
Economic dependency **	85.9%	80.3%
urban residence **	76.3%	82.6%
Educational attainment **		
primary school	14.4%	6.1%
scientific-humanistic highschool	46.2%	41.9%
technical highschool	14.8%	16.7%
higher-level technicians	11.8%	14.9%
graduates/postgraduates. (Ref.)	12.8%	20.4%

Characteristics	NEETs status	
	Reluctant (n: 2,514)	Non Reluctant (n: 3,615)
No study for over 3 years *	75.4%	72.1%
N °of people in the household (avg, SD)**	4.0 (1.63)	4.2 (1.62)
Single-parent home *	32.8%	36.1%
People aged 60 or over in household n.s.	28.0%	30.0%
Deciles of household income (avg, SD) n.s.	3.3 (2.03)	3.6 (2.20)
5D-multidimensional poverty **	28.0%	34.7%
Number of unoccupied people in the home **		
no one unoccupied. (Ref.)	86.7%	40.1%
only one unoccupied.	11.4%	46.9%
two or more unoccupied.	1.9%	13.0%
Number of inactive people in the home **		
no one inactive. (Ref.)	1.6%	24.6%
only one inactive.	44.7%	39.3%
two inactive.	28.5%	22.7%
three or more inactive.	25.2%	13.4%
Household get social transfers **		
no receive social transfers (Ref.)	33.5%	36.6%
receive up to 10% of household income	30.5%	37.2%
receive more than 10% of household income	36.0%	26.2%
Regional school dropout rate (avg, SD) **	1.42 (0.42)	1.50 (0.43)
Regional graduated rate (avg, SD) **	0.21 (0.03)	0.21 (0.03)
Regional unemployment rate (avg, SD) *	7.8 (1.33)	7.7 (1.33)
Regional informal employment rate(avg, SD) **	29.6 (4.77)	29.2 (4.72)

3.1. Model Goodness of Fit Statistics

Before model analysis, we evaluated multicollinearity, finding moderate associations ($r < .40$) between certain categorical variables. The variance inflation factor values were low ($VIF < 2.2$), indicating no multicollinearity in both women's and men's models. The goodness-of-fit tests confirmed the significance and adequacy of our models. The model accurately predicted data for women, with a Hosmer-Lemeshow equal to .112. The logistic regression model, a significant component of our analysis, was highly significant, with an area under the ROC curve of .733. The men's model also demonstrated strong predictive accuracy, with a Hosmer-Lemeshow test equal to .663. The logistic regression model was highly significant, with an area under the ROC curve of .774. Both models exhibited good predictive power,

with the men's model in particular demonstrating strong predictive accuracy. In summary, both models explained a significant portion of the variance in the dependent variable (pseudo $R^2 = .19$ for the women's model and .25 for the men's model), highlighting the robustness of our analysis.

3.2. Reluctant NEETs Logistic Regression Models

Table 2 displays odds ratios (ORs) from adjusted regression models for reluctant NEETs in both genders. A sample of 4,152 NEET women aged 20-29 showed 43.2% were reluctant NEETs, while 2,443 NEET men in the same age range had 29.5% reluctant NEETs.

Overall, education level, marital status, and other individual factors played a role in predicting reluctance to NEET status for young adults aged 20-29. In the women's model,

pregnancy and primary school level were strong predictors of being reluctant NEETs, while being single, marital status was a significant protector factor. Psychiatric or mental difficulties and high school attainment were marginally strong predictors. Urban residence was also a marginally protective factor. For

men, disability, single marital status, and economic dependency were significant predictors. The primary school level was a strong predictor, while the technical high school was a protector factor.

Table 2. Predictors of reluctant NEETs from Logistic Regression model.

Individual factors	Women LR model		
	O.R. (Std. Err)	[95% C.I.]	p-value
Age	.959 (.034)	(.896 - 1.027)	0.234
Psychiatric/mental impairment	2.075 (.797)	(.977 - 4.407)	0.058
Disability	1.038 (.273)	(.620 - 1.739)	0.887
Single marital status	.700 (.095)	(.536 - .913)	0.008
Belong to native people	.893 (.129)	(.674 - 1.184)	0.432
Economic dependency	1.029 (.163)	(.753 - 1.404)	0.859
Pregnancy	1.640 (.247)	1.221 - 2.202)	0.001
Number of children	1.119 (.109)	(.924 - 1.354)	0.249
Educational attainment			
primary school	2.527 (.716)	(1.450 - 4.404)	0.001
scientific-humanistic highschool	1.372 (.255)	(.952 - 1.976)	0.090
technical highschool	1.100 (.234)	(.723 - 1.666)	0.661
higher-level technicians	1.208 (.239)	(.820 - 1.779)	0.338
No study for over 3 years	.935 (.128)	(.715 - 1.224)	0.627
Urban residence	.789 (.108)	(.605 - 1.031)	0.083
Household factors			
Single-parent home	1.393 (.168)	(1.100 - 1.763)	0.006
Number of people in the household	1.056 (.053)	(.958 - 1.164)	0.274
People aged 60 or over in household	.741 (.099)	(.570 - 0.963)	0.025
Number of unoccupied people in the home			
only one unoccupied.	.249 (.037)	(.186 - .334)	0.001
two or more unoccupied.	.214 (.063)	(.121 - .380)	0.001
Number of inactive people in the home			
only one inactive.	5.244 (1.573)	(2.914 - 9.441)	0.001
two inactive.	6.123 (1.989)	(3.239 - 11.575)	0.001
three or more inactive.	9.226 (3.299)	(4.578 - 18.593)	0.001
Deciles of household income	.955 (.025)	(.906 - 1.005)	0.082
5D-multidimensional poverty	.998 (.129)	(.775 - 1.287)	0.991
Household get social transfers			
up to 10% of household income	.806 (.104)	(.627 - 1.037)	0.094
more than 10% of household income	.807 (.122)	(.599 - 1.085)	0.156

Individual factors	Women LR model		
	O.R. (Std. Err)	[95% C.I.]	p-value
Adjusting covariates			
Regional unemployment rate	1,068	(.939 - 1.214)	0.316
Regional informal employment rate	.980 (.014)	.954 - 1.007)	0.156
Regional school dropout rate	.955 (.147)	(.707 - 1.291)	0.767
Regional graduated rate	.004 (.012)	(8.51e-06 - 1.660)	0.072
Survey weight	1.001 (.001)	(.999 - 1.002)	0.228
Constante	2.196 (24.119)	(.255 - 1.890)	0.474

Individual factors	Men LR model		
	O.R. (Std. Err)	[95% C.I.]	p-value
Age	1.062 (.047)	(.975 - 1.159)	0.167
Psychiatric/mental impairment	.931 (.359)	(.437 - 1.981)	0.852
Disability	2.769 (.837)	(1.531 - 5.007)	0.001
Single marital status	2.147 (.656)	(1.180 - 3.907)	0.012
Belong to native people	1.049 (.198)	(.725 - 1.518)	0.799
Economic dependency	1.700 (.366)	(1.115 - 2.952)	0.014
Pregnancy	-	-	-
Number of children	.858 (.197)	(.547 - 1.347)	0.507
Educational attainment			
primary school	2.093 (.701)	(1.086 - 4.034)	0.027
scientific-humanistic highschool	.861 (.210)	(.533 - 1.388)	0.538
technical highschool	.541 (.147)	(.318 - .920)	0.023
higher-level technicians	.688 (.207)	(.382 - 1.240)	0.213
No study for over 3 years	1.287 (.230)	(.906 - 1.828)	0.159
Urban residence	.767 (.142)	(.534 - 1.102)	0.151
Household factors			
Single-parent home	1.253 (.189)	(.932 - 1.683)	0.151
Number of people in the household	1.045 (.062)	(.929 - 1.175)	0.463
People aged 60 or over in household	.666 (.106)	(.487 - 0.910)	0.011
Number of unoccupied people in the home			
only one unoccupied.	.191 (.036)	(.132 - .275)	0.001
two or more unoccupied.	.124 (.047)	(.059 - .259)	0.001
Number of inactive people in the home			
only one inactive.	2.569 (.992)	(1.205 - 5.475)	0.015
two inactive.	3.457 (1.398)	(1.564 - 7.638)	0.002
three or more inactive.	4.291 (1.878)	(1.821 - 10.116)	0.001

Individual factors	Men LR model		
	O.R. (Std. Err)	[95% C.I.]	p-value
Deciles of household income	.972 (.031)	(.914 - 1.034)	0.374
5D-multidimensional poverty	.724 (.126)	(.515 - 1.019)	0.064
Household get social transfers up to 10% of household income	.620 (.119)	(.426 - .903)	0.013
more than 10% of household income	1.169 (.230)	(.796 - 1.719)	0.426
Adjusting covariates			
Regional unemployment rate	.973 (.058)	(.865 - 1.093)	0.641
Regional informal employment rate	1.014 (.018)	(.980 - 1.049)	0.416
Regional school dropout rate	2.527 (.864)	(1.292 - 4.940)	0.007
Regional graduated rate	.011 (.052)	(1.73e-06 - 78.285)	0.322
Survey weight	.997 (.002)	(.994 - 1.000)	0.067
Constante	.002 (.003)	(.0001 - .035)	0.000

L.R.: Logistic Regression. O.R.: Odd Ratio; Std. Err: Standard Error. C.I.: Confidence Interval

Household factors play a significant role in determining the likelihood of young adults being reluctant NEETs. Having inactive individuals in the home is a strong predictor of being a reluctant NEET among young adults, particularly for young women. Conversely, having unoccupied individuals at home decreases the risk of NEET reluctance among young adults, particularly young men. Single-parent households increase the risk of being reluctant NEETs among young adults in both genders; however, it was significant only in women. The presence of persons aged 60 or above decreases the risk of reluctance among young adults. Receiving up to 10% of household income as social transfers further reduces the likelihood of reluctance among young adults, particularly young men.

3.3. Average Marginal Effects (AMEs)

Table 3 presents the marginal effects of significant independent variables in women's and men's models. It demonstrates how the predicted probability of being a reluctant NEET changes when these variables shift from the reference category to the interest category while controlling for the other variables. Gender differences are evident in the marginal effects of covariates. Notably, for women, all covariates saw a decrease in average marginal effects as age increased from 20 to 29 years, while the opposite was observed for men (data not shown).

Table 3. Predicted probability of being reluctant NEETs for relevant covariates.

MARGINAL EFFECTS FOR RELEVANT FACTORS TO PREDICT RELUCTANT NEETs BY SEX IN YOUTH 20-29				
Individual factors	WOMEN			
	dy/dx	Std. Err.	95%I.C.	p-value
Single marital status	-.0681	.0259	(-.1189 - -.0174)	0.008
Psychiatric/mental impairment	.1362	.0692	(.0006 - .2718)	0.049
Disability	-	-	-	-
Pregnancy	.0945	.0287	(.0383 - .1507)	0.001
Economic dependency	-	-	-	-
Urban residence	-.0447	.0257	(-.0951 - .0057)	0.082

MARGINAL EFFECTS FOR RELEVANT FACTORS TO PREDICT RELUCTANT NEETs BY SEX IN YOUTH 20-29

Individual factors	WOMEN			
	dy/dx	Std. Err.	95%I.C.	p-value
Educational attainment				
primary school	.1760	.0529	(.0723 - .2796)	0.001
scientific-humanistic highschool	.0606	.0357	(-.0093 - .1305)	0.089
technical highschool	-	-	-	-
Household factors				
Single-parent home	.0624	.0224	(.0184 - .1064)	0.005
People aged 60 or over in household	-.0567	.0252	(-.1060 - -.0073)	0.024
Deciles of household income	-.0088	.0050	(-.0186 - .0011)	0.081
5D-multidimensional poverty	-	-	-	-
Number of unoccupied people in the home				
only one unoccupied.	-.2822	.0287	(-.3385 - -.2259)	0.000
two or more unoccupied.	-.3066	.0486	(-.4019 - -.2112)	0.000
Number of inactive people in the home				
only one inactive.	.2789	.0379	(.2047 - .3531)	0.000
two inactive.	.3110	.0435	(.2259 - .3962)	0.000
three or more inactive.	.3967	.0522	(.2944 - .4990)	0.000
Household get social transfers				
up to 10% of household income	-.0407	.0243	(-.0882 - .0069)	0.094

MARGINAL EFFECTS FOR RELEVANT FACTORS TO PREDICT RELUCTANT NEETs BY SEX IN YOUTH 20-29

Individual factors	MEN			
	dy/dx	Std. Err.	95%I.C.	p-value
Single marital status	.1182	.0469	(.0263 - .2102)	0.012
Psychiatric/mental impairment	-	-	-	-
Disability	.1702	.0523	(.0677 - .2726)	0.001
Pregnancy	-	-	-	-
Economic dependency	.0791	.0305	(.0194 - .1389)	0.009
Urban residence	-	-	-	-
Educational attainment				
primary school	.1237	.0561	(.0139 - .2336)	0.027
scientific-humanistic highschool	-	-	-	-
technical highschool	-.0944	.0419	(-.1766 - -.0123)	0.024
Household factors				
Single-parent home	-	-	-	-

MARGINAL EFFECTS FOR RELEVANT FACTORS TO PREDICT RELUCTANT NEETs BY SEX IN YOUTH 20-29

Individual factors	MEN			
	dy/dx	Std. Err.	95%I.C.	p-value
People aged 60 or over in household	-.0620	.0238	(-.1086 - -.0155)	0.009
Deciles of household income	-	-	-	-
5D-multidimensional poverty	-.0493	.0262	(-.1005 - .0020)	0.059
Number of unoccupied people in the home				
only one unoccupied.	-.2772	.0293	(-.3346 - -.2197)	0.000
two or more unoccupied.	-.3207	.0404	(-.3998 - -.2415)	0.000
Number of inactive people in the home				
only one inactive.	.1257	.0441	(.0392 - .2122)	0.004
two inactive.	.1742	.0479	(.0805 - .2679)	0.000
three or more inactive.	.2115	.0553	(.1031 - .3198)	0.000
Household get social transfers				
up to 10% of household income	-.0493	.0251	(-.0985 - -.0003)	0.049

Analysis of individual factors showed that marital status significantly impacts the likelihood of being a reluctant NEET. Single women are 6.8% less likely to be reluctant NEETs than those married or in a union, while single men have an 11.8% higher probability. Psychiatric or mental difficulties increase the likelihood for women by 13.6%, whereas disability increases it by 17.0% for men. Pregnant women are 9.5% more likely to be reluctant NEETs. Economic dependence raises the probability by 7.9% for men, while urban residents have a 4.5% lower probability for women. Education also plays a role, with primary school level increasing the likelihood by 17.6% for women and 12.4% for men. In comparison, men with technical high school levels are 9.4% less likely to be reluctant NEETs than those who graduated.

Regarding household factors, marginal effects show that young women in single-parent homes are 6.2% more likely to be reluctant NEETs than those in two-parent homes. The presence of someone aged 60 or older reduces the likelihood of being a reluctant NEET by 5.7% for women and 6.2% for men. Youth men in 5D-multidimensional poor households have a 4.9% lower likelihood of being reluctant NEETs than non-poor households. Surprisingly, having more unoccupied people at home strongly reduces the likelihood of being a reluctant NEET for both genders. The likelihood of being reluctant NEETs increases strongly with the number of inactive people in the home. Lastly, receiving up to 10% of household income as social transfers decreases the likelihood of being a reluctant NEET by 4.0% for women and 4.9% for men compared to those not receiving social transfers.

3.4. Marginal Effects at Representative Values (MERs)

The percentage variations in the next sections compare the cases without the attributes analyzed and correspond to the average of the selected age groups.

3.4.1. MERs from Women Model

In the logistic regression model for women, the marginal effect for young women was obtained by combining the factors of educational level, pregnancy, psychiatric or mental difficulty, and the number of unoccupied and inactive people in the home.

Table 4 shows the probability of young women being reluctant NEETs based on their lower education attainments and pregnancy status. Overall, the likelihood of being a reluctant NEET decreases with age and increases with primary school attainment, pregnancy, and mental health issues. The strongest predictors of being a reluctant NEET were the number of unoccupied-decreasing- and inactive-increasing- individuals in the household.

Primary school attainment raises the chances of becoming a reluctant NEET by 10% and 13% for non-pregnant and pregnant women compared to high school graduates. Pregnancy increases the likelihood of being a reluctant NEET by 8% and 11% for those with primary and high school education, respectively. Mental health issues increase the probability of being a reluctant NEET by 16% and 17% for pregnant and

non-pregnant women with primary school education and by 13% and 16% for high school graduates, respectively.

The presence of unoccupied family members lowers the chance of being a reluctant NEET. For non-pregnant women, having an unoccupied household member reduces the probability by 13% and 19% for those with high school and primary school education, respectively. Pregnant women see a decrease of 18% and 25% in high school and primary school attainment. Non-pregnant women with mental issues show a 21% and 28%

decrease in high school and primary school education attainments. Pregnant women with mental difficulties experience a decrease of 27% and 32% in high school and primary school attainment. On average, a second unoccupied member lowers the likelihood of being a reluctant NEET by one percentage point for non-pregnant women and around two percentage points for pregnant women with primary school education - with less impact on those with high school education.

Table 4. Predicted probability of women being reluctant NEETs for some representative values.

MARGINAL EFFECTS FOR REPRESENTATIVES PREDICTORS OF BEING RELUCTANT NEETs IN YOUTH WOMEN 20-29												
(age)	High School						Primary School					
	Non-pregnant			Pregnant			Non-pregnant			Pregnant		
	20	24	29	20	24	29	20	24	29	20	24	29
Without PMI / None UFM / None IFM	20.0%	17.5%	14.8%	28.9%	25.7%	22.0%	31.3%	27.9%	24.0%	42.4%	38.5%	33.8%
With PMI / None UFM / None IFM	33.8%	30.3%	26.2%	45.2%	41.3%	36.5%	48.0%	44.0%	39.1%	59.9%	56.0%	51.0%
Without PMI / One UFM / None IFM	6.0%	5.1%	4.2%	9.4%	8.1%	6.7%	10.4%	9.0%	7.4%	15.9%	13.8%	11.6%
With PMI / One UFM / None IFM	11.5%	10.0%	8.3%	17.5%	15.3%	12.8%	19.2%	16.8%	14.2%	27.9%	24.7%	21.1%
Without PMI / Two(+) UFM / None IFM	5.2%	4.4%	3.6%	8.2%	7.0%	5.8%	9.1%	7.8%	6.5%	14.0%	12.2%	10.1%
With PMI / Two(+) UFM / None IFM	10.1%	8.7%	7.2%	15.5%	13.5%	11.2%	17.1%	14.9%	12.5%	25.0%	22.1%	18.8%
Without PMI / None UFM / One IFM	55.7%	51.7%	46.6%	67.0%	63.4%	58.6%	69.5%	65.9%	61.3%	78.7%	75.8%	71.9%
With PMI / None UFM / One IFM	71.9%	68.5%	64.0%	80.6%	77.9%	74.2%	82.3%	79.8%	76.3%	88.3%	86.5%	84.0%
Without PMI / None UFM / Two IFM	59.4%	55.4%	50.4%	70.3%	66.8%	62.1%	72.6%	69.2%	64.8%	81.1%	78.5%	74.9%
With PMI / None UFM / Two IFM	74.8%	71.7%	67.4%	82.8%	80.4%	77.0%	84.4%	82.1%	78.9%	89.8%	88.2%	85.9%
Without PMI / None UFM / Three(+) IFM	68.5%	64.9%	60.2%	77.9%	75.0%	71.0%	79.8%	77.1%	73.3%	86.5%	84.5%	81.7%
With PMI / None UFM / Three(+) IFM	81.6%	79.1%	75.5%	87.9%	86.0%	83.3%	89.0%	87.3%	84.9%	93.0%	91.8%	90.1%
Without PMI / One UFM / One IFM	24.5%	21.6%	18.4%	34.5%	30.9%	26.8%	37.1%	33.4%	29.1%	48.8%	44.8%	39.9%
With PMI / One	39.8%	36.0%	31.5%	51.7%	47.6%	42.7%	54.5%	50.5%	45.4%	66.0%	62.2%	57.4%

MARGINAL EFFECTS FOR REPRESENTATIVES PREDICTORS OF BEING RELUCTANT NEETs IN YOUTH WOMEN 20-29

(age)	High School						Primary School					
	Non-pregnant			Pregnant			Non-pregnant			Pregnant		
	20	24	29	20	24	29	20	24	29	20	24	29
UFM / One IFM												
Without PMI / One UFM / Two IFM	27.4%	24.3%	20.8%	38.0%	34.2%	29.8%	40.7%	36.8%	32.3%	52.6%	48.5%	43.5%
With PMI / One UFM / Two IFM	43.5%	39.5%	34.8%	55.4%	51.4%	46.4%	58.2%	54.2%	49.2%	69.3%	65.7%	61.0%
Without PMI / One UFM / Three(+) IFM	36.0%	32.4%	28.1%	47.7%	43.7%	38.8%	50.5%	46.5%	41.5%	62.3%	58.4%	53.4%
With PMI / One UFM / Three(+) IFM	53.4%	49.3%	44.3%	64.9%	61.2%	56.3%	67.5%	63.8%	59.0%	77.1%	74.1%	70.0%
Without PMI / Two(+) UFM / One IFM	21.9%	19.2%	16.3%	31.3%	27.9%	24.0%	33.7%	30.2%	26.1%	45.2%	41.2%	36.4%
With PMI / Two(+) UFM / One IFM	36.4%	32.7%	28.4%	48.0%	44.0%	39.1%	50.9%	46.8%	41.8%	62.6%	58.7%	53.8%
Without PMI / Two(+) UFM / Two IFM	24.6%	21.7%	18.4%	34.6%	31.0%	26.8%	37.2%	33.5%	29.1%	48.9%	44.9%	40.0%
With PMI / Two(+) UFM / Two IFM	39.9%	36.1%	31.6%	51.8%	47.7%	42.8%	54.6%	50.6%	45.5%	66.0%	62.3%	57.5%
Without PMI / Two(+) UFM / Three(+) IFM	32.7%	29.3%	25.3%	44.1%	40.1%	35.4%	46.9%	42.9%	38.0%	58.8%	54.8%	49.8%
With PMI / Two(+) UFM / Three(+) IFM	49.7%	45.7%	40.8%	61.5%	57.6%	52.7%	64.2%	60.4%	55.5%	74.4%	71.2%	66.8%

PMI: Psychiatric or Mental impairment. ; UFM: Unoccupied family members. ;IFM: Inactive family members. ;Two(+): Two or more. ;Three(+): Three or more

More inactive family members significantly increase the chances of becoming a reluctant NEET. For women with high school and primary school education who are not pregnant, having one inactive family member, on average, raises the probability of being a reluctant NEET by 34% and 38%, respectively. In households with one inactive member and pregnant women, the probability increases by 38% and 37% for high school and primary school graduates. Similarly, having two inactive family members increases the likelihood of being a reluctant NEET by 38% and 41% for non-pregnant women with high school or primary school education. For pregnant women in such households, the probabilities rise by

41% and 40%. With three inactive members, the probability rises by 47% and 49% for non-pregnant women with high and primary school education, respectively. Pregnant women in households with three inactive members show an increase of 49% and 46% in the probability of being a reluctant NEET.

For non-pregnant women with psychiatric or mental difficulties, having one inactive family member raises the likelihood by 38% for high school and 36% for primary school. Pregnant women in similar situations see a 37% increase for high school and 31% for primary school. For non-pregnant women with mental issues and two inactive family members, the chances rise by 41% for high school and 38% for primary

school. Pregnant women facing mental difficulties and two inactive members show a 39% increase for high school and 32% for primary school. When dealing with three inactive members, non-pregnant women with mental issues have a 49% higher likelihood for high school and 43% for primary school. Pregnant women in the same scenario see a 45% increase for high school and 36% for primary school.

3.4.2. MERs from Men Model

Table 5 shows the likelihood of young men being reluctant NEETs due to lower education levels and marital status. The chances of being a reluctant NEET increase with age, primary school education, and disability, regardless of specific factors. The strongest predictors were having unoccupied or inactive people at home.

Compared to high school, primary school education, on average, raises the probability of being a reluctant NEET by 13% and 18% for union/married and single young men, respectively. Single marital status also increases the probability by 11% and 16% for young men's high school and primary school attainment. Disability further increases the likelihood for both education levels and marital status, particularly for those with primary school attainment and single marital status.

Unoccupied family members reduce the chances of becoming a reluctant NEET for men. For men in union or married, having one unoccupied family member lowers the probability of being NEET by 10% and 20% for those with

high school and primary school education, respectively. Single men experience a decrease of 19% and 31% for high school and primary school attainments. Men in union or married with disabilities see a decrease of 22% and 34% in the probability of being a reluctant NEET. Single men with disabilities show a decrease of 33% and 41%. A second unoccupied family member further reduces the likelihood of being a reluctant NEET by two and four percentage points in union/married and single men with primary school education, respectively. A slightly lower effect was observed for men with a union/married and single marital status with a high school education attainment.

It is clear that inactive family members have a direct and significant impact on the likelihood of young men becoming reluctant NEETs. For young men with high school or primary school attainments and who are in a union or married, the presence of one inactive family member raises the probability of being a reluctant NEET by 14% and 20%. With two inactive family members, the likelihood increases by 20% and 27%; with three inactive members, it rises by 24% and 32%. For single young men with high school or primary school attainments in households with one inactive member, the probability of being a reluctant NEET increased by 19% and 22%. With two inactive family members, the likelihood increases by 26% and 28%, and with three inactive members, it rises by 31% and 32% for high school and primary school attainment, respectively.

Table 5. Predicted probability of men being reluctant NEETs for some representative values.

(age)	High School					
	union/married			single		
	20	24	29	20	24	29
Without DISB/ None UFM / None IFM	9.9%	12.2%	15.8%	18.8%	22.7%	28.2%
With DISB / None UFM / None IFM	22.9%	27.3%	33.4%	38.2%	43.8%	51.0%
Without DISB/ One UFM / None IFM	2.1%	2.6%	3.5%	4.3%	5.5%	7.2%
With DISB / One UFM / None IFM	5.5%	6.9%	9.1%	11.0%	13.6%	17.5%
Without DISB/ Two(+) UFM / None IFM	1.4%	1.7%	2.3%	2.9%	3.6%	4.9%
With DISB / Two(+) UFM / None IFM	3.7%	4.6%	6.2%	7.5%	9.4%	12.2%
Without DISB/ None UFM / One IFM	21.6%	25.9%	31.9%	36.5%	42.1%	49.3%
With DISB / None UFM / One IFM	42.3%	48.1%	55.3%	60.3%	65.7%	72.0%
Without DISB/ None UFM / Two IFM	26.8%	31.7%	38.3%	43.3%	49.1%	56.3%
With DISB / None UFM / Two IFM	49.3%	55.1%	62.1%	66.8%	71.8%	77.3%
Without DISB/ None UFM / Three(+) IFM	31.1%	36.3%	43.3%	48.4%	54.2%	61.3%
With DISB / None UFM / Three(+) IFM	54.5%	60.1%	66.9%	71.3%	75.8%	80.8%

(age)	High School					
	union/married			single		
	20	24	29	20	24	29
Without DISB/ One UFM / One IFM	5.1%	6.5%	8.5%	10.3%	12.8%	16.5%
With DISB / One UFM / One IFM	12.9%	15.8%	20.2%	23.7%	28.2%	34.5%
Without DISB/ One UFM / Two IFM	6.8%	8.5%	11.1%	13.4%	16.4%	20.8%
With DISB / One UFM / Two IFM	16.5%	20.0%	25.2%	29.3%	34.4%	41.2%
Without DISB/ One UFM / Three(+) IFM	8.3%	10.3%	13.4%	16.0%	19.4%	24.5%
With DISB / One UFM / Three(+) IFM	19.6%	23.6%	29.3%	33.8%	39.2%	46.3%
Without DISB/ Two(+) UFM / One IFM	3.4%	4.3%	5.7%	7.0%	5.7%	11.5%
With DISB / Two(+) UFM / One IFM	8.8%	11.0%	14.2%	17.0%	14.2%	18.2%
Without DISB/ Two(+) UFM / Two IFM	4.5%	5.7%	7.6%	9.2%	11.4%	14.7%
With DISB / Two(+) UFM / Two IFM	11.5%	14.1%	12.4%	21.4%	25.7%	31.7%
Without DISB/ Two(+) UFM / Three(+) IFM	5.6%	7.0%	9.2%	11.1%	13.7%	17.6%
With DISB / Two(+) UFM / Three(+) IFM	13.8%	16.9%	21.5%	25.2%	29.9%	36.3%

(age)	Primary School					
	union/married			single		
	20	24	29	20	24	29
Without DISB/ None UFM / None IFM	20.7%	24.9%	30.7%	35.3%	40.8%	48.0%
With DISB / None UFM / None IFM	41.0%	46.8%	54.0%	59.0%	64.5%	70.9%
Without DISB/ One UFM / None IFM	4.9%	6.1%	8.1%	9.8%	12.2%	15.8%
With DISB / One UFM / None IFM	12.3%	15.1%	19.3%	22.8%	27.2%	33.4%
Without DISB/ Two(+) UFM / None IFM	3.2%	4.1%	5.5%	6.7%	8.3%	10.9%
With DISB / Two(+) UFM / None IFM	8.4%	10.4%	13.6%	16.3%	19.7%	24.8%
Without DISB/ None UFM / One IFM	39.3%	45.0%	52.2%	57.3%	62.9%	69.4%
With DISB / None UFM / One IFM	63.1%	68.3%	74.3%	78.1%	81.8%	85.8%
Without DISB/ None UFM / Two IFM	46.2%	52.0%	59.2%	64.0%	69.2%	75.1%
With DISB / None UFM / Two IFM	69.4%	74.2%	79.4%	82.6%	85.7%	89.0%
Without DISB/ None UFM / Three(+) IFM	51.4%	57.1%	64.1%	68.7%	73.5%	78.8%
With DISB / None UFM / Three(+) IFM	73.7%	77.9%	82.6%	85.4%	88.1%	90.9%
Without DISB/ One UFM / One IFM	11.5%	14.2%	18.2%	21.5%	25.8%	31.8%
With DISB / One UFM / One IFM	26.0%	30.7%	37.3%	42.2%	47.9%	55.2%
Without DISB/ One UFM / Two IFM	14.8%	18.1%	22.9%	26.8%	31.6%	38.2%
With DISB / One UFM / Two IFM	31.8%	37.1%	44.1%	49.2%	55.0%	62.0%
Without DISB/ One UFM / Three(+) IFM	17.7%	21.4%	26.8%	31.0%	36.2%	43.2%
With DISB / One UFM / Three(+) IFM	36.5%	42.0%	49.2%	54.4%	60.0%	66.8%

(age)	Primary School					
	union/married			single		
	20	24	29	20	24	29
Without DISB/ Two(+) UFM / One IFM	7.9%	9.8%	12.8%	15.3%	18.6%	23.5%
With DISB / Two(+) UFM / One IFM	18.8%	22.6%	28.2%	32.6%	37.9%	44.9%
Without DISB/ Two(+) UFM / Two IFM	10.2%	12.7%	16.3%	19.4%	23.4%	29.0%
With DISB / Two(+) UFM / Two IFM	23.6%	28.0%	34.3%	39.1%	44.8%	52.0%
Without DISB/ Two(+) UFM / Three(+) IFM	12.4%	15.2%	19.4%	22.9%	27.3%	33.5%
With DISB / Two(+) UFM / Three(+) IFM	27.5%	32.4%	39.1%	44.1%	49.9%	57.1%

DISB: Disability.; UFM: Unoccupied family members.; IFM: Inactive family members.; Two(+): Two or more.; Three(+): Three or more

Young men in a union or married, regardless of education level, who are facing disability and have one inactive family member are 21% more likely to be reluctant to NEETs. Similarly, single men in the same situation see a 22% and 17% increase in probability for high school and primary school attainment, respectively. Those with two inactive family members have a 28% and 27% higher chance of being reluctant NEETs in union/married and single status. The likelihood increases to 33% and 31% for union/married men with disability and three inactive family members and 32% and 23% for single men in the same situation for high school and primary school attainment.

4. Discussion

In developed economies, the NEET indicator complements traditional youth unemployment measures and addresses issues like discouragement and marginalization among young people [32, 38]. As NEETs are a heterogeneous group and beyond labour market interest, it is crucial to study them based on their specific risks and trends of social exclusion.

This study proposes to differentiate between inactive NEETs-not actively seeking work- and those who refuse work even when offered, called "reluctant" NEETs. Then, factors related to reluctant NEET status among Chilean youth aged 20-29 from a gender perspective were examined. The 2022-NSECS revealed that 23.1% of Chilean youth 20-29 were NEETs, with a majority being women, indicating challenges in labour market integration [39]. The findings are consistent with trends in middle-income and Latin American countries, surpassing the OECD average [4, 6, 38, 40,41].

Current data indicates that 38% of NEETs aged 20-29 are considered reluctant NEETs. Almost 52% of youth reluctant NEET worked at some point, but only 4% had looked for work in the past month. This behaviour suggests a certain

degree of disenchantment or disappointment with work experience and loss of interest in working, contributing to the genesis of negative behaviour towards work and a greater risk of social exclusion or mental health issues. According to Su et al. (2022), remaining in prolonged NEET status -more than five months- is associated with risk factors, such as assuming a professional role, confinement at home, participation in deviant activities, and addiction or health problems [42].

The proportion of women in the reluctant NEETs category (71%) is notably higher than in the total NEET population (63%). This highlights the need for further research to study the specific characteristics of NEET status in young women separately from young men. Moreover, the rate of reluctant NEETs decreases with age in both genders, especially in young men. These differences are consistent with previous research on the disproportionate impact on women [6, 8, 38]. This suggests a need for more in-depth studies to understand the underlying causes and potential solutions.

It should be noted that the results analyzed below imply comparing the risk of being reluctant NEET with respect to a NEET status. After controlling for relevant regional education and labour market variables and survey weight, the study found that the individual factors associated with reluctant NEET status vary by gender. Lower education attainments, union/married status, pregnancy and mental issues were individual factors statistically significantly associated with women's reluctant NEET status. Meanwhile, primary school and technical high school attainments, single marital status, disability and economic dependence were statistically significantly associated with men's reluctant NEET status. These implications underscore the need for gender-specific policies and interventions to address the issue of reluctant NEETs.

The reason behind gender differences could be attributed to women's childcare and housework responsibilities in impoverished households, as well as mental health problems. In contrast, young men may have disabilities, have no interest in

working, are waiting for the results of employment applications or are looking for work sporadically. These patterns change with age; as age increases, women increase childcare and domestic tasks, while men's disinterest in work or waiting for the results of employment applications decreases.

Household factors play a relevant role in reluctant NEET status among young people, with unoccupied individuals at home showing a negative association, i.e., as the number of unoccupied increases, the reluctant NEET rate decreases, particularly for men, and inactive individuals showing a positive association, i.e., as the number of inactive increases, the reluctant NEET rate increases, especially for women. The differences in the impact of unoccupied and inactive family members on reluctant NEET status can be attributed to their distribution among NEET groups. It is also feasible to assume that psychological factors related to labour inactivity may contribute to this association. Unoccupied family members may lead to economic insecurity, motivating young people to pursue education or work. In contrast, prolonged work inactivity can have a negative psychological impact on all household members, affecting the motivation of young members to continue their education or seek employment.

Furthermore, single-parent households were positively associated with reluctant NEET status in both genders, but significantly only for women. In a single-parent home, in the context of poverty and a sexist culture, domestic responsibility relies on the women of the home. This responsibility increases in a large household, especially if a young woman is a single mother. Around two tiers (65%) of reluctant NEET women were single with children living in a household with an average of 4.2 (S.D.: 1.62) members.

This study demonstrates that having older adults at home can help prevent young NEETs from becoming reluctant NEETs. Older people are patient listeners who can offer patience, wisdom, and experience, which boosts young people's self-esteem and emotional stability. In the current data, over a third of reluctant NEET men (37%) live with older adults, compared to a quarter of reluctant NEET women (24%). This finding highlights the positive impact of intergenerational living arrangements on young people's development.

Households receiving social transfers were negatively associated with reluctant NEET status, i.e., as the amount of social transfers increases, the reluctant NEET rate decreases. However, the group significantly favoured these transfers (up to 10%), which does not correspond to low-income families but middle-class ones. These families have an average total income of US\$1,400, belonging on average to the fifth deciles, and 75% of them do not qualify as 5D-multidimensional poverty. This finding suggests that social transfer policies effectively mitigate the economic situation of the middle class and reduce the risk of their young people becoming reluctant NEETs.

Average marginal effects show that for women, the probability of being a reluctant NEET decreases with age while it increases for men, highlighting gender differences. Single

marital status significantly impacts the likelihood, increasing for men and decreasing for women. Pregnancy and mental issues increase the probability for women, while disability and economic dependency do so for men. Education level also plays a role, with primary school increasing the probability for both sexes and technical high school decreasing it for men. Household factors such as having inactive people at home increase the likelihood, particularly for women, while unoccupied people at home decrease it for both sexes. Young women in single-parent homes are slightly more likely to be reluctant NEETs. The presence of older adults at home and receiving social transfers reduces the likelihood of reluctant NEETs for both sexes. 5D-multidimensional poor households reduce this probability slightly only for young men.

Analysis of marginal effects at representative values provides insight into the combined effect of different risk factors on the likelihood of being a reluctant NEET for both sexes. For example, a 20-year-old woman with a primary school education and pregnant is 11% more likely to be a reluctant NEET compared to a non-pregnant woman with the same education level. The likelihood increases to 14% and 22% when comparing high school-educated pregnant and non-pregnant women. Adding mental health issues raises these probabilities. On the other hand, a 20-year-old man with only primary school education and single marital status is 15% more likely to be reluctant NEETs compared to a man with the same education level who is married. This likelihood increases to 25% and 17% compared to a man with a high school education who is in union/married or single, respectively. The chances of being reluctant NEETs are further increased if the man also has disabilities.

This study has some strengths, including a large and representative sample, the use of adjustment by relevant founders, a satisfactory overall accuracy and predictive performance of the logistic models, and the inclusion of survey weight for generalizability. However, the results of the present study need to be interpreted considering some limitations. Data relied on self-reports, potential endogenous effects regarding unemployment and inactivity variables at home that could be included among the NEET youth themselves, potential selection bias due to the observational nature of the study and potentially unobserved confounders such as personality traits, substance addiction, and social benefits specific to youth. Furthermore, there is no data on how long young NEETs stay in a reluctant state, making it challenging to explore the effect of time on this inactivity condition.

5. Recommendation

Future research should focus on longitudinal studies to track young people's life trajectories, including data on economic, social, and gender inequalities. Understanding in detail gender differences could help policymakers identify critical issues in school-to-work transitions. Also, it is necessary to understand in depth the causal factors behind the inactivity

of young NEETs as well as the incentives for youth to finish high school and pursue graduate education. Monitoring indicators like education dropout rates and youth labour market participation- formal and informal work rates- can guide policymakers in addressing socio-economic exclusion. Evaluating vocational orientation and training strategies is crucial to prevent young people from becoming NEET and being marginalized. Public policies should prioritize offering work opportunities and skill development to avoid prolonged inactivity among young NEETs, especially in Low and Middle-Income countries (LMICs).

6. Conclusion

The NEET phenomenon requires examining key socio-economic factors influencing the education-to-work transition for young people from a gender perspective. The reluctant NEET rate, indicating those unwilling to work when offered, is crucial for monitoring social exclusion risk among youth, mainly in LMICs where youth social exclusion may be associated with violence and criminality. Individual factors like lower education, marital status, pregnancy, mental issues, disabilities and household factors such as unoccupied or inactive family members, single-parent homes, living with older persons and social transfers are associated with reluctant NEET status in Chilean youth aged 20-29, highlighting the link between low human capital levels, poverty, and marginalization.

Abbreviations

NEET	Not in Employment, Education, or Training
UK	United Kingdom
OECD	Organization for Economic Cooperation and Development
ILO	International Labour Office
2022	2022 National (Chilean) Socioeconomic
NSECS	Characterization Survey Data
MSDF	Ministry of Social Development and Family
NIS	National Institute of Statistics
ECLA	Economic Commission for Latin America
VIF	The Variance Inflation Factor
S.D.	Standard Deviation
OR	The Odds Ratio
95% C.I.	A 95% Confidence Interval
AMEs	The Average Marginal Effects
MERs	The Marginal Effects at Representative Values
Curve ROC	Receiver Operating Characteristic Curve

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Author Contributions

Pedro Olivares-Tirado: Conceptualization, Formal Analysis, Investigation, Methodology, Writing - original draft, Writing - review & editing.

Rosendo Zanga: Resources, Formal Analysis, Investigation, Visualization, Project administration, Writing - review & editing.

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Data Availability Statement

The data supporting this study's findings can be found at <https://observatorio.ministeriodesarrollosocial.gob.cl/encuesta-casen-2022> (a publicly available repository URL). In the heading named "Base de datos Casen 2022 STATA (versión 18 de marzo 2024)"

Conflicts of Interest

The authors declare no conflicts of interest.

References

- [1] Ralston, K. et al. (2021), "Economic inactivity, not in employment, education or training (NEET) and scarring: The importance of NEET as a marker of long-term disadvantage:", *Work, Employment and Society*, Vol. 36/1, pp. 59-79, <https://doi.org/10.1177/0950017020973882>
- [2] OECD (2022), "How does educational attainment affect participation in the labour market?", in *Education at a Glance 2022: OECD Indicators*, OECD Publishing, Paris. <https://doi.org/10.1787/0c0b63ae-en>
- [3] Helbling, L. and S. Sacchi (2014), "Scarring effects of early unemployment among young workers with vocational credentials in Switzerland", *Empirical Research in Vocational Education and Training*, Vol. 6/12, <https://doi.org/10.1186/s40461-014-0012-2>
- [4] OECD (2023), "Transition from education to work: Where are today's youth?", in *Education at a Glance 2023: OECD Indicators*, OECD Publishing, Paris. <https://doi.org/10.1787/9117e379-en>
- [5] Social Exclusion Unit. (1999). Bridging the gap: New opportunities for 16-18 year olds not in education, employment or training. Her Majesty's Stationery Office. <https://www.gov.uk/government/publications>
- [6] Kiss, L., Fotheringham, D., & Quinlan-Davidson, M. (2022). Latin American young NEETs: Brazil as a case study for systemic risks of youth social exclusion. *Journal of Youth Studies*, 25(10), 1386-1410. <https://doi.org/10.1080/13676261.2021.1965107>

- [7] Levels M, Brzinsky-Fay C, Holmes C, Jongbloed J, Taki H (2022). Not in Employment, Education, or Training around the World. Dynamics of Marginalized Youth: Not in Education, Employment, or Training Around the World. Book. Routledge Studies in Labour Economics. First published 2022. ISBN: 978-0-367-56156-7 (hbk) ISBN: 978-0-367-56157-4 (pbk) ISBN: 978-1-003-09665-8 (ebk) <https://doi.org/10.4324/9781003096658>
- [8] Rahmani H, Groot W. Risk Factors of Being a Youth Not in Education, Employment or Training (NEET): A Scoping Review. *International Journal of Educational Research*. Volume 120, 2023, 102198, ISSN 0883-0355, <https://doi.org/10.1016/j.ijer.2023.102198>
- [9] OECD (2018), Education at a Glance 2018: OECD Indicators, OECD Publishing, Paris, <https://doi.org/10.1787/eag-2018-en>
- [10] OECD (2016), Society at a Glance 2016: Chapter 1- The NEET challenge: What can be done for jobless and disengaged youth? OECD Social Indicators, OECD Publishing, Paris, <https://doi.org/10.1787/9789264261488-en>
- [11] Statistics Canada and Council of Ministers of Education, Canada (CMEC). 2016. Education Indicators in Canada: An International Perspective 2016, Statistics Canada Catalogue no. 81-604-X, chapter C2 - Transitions to the labour market.
- [12] Eurofound (2012), NEETs - Young people not in employment, education or training: Characteristics, costs and policy responses in Europe, Publications Office of the European Union, Luxembourg. Massimiliano Mascherini. Research manager. <https://doi.org/10.2806/41578>
- [13] OECD. (2014). Education at a glance 2014. OECD indicators. Paris: OECD <https://doi.org/10.1787/eag-2014-en>
- [14] Bălan M (2015). Methods to Estimate the Structure and Size of the "Neet" Youth, *Procedia Economics and Finance*, Volume 32, 2015, pages 119-124, ISSN 2212-5671, [https://doi.org/10.1016/S2212-5671\(15\)01372-6](https://doi.org/10.1016/S2212-5671(15)01372-6).
- [15] Furlong, A. (2006). Not a very NEET solution: representing problematic labour market transitions among early school-leavers. *Work, Employment and Society*, 20(3), 553-569. <https://doi.org/10.1177/0950017006067001>
- [16] MacDonald, R. (2011). Youth transitions, unemployment and underemployment: Plus ça change, plus c'est la même chose? *Journal of Sociology*, 47(4), 427-444. <https://doi.org/10.1177/1440783311420794>
- [17] Roberts, S. (2010). Beyond 'NEET' and 'tidy' pathways: considering the 'missing middle' of youth transition studies. *Journal of Youth Studies*, 14(1), 21-39. <https://doi.org/10.1080/13676261.2010.489604>
- [18] Couronné J., & Sarfati, F. (2018). Une jeunesse (in)visible: Les « Neets vulnérables » de la Garantie jeunes. *Travail et Emploi*, 1(153), 41-66. <https://doi.org/10.4000/travailemploi.7905>
- [19] Yates, S., & Payne, M. (2006). Not so NEET? A critique of the use of 'NEET' in setting targets for interventions with young people. *Journal of Youth Studies*, 9(3), 329-344. <https://doi.org/10.1080/13676260600805671>
- [20] Dan Woodman and Andy Bennett (eds) (2015). Youth Cultures, Transitions, and Generations: Bridging the Gap in Youth Research. New York: Palgrave Macmillan. 195 pages. ISBN: 978-1-137-37722-7.
- [21] Arnett, J. J., & Tanner, J. L. (Eds.). (2006). Emerging adults in America: Coming of age in the 21st century. American Psychological Association. <https://doi.org/10.1037/11381-000>
- [22] Eurofound. (2012). NEETs. Young people not in employment, education or training: Characteristics, costs and policy responses in Europe. Publications Office of the European Union. ISBN 978-92-897-1094-7. <https://doi.org/10.2806/41578>
- [23] Eurofound. (2016). Exploring the diversity of NEETs. Publications Office of the European Union Massimiliano Mascherini M, Ledermaier S. ISBN 978-92-897-1466-2. <https://doi.org/10.2806/15992>
- [24] Bynner J and Parsons S. (2002). Social exclusion and the transition from school to work: the case of young people not in education, employment, or training (NEET). *Journal of Vocational Behavior*, 60(2): 289-309. <https://doi.org/10.1006/jvbe.2001.1868>
- [25] Coles B., Hutton S., Bradshaw J., Craig G., Godfrey C., and Johnson J. (2002). Literature review of the costs of being not in education, employment or training at age 16-18. Research report 347. London: Department for Education and Skills. Queen's Printer 2002. ISBN 1 84185 743 2. <https://webarchive.nationalarchives.gov.uk/ukgwa/20071104154221/http://www.dfes.gov.uk/research/data/uploadfiles/RR347.pdf>
- [26] OECD (2010), Off to a Good Start? Jobs for Youth, Jobs for Youth/Des emplois pour les jeunes, OECD Publishing, Paris, <https://doi.org/10.1787/9789264096127-en>
- [27] Chen Y.W. (2011). Once a NEET always a NEET? Experiences of employment and unemployment among youth in a job training programme in Taiwan. *International Journal of Social Welfare*, 20(1): 33-42. <https://doi.org/10.1111/j.1468-2397.2009.00711.x>
- [28] European Commission. (2010a). Proposal for a council decision on guidelines for the employment policies of the Member States - Part II of the Europe 2020 Integrated Guidelines. Brussels: European Commission. <http://aei.pitt.edu/id/eprint/46333>
- [29] European Commission. (2010b). Youth on the move: an initiative to unleash the potential of young people to achieve smart, sustainable and inclusive growth in the European Union. Luxembourg: Publications Office of the European Union. ISBN 978-92-79-16673-0 <https://doi.org/10.2766/69901>
- [30] European Commission. (2013). Youth Employment Initiative. Brussels: European Commission. <http://ec.europa.eu/social/main.jsp?catId=1176>
- [31] Quintano C, Mazzocchi P, Rocca A. The determinants of Italian NEETs and the effects of the economic crisis. *Genus*. 2018; 74(1): 5. Epub 2018 Mar 22. PMID: 29937552; PMCID: PMC5978893. <https://doi.org/10.1186/s41118-018-0031-0>

- [32] Brunet S. (2018), "The transition from school to work - the NEET (not in employment, education or training) indicator for 25- to 29-year-old women and men in Canada". Education Indicators in Canada: Fact Sheet, October 2018. Catalogue no. 81-599-X - No. 13 ISSN 1709-8653 ISBN 978-0-660-27602-1. <https://www150.statcan.gc.ca/n1/pub/81-599-x/81-599-x2018-013-eng.htm>
- [33] Encuesta de Caracterización Socioeconómica Nacional (Casen) 2022. División Observatorio Social Subsecretaría de Evaluación Social Ministerio de Desarrollo Social y Familia. Database available at: <https://observatorio.ministeriodesarrollosocial.gob.cl/encuesta-casen-2022>
- [34] Manual para la Investigación. Casen 2022. División Observatorio Social Subsecretaría de Evaluación Social Ministerio de Desarrollo Social y Familia. Noviembre de 2023. <https://observatorio.ministeriodesarrollosocial.gob.cl/encuesta-casen-2022>
- [35] Principales cambios metodológicos Casen 2022. Nota técnica N°1. División Observatorio Social julio 2023. <https://observatorio.ministeriodesarrollosocial.gob.cl/encuesta-casen-2022>
- [36] Allison, P. D. Logistic Regression Using the SAS System: Theory and Application. Second Edition. 2012. SAS Institute Inc. SAS Campus Dr. Cary, NC United States ISBN: 978-1-59994-641-2
- [37] Williams, R. (2012). Using the Margins Command to Estimate and Interpret Adjusted Predictions and Marginal Effects. The Stata Journal, 12(2), 308-331 331 <https://doi.org/10.1177/1536867X1201200209>
- [38] Elder, S. 2015. What does NEETs Mean and Why Is the Concept so Easily Misinterpreted. Work4youth Technical Brief No.1. International Labour Office (ILO), Geneva. https://www.ilo.org/wcmsp5/groups/public/dgreports/dcomm/documents/publication/wcms_343153.pdf
- [39] Olivares-Tirado P, Zanga R. The effect of leading 5D-multidimensional household poverty indicators on the risk of being NEET in Chile: a gender perspective. Human Service Organizations: Management, Leadership & Governance Journal. In publishing process from June 28, 2024. Submission ID 241558820
- [40] International Labour Organisation (2020). Global Employment Trends for Youth 2020: Technology and the Future of Jobs. Geneva: ILO. https://www.ilo.org/wcmsp5/groups/public/-dgreports/-dcomm/-publ/documents/publication/wcms_737648.pdf
- [41] De Hoyos, R., Rogers, H., & Székely, M. (2016). Out of school and out of work: Risk and opportunities for Latin America's ninis. World Bank, Washington, DC. <https://doi.org/10.1596/K8318>
- [42] Su, X.; Wong, V.; To, S. Characteristics of Longer-Term versus Transitional NEETs in Hong Kong: Implications for Career Support Services. Br. J. Guid. Couns. 2022, 1-16. <https://doi.org/10.1080/03069885.2021.2023730>

Biography



Pedro Olivares-Tirado is a visiting Professor at the Federal University of Pernambuco, Brazil. He holds a PhD in Human Care Sciences from the University of Tsukuba, Japan (2012), a Master's in Health Economics from the University of York, UK (2004), and an MBA from the University of Chile (2002). He graduated in Medicine from the University of Chile in 1982. He has experience in public hospital administration and as a senior researcher in the Health Superintendency of Chile. He is a member of various research networks focused on ageing (LARNA and RIES-LAC) and was the Director of the Health Economist Association of Chile. He has authored books "Trends and Factors in Japan's Long-term Care Insurance System: Japan's 10-year Experience" (2014) and Socioeconomic Inequalities and Intergenerational Support in Functional Health in Brazilian Older Adults" in the book "Intergenerational Relations—Contemporary Theories, Studies and Policies" (2023). He has several publications in international journals and works as a review editor for Frontiers in Public Health and IntechOpen Publishers.



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